UNIVERSITY OF CAPE COAST

DETERMINANTS OF SCHOOL ATTAINMENT AND SCHOOLING ACHIEVEMENT IN GHANA

BY

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Declaration

Candidate's Declaration

I hereby declare that this thesis is the result of my original work and that no part of it has been presented for another degree in this university or elsewhere.

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Supervisors' Declaration

We hereby declare that the preparation and presentation of the thesis were supervised in accordance with the guidelines on supervision of thesis laid down by the University of Cape Coast.

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Abstract

This study focuses on the parental decision making in relation to investment in the education or schooling of the child. The study distinguished between school-attainment and schooling achievement as separate schooling outcomes of the educational production function. The Study used data from a survey of households from four communities in southern Ghana, which was initially used for an investigation into the impact of excess fertility on the schooling of children in Ghana and data on BECE results of the children obtained from the West African Examinations Council.

The results of the study show that school attainment and schooling achievement can be explained adequately by the child's own characteristics, the household characteristics and the community characteristics. Household characteristics are strongest in explaining school attainment while they are weaker in explaining schooling achievement. On the other hand, the community dummies used to proxy the community environmental effects turned out to be strongest for the most urban of the four communities and weakest for the most rural of the communities. Educational policies must always consider both attainment and achievement as very important and necessary components of education production. Policies aimed at improving school attainment should have components, which aim at schooling achievement.

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Dedication

To my Family

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CHAPTER ONE

INTRODUCTION

Background

The productivity of a country's labour force has been established to be dependent, among other things, on the level of education. It is believed that education and training provide the skills needed for the effectiveness and efficiency of the labour force. The highly positive nature of the relationship between productivity and the level of education suggests that educated people might be more productive than the uneducated (Jones, 2001). Thus, education has been conceived to be very important in ensuring higher productivity, higher growth and for that matter higher economic development.

At independence in 1957, Ghana had a small proportion of its population that was literate. Most of the literate at that time graduated from a colonial education system that was concerned with training in the "three Rs" (Reading, Writing and Arithmetic). Since independence, however, there have been many attempts to review and reform the education system to become more relevant in training the human capital needed for effective participation in the process of wealth creation, economic growth and for that matter economic development.

The Education Act of 1961, coming during the era of the First Republic under Prime Minister Kwame Nkrumah, sought to introduce compulsory fee-free basic education (Primary and Middle Schools) in Ghana. This was to enable majority of children to benefit from education at least at the

basic level. The Kwapong Committee (1967) was mandated to review the education system which existed under the under the 1961 education act. At the end of its work, the Kwapong committee recommended ways of reducing the length of period in school, especially in relation to Pre-University education. This committee's report led to the establishment of Experimental Schools at the regional and some district levels to run an eight-year primary education programme, after which students could enter into Secondary School through the Common Entrance Examination. After the eighth year, however, those who were unable to make it to the Secondary School had the opportunity to enter Special Continuation Schools to pursue Vocational and Technical Education.

The Dzobo Committee of 1972 proposed an expanded curriculum that made an adequate provision for both Vocational and Technical education at the basic level in addition to a reduction in the length of Pre-University education from 15 years to 13 years. Thus the Dzobo committee's proposal dealt with both structure and content review of pre-University education in Ghana and is normally regarded as the prelude to the 1987 education reform.

The Evans-Anfom Commission (1986) was charged with review of the education system with the broad objectives to expand access and make access more equitable, change the structure of the school system by reducing the length of Pre-University education and the improvement of pedagogic efficiency and effectiveness. The recommendations of the Evans-Anfom commission included, among others:

i. a proposal on Basic Education seeking to ensure that the State provides a universal, free and ultimately compulsory education for all Ghanaian children who attain the age of 6 years for a stated number of years after which, depending on their abilities and capabilities, they may go on to further formal schooling, or into the world suitably prepared, i.e., employable

ii. a change in the names of institutions at the first cycle from 'Primary School' and 'Middle/Junior Secondary/Continuation School' to 'Junior' and 'Senior Schools' respectively

The recommendations of this commission led to the 1987 education reform, which is a milestone in the history of education in Ghana which introduced the Basic Schools comprising the Primary and Junior Secondary Schools. In addition, the number of years of pre-University education has been cut short from the original 16 years to 12 years.

The most recent of the education reviews was carried out by the Anamuah-Mensah Committee. The Committee examined the challenges of education in Ghana and how they would respond to the national development goal of poverty alleviation and wealth creation. The Committee was of the view that the philosophy underlying the education system in Ghana should be the creation of a well-balanced (intellectually, spiritually, emotionally and physically) individuals with the requisite knowledge, skills values and aptitudes for self actualization and for the socio-economic and political transformation of the nation.

To remedy the identified defects in the old system, the Anamuah-Mensah Committee recommended a new basic education structure made up of 2 years kindergarten, 6years primary, and 3 years Junior Secondary School. The new basic education would therefore be 11 years in duration. The Committee further recommended that after the basic education, the main stream education should comprise:

i. 3 years senior secondary, leading the post secondary and tertiary education;
ii. Parallel technical/vocational education leading to polytechnics and the world of work; and
iii. Apprenticeship leading to the world of work;
iv. 3-4 years tertiary education.

Other recommendations of the committee are the creation of Open Community Colleges and an Open University to provide avenues for work-study programmes and life-long education. The specialised institutions under the new structure would were to be upgraded to award diploma and would be affiliated to relevant universities and polytechnics. Credit transfer, distance education, ICT, Special education and Guidance and counseling were also supposed to be critical components of the new education structure.

Throughout these epochs, Ghana as a country was trying to improve the quality of its education delivery. It can be said that the most important reason for all these efforts at improving the quality of education delivery is that the importance of education in the improvement of the human capital has been identified and acknowledged by the various governments of Ghana.

Statement of Problem

From the introduction above, one is left with no doubt that Ghana has realized the importance of education and has been making so much effort at the improvement of delivery. Under the First Republican Government of Ghana, the rate at which the supply of schools was increased can readily attest to this. Ghana saw many new primary and middle schools spring up in the districts. Secondary schools and teacher training colleges were also rapidly expanded. Vocational and Technical Schools were not left out. Two universities were established in this period to add to the existing University of Ghana. The philosophy behind the rapid increase in the number of schools, it is believed, was that the availability would increase enrollment, among other things, looking at it from the supply side only.

On the demand side, it can be said that there were so many attempts by the government to reduce the price of enrolling and attendance to the minimum to enable many eligible candidates to enroll. A major aspect of this policy has been free tuition enjoyed by all students in the public education system, which still prevails in Ghana. In some parts of the country there were attempts to use free education, including the provision of incentives other than the free tuition as a way of luring parents into enrolling their children. One aspect of the 1987 education reform, and a mandate from the Constitution of the Fourth Republic of Ghana, is the introduction of what has come to be called the Free and Compulsory Universal Education (FCUBE), which is another attempt to lower the market price of schooling at the basic level.

Article 38 Section 2 of the 1992 Constitution of the Republic of Ghana states that:

> The Government shall within two years after parliament first meets after the coming into force of this constitution, draw up a programme for the implementation within the following ten years, for the provision of free, compulsory and universal basic education.

Despite all these laudable efforts from the various governments of Ghana, school enrollment has remained below the expectation of hundred percent for children of Primary school going age. Female enrollment for children aged 6-11 was 81.6% with the male enrollment being 84.4% for the same age range as at March 1999 (GLSS 4). For the same age range, enrollment was put at 95.0% for boys and 85.6% for girls in Accra. For other rural areas, the proportions were 91.1% and 87.4% for boys and girls respectively. In the rural savannah region the ratios stood at 66.3% and 61.3% respectively for boys and girls. One inference that can be drawn from these statistics is that the numerous attempts by the various governments to improve access by increasing the supply of schools and reducing the price of enrollment, have not been able to achieve the desired 100% enrollment even at the primary school level.

The educational rights of a citizen, as enshrined in the Constitution of Ghana, under article 25 Section 1 indicates that:

> All persons shall have the right to equal educational opportunities and facilities and with a view to achieving the full realization of that right –

i. basic education shall be free compulsory and available to all;

ii. secondary education in its different forms, including technical and vocational education, shall be made generally available and accessible to all by every appropriate means, and in particular, by the progressive introduction of free education;

iii. higher education shall be made equally accessible to all, on the basis of capacity, by every appropriate means, and in particular, by progressive introduction of free education;

iv. functional literacy shall be encouraged or intensified as far as possible;

v. the development of a system of schools with adequate facilities at all levels shall be actively pursued.

The issue of education of the child as a right, as stated here, coupled with the fact that the Constitution mandates the Legislature to ensure the availability and for that matter access of education at the various levels, is also pointing to the fact that Ghana as a nation has always realized the inadequacy of the opportunities available to children of school going age as far as the supply of schools are concerned. The free and compulsory nature that basic education is to take also points to the fact that cost to the beneficiary is an

element that may be hindering the general and total access to education, at least at the primary or basic level.

Further to the constitution, the first parliament of the fourth republic of Ghana, under the leadership of Flt. Lt. Jerry John Rawlings, approved a quasi development plan aimed at uplifting the entire country into the middle-income category by the year 2020. Specifically, this document of policies was titled "Ghana -Vision 2020". On education the document clearly states;

> The overall goal of education policy is to ensure a population in which all citizens, men and women alike, are at least functionally literate and productive. In addition, the education system will have major responsibility for providing the means for our population to acquire the necessary skills to cope successfully in an increasingly competitive global economy.
>
> Success in achieving these objectives will require resolution of the problems that are plaguing the education system, particularly, at the basic level. These include: poor quality of instruction; shortages of qualifies teachers; inadequate facilities and instructional materials; weak administration and management; and the limited access, especially for the poor and of an increasing access to basic and secondary education. Overall, the medium-term goal will be to establish a firm foundation for re-orienting the entire education system toward the promotion of creativity, science and the acquisition of more skills.

The objectives for the educational policy under the Ghana –Vision 2020 include:

i. Strengthening and improving the system of basic and secondary education;

ii. Increasing enrollment rates at the basic and secondary education levels, particularly among girls and in the rural areas;

iii. Increasing opportunities for pre-schooling

iv. Increasing female enrollment and completion rates at all levels of the education system

v. Reducing dropout rates, particularly among girls and in the rural areas; etc.

The import of this policy is not different from those of the earlier policies in that they have not specifically addressed issues related to parental decision making which is important in determining which child gets enrolled. As has been stated earlier, the governments since independence have at the macro-level, provided facilities that can accommodate the schools, have provided teachers, at least to the public schools. In addition free tuition and the textbooks have normally been provided to ease the burden of parents in looking after their children in school. Such policies imply that education is being regarded as a public good. However, if we regard education as a private good, at the micro-level, the importance of parental decisions come into focus as parents still possess the power to decide whether their children should enroll or not.

The old age security hypothesis of fertility, widely thought to be very relevant in explaining fertility behaviour in developing countries, in the absence of compulsory social security, regards the child as parental investment, which becomes beneficial at old age. This hypothesis stresses the importance of quantity of children in parental fertility decisions. Many of the developing countries, including Ghana, are believed to have started experiencing fertility transition, in which the fertility decisions emphasize the quality as opposed to quantity of children. This brings to the fore the importance of parental decision on the schooling of the child as a way of improving the quality of the child.

In this situation, the child, instead of being a consumer good, becomes more an investment good. Different parents invest differently in their children. Also, the same parent or parents might invest differently in different children. Investment into child quality must, therefore, be regarded as a variable that must be explained to be able to understand how parental decisions about child schooling can go to complement the national desire to increase human capital formation in general. This consideration leads to the question: what factors influence parental decision on the investment into the schooling (human capital development) of the children?"

Statement of Objectives

In an attempt to solve the problem stated above the general objective will involve delineating the factors that go to determine parental decisions regarding investment in schooling of children which involves enrollment, progress in school and examination grades obtained by students at a particular

end point of the educational ladder. In specific terms, the objectives of the research are to:

i. model the educational production function as a reduced form solution of a utility optimization problem

ii. evaluate the determinants of school attainment (the particular grade attained by a child) as a measure of the outcome of the educational system

iii. determine the factors that influence schooling achievement (the examination result obtained by the child after attaining a specified grade of schooling) as the end result of educational process or an educational production.

iv. make recommendations as to how to improve educational production in the form of both grade attainment and schooling achievement in Ghana.

Hypotheses

The model used in the investigation of both school attainment and schooling achievement was derived the solution of an inter-temporal utility maximization problem in an overlapping generations setting. The determinants of schooling (both attainment and achievement) were categorized into household characteristics, child's own characteristics and the community environmental characteristics. The hypotheses tested in the study were therefore derived from the model as follows:

i. Household characteristics are important in determining the school attainment and schooling achievement.

ii. The child's own characteristics have a significant influence on the school attainment and schooling achievement.

iii. The community environmental characteristics have a significant influence on the school attainment and schooling achievement.

Justification of the Study

Ghana has, for a long time, fashioned out policies that aim at achieving very high rate of enrollment, at least in the primary school. Many of these policies such as building of news school blocks, the supply of teachers, the supply of teaching-learning materials, happen to be at the supply side of achieving the targets. The demand side has not been given the same emphasis as the supply side. Government provision of the schools does not necessarily lead to the use of such facilities. A greater part of the decision to enroll in school rests with the parents. For success in achieving high rates of enrollment, it is important that a good understanding of the parental decision-making process becomes very relevant and important. Education is not, and must not be regarded as only a public good. The private good dimension of education is therefore very relevant in our understanding of the education process and its outcomes.

In Mehrotra Santosh (1998), one sees reasons why some countries are able to achieve high enrollment. Santosh clearly documents the importance of the demand side factors. Such demand side factors include reduction in fees,

language of instruction and the introduction of interventions for the poor in the form of feeding at school, provision of health care services for the school children and the provision of school uniforms. These cannot be done without understanding the parental decision-making process. Parents may or may not decide to invest in the schooling of the child. A parent's decision to invest in the schooling of the child greatly depends on the expected gains that the parents or the household expect to make from the schooling of the child. This may be compared to the opportunity cost of other benefits that the child, parents and the household may expect to get from other types of investment in the child. Thus, government investment in the improvement of the provision of educational facilities is necessary for improvement in enrollment, attainment and achievement but is not sufficient for such results to be realized. Parental decision related to investment in the education of the child, the demand side in the educational production function is also very important and cannot be overlooked in evaluating the determinants of school attainment and schooling achievement.

Governments normally concentrate on the supply side of the educational production function in the bid to improve the enrollment, school attainment and schooling achievement. It is important to note that parents have a very tremendous role in the decision as to whether to invest in the child's education or schooling. This study focuses on the parental decision making as to how to manage the investment in the education or schooling of the child. It is believed that a major contribution of this study is to improve

the understanding of parental-decision making regarding schooling more as a private good than as a public good.

Very few studies have critically investigated the issue of parental decision making in relation to investment into the education of children generally. The most important work in the available literature, which comes close to do this is titled 'Schooling of Girls and Boys in a west African Country: the effects of Parental Education, Income and Household Structure' (Glick and Sahn, 1997). Clearly Glick and Sahn (1997) did not attempt to investigate the parental decision making process per se. In attempting to look at the effect of parental and household characteristics they use a model of overlapping generations close to what is used in this study. It is important to note that apart from Glick and Sahn (1997), no other study has been identified to come close to this current study and even to discuss the parental decision making process from the fundamentals to be the basis of investment of the schooling of the child.

Secondly, the Glick and Sahn (1997) study was specifically on Guinea, using data on the capital Conakary. To the best knowledge of the investigator, there has not been any study of this nature aimed at investigating the issue of parental decision making on investment of schooling of the child. It is hoped that this study would throw some amount of light on the issue and aid the understanding of how parents make decisions related to investment into the education of their children generally and particularly in Ghana.

Organization of the Study

The first chapter discussed the introduction of the study. The next chapter outlined the review of related literature. This spanned general educational production functions, microeconomic educational production functions and ended with review of intervention studies. Chapter three presented the model development. Starting with the conceptual framework, this chapter outlined the model as a constrained optimization problem which was solved to arrive at the model used for the estimation of the determinants of attainment and achievement.

Chapter four presented the demographic description of respondents used in the study. In chapter five the discussion involved the steps used in processing the data for the estimations. Chapter six presented the results for the determination of school attainment while chapter seven presented the results of schooling achievement. Chapter eight discussed the results of both school attainment and schooling achievement. The summary, conclusions and recommendations are outlined in chapter nine.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

Introduction

There is a broad consensus that the expansion in the skills, knowledge and capacities of individuals – increasing human capital – is a key element in developing countries' economic progress and in raising their living standards (Pritchet & Filmer, 1999). Primary and secondary schooling have been identified as playing important roles in the development of human capital. As a result of this realization, it is very common for governments of the developing countries to attempt setting targets for the expansion of such schooling. Parents may consider their children as investment goods and decide to invest in their schooling in order to improve their human capital level. Even if parents consider their children as consumer goods, the fact that education is able to improve a person's social status may make the parent decide to invest in the schooling of their children. Looking at it both ways, parental decision related to the schooling of the child, becomes very relevant in assessing the effectiveness of role of government in promoting schooling of children. This review starts with general educational production functions, followed by microeconomic educational production functions and lastly, some educational intervention studies are reviewed.

Review of General Educational Production Functions

The act of transforming factors of production into the goods and services that are desired for consumption and investment is technically referred to as production. In this regard therefore, production refers to the technical relationship that exists between the inputs and the output of a particular commodity. The process of sending a child to school with the hope that the educational process would transform the child into a better and more useable commodity is termed educational production which can be likened to the normal theory of production in Economics. The educational production function, would therefore be expected as it were, to be a relationship between some inputs and output (or outcome) of the form $Q = f(f_1, f_2, f_3, ...)$, where f_i denotes the inputs and Q is the educational outcome.

The returns to the inputs may be counted in terms of the marginal product to or in terms of the productivity of the inputs. In normal production theory, if the marginal product of a particular variable factor of production is negative, then too much of that factor is being used in the production process. Alternatively, if the marginal product of a particular input is very low relative to the marginal product of others, it might pay to use more of the input with a higher marginal product per Cedi or Dollar, as the case may be. Put differently, the presence of diminishing returns, in the short run of the production function, would imply that the particular factor concerned is being overused and a reduction in its quantity might lead to an increase in overall output.

Using a similar argument for educational production, the attainment of the child and achievement at the end of a particular period of schooling would be regarded as the educational output. The inputs to the educational production process would include the teacher related inputs, school buildings and textbooks among others. A very simple approach to estimating the education production function is to regress the educational output on educational inputs and examine the significance of the coefficients of the factors of production and to relate the sizes of the coefficients to the marginal product of the factors involved (Hanushek, 1986).

Relating this to regression analysis, where the output is regressed on the inputs, and the coefficients of the inputs or the factors of production may turn out to be significant or insignificant in determining the output. With this type of statistical analysis, one may be tempted to conclude that a reduction in quantity of an insignificant input might lead to increase in output. In educational production, however, one has to be careful because educational production functions are not limited to the technical relationship between physical inputs and the physical output.

The most important distinction of the educational production function from the ordinary production function is that the most important input to the educational production function, the student, is not consumed during the production process. This input may remain untransformed or at best only some attributes of this input get transformed during the production process. The cognitive ability of the child/student can get transformed but the human being remains essentially the same at the end of the production process.

Also, the educational production function, unlike the ordinary production function has both the supply side and the demand side. The supply side provides the essentials such as the physical structures and the teacher related inputs. The parent and the child must demand the educational output and make the child available to be involved in the production process otherwise there is no output because there is no production.

Even with the same production function, the output of the education may be measured differently: in terms of enrollment (the total number of pupils or students who attend school at a particular time), school attainment (the specific grade that a child is able to reach on the educational ladder) and schooling achievement (the specific results obtained by a child at the end of a particular programme). More discussions are made on these definitions in the later chapters.

In his 1986 review of 65 regressions found in over a dozen articles, related to educational production functions, Hanushek made a startling statement, that "... there appears to be no strong or significant relationship between school expenditure and student performance". School expenditure was regarded as one of the most important inputs into educational production either at the macro-level by Government or the micro-level by the parents of the child. Hanushek's reasons for making this sort of observation stemmed from the fact that, in his review, he identified that many of the inputs to education production functions are not always significantly positive in their effects on the education output. Hanushek (1995) had the same sort of revelation out of review of some ninety-six studies from the developing

countries. He pointed out that even though the education inputs, such as teacher-pupil ratio, teacher's education, teacher's salary were supposed to have positive significant impact on the education outcome, these factors sometimes showed up with negative coefficients. He also argued that the positive coefficients were not statistically significant always. This was his main reason for maintaining that the education inputs are inefficiently used.

Many economists and academics accepted the Hanushek (1995) conclusion and believed that many of the inputs into the educational production function are really used ineffectively and inefficiently. However, voters and governments continue to ratify sizable amounts of educational budgets and spend more on education when they have more income. Considering the ineffectiveness and the inefficiency in the use of the educational inputs as is suggested by Hanushek and his school of thought, one might be tempted to conclude that expansion in spending on education constitutes waste of resources. For that matter, one might be pushed into advising that governments of developing countries, who do not have abundance of resources needed for development, that a reversal of trends of expanding budgetary allocation to education might be more prudent. On the contrary, the argument that budget differences do not necessarily account for performance differences, as far as education was concerned, makes a good case. It is possible that the expenditures were made but the process of spending was not properly supervised to make sure that all monies were used for the purpose for which they were meant. This should be seen as pointing to the fact that the incentives that determine how well the budget should be spent

could have a role to play in the ineffectiveness of the inputs. If there are no incentives to stick to specific activities in the specific quantities some volume of the expenditure, if misapplied, might not generate the desired increase in output or performance. This is more so if there are no specific guiding principles that determine how the increased expenditure should be disbursed and how the disbursement would be monitored.

Hanushek's (1995) findings from the review of such regression results were very silent on the types of models and the related assumptions on which the models were built. It is important to note that model misspecification resulting in the presence of multicollinearity could destroy the efficiency of the estimation making the coefficients statistically insignificant due to the large values of the standard errors. This study did not intend to test if the insignificance of the teacher related input were due to misspecification, though.

Pritchet and Filmer (1999) started with the Hanushek (1995) argument and tried to prove that the ineffectiveness of the educational inputs might be due to the fact that the expenditure allocation in the education sector is not based on any optimizing model. They maintained that the evidence is largely inconsistent with the assumption that resources are allocated to maximize educational output (however defined). The key indicator of the misallocation, they argued, was that the cost effectiveness, which is estimated by the achievement gain per dollar of teacher related inputs in *orders of magnitude* lower than for alternative inputs. They tried to imply that teacher related expenditures constituted overspending since such expenditure would yield

bigger results if they were shifted to other areas. The relative overspending on teacher related inputs, they indicated, is so pervasive that it is consistent only with a positive model of the allocation of education spending in which teacher welfare directly influences spending, over and above its impact on school quality (Pritchet and Filmer, 1999). The relative overspending on teacher related inputs, as being pointed out here, should not be misconstrued to imply that the importance of teacher-related inputs are being over-emphasized. It is really very easy to imagine schools without teachers and the effectiveness of such schools in producing the needed results as far as examination grades are concerned. The suggestion that teachers may be seen as defending their interest, with regard to the allocation of education spending may be regarded as methodological assumption.

The essence of this is to prove that arguments about what educational inputs produce good results is still open and that the issue of ineffectiveness of the inputs may be regarded as related to "government failure" akin to "market failure". It might only be demonstrating that the process of allocating resources might not be optimal as would be expected due to the fact that market considerations do not determine the allocation of resources in the education sector.

Another ground breaking work that accepted the Hanushek (1995) conclusion and sought to find a reasonable explanation is that seen in an article by Dewey et al.(2000). They carried out a meta-reanalysis of education production function literature in which they analyzed the sign and significance of 414 coefficients from 127 regressions. They maintained that in most cases,

the coefficients had the expected signs, suggesting that school inputs have positive impact on schooling outcome measures. They admit that in many cases the coefficients, even though having the expected positive signs, were not statistically significant. This they attributed to a problem of misspecification of the production function rather than any other effect.

In their judgment, many of the production functions reviewed had income or socioeconomic status as an explanatory variable, stemming from the belief that family factors tend to be highly correlated with the socioeconomic status of the family. Income or the socioeconomic status can, therefore, be used as proxy for any inputs that the family might provide outside of the school environment, but which might be difficult to measure. They tried to reason that in a 'Tiebout' setting, parents select school inputs through the selection of community of residence; parents demanding better schooling locate in school districts that provide better schools. Accordingly, it made no sense to include family income in an educational production function along with parental and educational inputs that are jointly determined by family income. Doing so, they argued, confounds production and demand.

Two major reasons why the misspecification argument, as expounded above may be flawed, at least in the Ghanaian context are presented here. Firstly, it must be clear that the theory of educational production function goes beyond the ordinary theory of production. The issue of educational outcome, measured by examination scores, social skills or productivity cannot be limited to the supply of school inputs without relating them to the demand for the

school inputs. School-related inputs without student related inputs generate neither examination scores nor social skills nor productivity.

It is essential to recognize that theory of educational production deals with how the supply of schooling inputs from the education providers and the demand for the schooling inputs by the beneficiaries interact to generate specific results, which one might refer to as the educational outcome. An educational production function should be seen as a "reduced form" formulation, which can be the end result of a constrained optimization problem, as will be shown later. Problems of misspecification in relation to educational production functions should not be due to the inclusion of family income (a demand variable) as an educational input.

Secondly, the issue of the Tiebout selection might not be relevant to many developing economies, and for that matter Ghana. The idea of the Tiebout sorting, as was related by Dewey et al. (2000) says that parents demanding better schools for their children locate in school districts that provide better schools. Majority of Ghanaians find themselves in where they are by virtue of the fact that they were born there. The decision to relocate in districts with better educational facilities does not hold for the majority of Ghanaians. On the other hand, enrollment in a school rarely depends on district of residence. In a few exceptional cases at the senior secondary school level, however, the new education policy for Ghana makes provision for some space to be reserved for normal residence of the school district.

However, this is not the general trend as far as school enrollment in Ghana is concerned. In some cases, the presence of primary and secondary

schools in the community is said to have a positive impact on enrollment in Western and Central Africa (Filmer, 1999). The existence of schools within the community is believed to decrease the cost and, therefore, increase the quantity demanded of schooling. It must be pointed out that the argument here does not imply an outright dismissal of the "Tiebout hypothesis". This could be investigated using longitudinal studies, which might be able to identify the inter-temporal distribution of the characteristics of residents of the various communities.

It is interesting to note that Gyimah-Brempong and Gyapong (1991) estimated the effect of dropping four socioeconomic measures – family income, parental education attainment, poverty rate and crime rate and found that the results suggest multicollinearity between income and school spending, which led to a negative coefficient when income is included and a positive coefficient when income was excluded from the regression equation. They also found that dropping parental education results in a statistically significant loss in explanatory power in all cases, while all of the other variables could be dropped with no loss if parental education is included in the regression (Dewey et al. 2002).

Although this finding tended to suggest that the inclusion of income as an explanatory variable in the educational production function might have contributed to the conclusion that, school inputs are ineffective for student achievement, one cannot jump to the conclusion that this form of model specification or misspecification is particularly a problem.

The most important identifiable problem with these studies was that the authors did not clearly indicate or try to put across the theories underlying the models that they used for the estimation of the education production functions. This fact of the absence of the underlying theoretical framework, posed a limitation on the degree to which we could debate, accept or reject the results. It is important for any studies of this nature to clearly spell out the theoretical underpinnings of the models used in order to aid interpretation and inference about the estimates.

The macroeconomic educational production functions reviewed above have pointed out that budgetary increments on education did not necessarily generate increases in educational outputs. It is important to note that the specific models used in the various studies reviewed by the authors were not indicated and the microeconomic or macroeconomic underpinnings of such models could not be debated fully in this study. However, it is possible that the insignificance of the coefficients on the one hand and the occasional wrong signs of some coefficients on the other hand could be more statistical than theoretical. According to statistical and econometric theory, the presence of non-spherical disturbances may lead to larger than normal variances which would be able the render the estimated coefficients statistically insignificant. On the other hand, misspecification due to the exclusion of a linearly dependent variable under multicollinearity could lead to biases which could give wrong signs of the estimated coefficients. One might therefore be more cautious in holistically accepting the conclusions made by the authors without clearly reviewing the models used, the underlying assumptions of such models

and the statistical problems that might have been connected with the estimations reviewed by the authors.

Review of Microeconomic Educational Production Functions

Glick and Sahn (2000), investigated the gender differences in the determinants of several schooling indicators in a poor urban environment in West Africa. Glick and Sahn (2000), who improved upon the study done by Dewey et al. (2000), modelled the schooling of the child as an outcome of the parents utility maximization problem in an overlapping-generations household utility function. Schooling of children appeared as a choice variable in the model. Reduced form equations, with the schooling indicators as the dependent variable, were estimated and used to investigate gender differences. Years of schooling model was estimated using the ordered probit, current enrollment status model estimated using binary probit while the transition in schooling model, referring to whether the child left school in the last five years, was estimated using the random effects probit method.

They discovered that growth in household income would raise private schooling investment for girls faster than for boys and concluded that policies that raise household incomes would, in general, increase gender equity in schooling, though this would also depend on whether and how these policies change relative opportunity costs of girls and boys and the relative labour market returns to female and male schooling. They also maintained that interventions targeted specifically at girls would have immediate beneficial impacts on the gender-schooling gap and such impacts would be compounded

inter-generationally since maternal schooling strongly favoured girls' education.

The study concluded that there existed a gender gap in the schooling of children, with boys normally having the upper hand. In addition, maternal education was seen to exert stronger influence over the schooling demand for the girl child than for the boy child. The study also noted that policies targeting the girl child would decrease the gender-education gap faster, even though policies that promote education in general also had the potential of filling the same gap, but at a lower pace. It is important to note that such gender differences do not pertain to only poor urban areas. The data for the study came from a household survey of Conakry, Guinea.

In developing the model that was used for the analysis, Glick and Sahn (2000), depended on wage rate of both parents to reflect the community environmental characteristics faced by the children. It is very important to note that wage alone does not reflect the opportunity cost of schooling which is very important in determining the willingness of parents to invest in the education of their children. The availability of schools in the community, the distance traveled to school, the availability of well-paying white collar jobs in the community, and possibly the presence of others who have completed higher education from the community and have obtained good jobs might be very important in motivating or de-motivating parents in their decision to invest in the education of their children. A broader definition of the environmental characteristics variable would have enriched the model formulation.

Also Glick and Sahn (2000), incompletely specified the constraint in the optimization problem. Though the objective function contained consumption in the second period, they failed to acknowledge that the second period consumption was necessary for the completion of the constraint. They however include information of the first period's consumption in the constraint. They thus failed to adequately demonstrate the solution of the optimization problem and only assumed that there was a solution.

While survey data is most effective in analyzing such micro-level determinants of schooling and for that matter the effects of parental education, income and household structure, one should not hesitate to point out the fact that Conakry, being the capital city and the largest cosmopolitan area with very weak traditional ties. Thus, Conakry might not exhibit results which are representative of the whole of Guinea. But this does not imply that the results have to be rejected outright since other studies seem to point to the existence of the gender schooling disparity phenomenon (e.g.,Filmer, 1999 and Lloyd, 1998).

Another important point of criticism of this study is the fact that only household factors were considered as explanatory variables in the model. The importance of school characteristics in determining enrollment, progression and final results obtained by the student cannot be over-emphasized. The absence of school characteristics and other environmental variables indicates a problem of misspecification due by way of the exclusion of relevant variables. This has the ability of introducing some form of bias in the coefficients. The estimated variance of the mis-specified model can be larger than that of the

true model. In addition, unless the included variables and the excluded variables are orthogonal, the effect of exclusion of relevant variables is very important in whatever inference we make with the estimates (Green 1993).

Using Demographic and Health Survey data for fifty-seven developing countries from various parts of the world, Filmer (1999) investigated ways in which gender and wealth interact in generating within country inequalities in education enrollment and attainment and assessed the partial relationships between educational outcomes and gender, wealth, household characteristics and community characteristics. The author concluded that a large female disadvantage in education is found in Western and Central Africa, North Africa, and south Asia. Secondly, gender gaps are large in almost all countries studied but while gender gaps are large in a subset of the countries studied, wealth gaps are large in almost all countries. Thirdly, the education of adults in the household has a significant impact on the enrollment of children in all countries studied and the effect of female adult education is larger than that of males in some countries. Fourthly, the presence of Primary and Secondary schools in the community has a significant effect enrollment in some countries notably in Western and Central Africa and the effect does not appear to differ systematically by gender of child. Unlike Dewey et al, (2000), the impact of family resources (wealth) is recognized by Filmer, (1999).

It is also important to note that Filmer's (1999) study is inter-country, using Demographic and Health Survey Data for the various countries. This data set does not normally include data on schools and for that matter the effect of school characteristics on the attainment is missing in this study. As

stated above, any good study of this sort must involve school characteristics, as they are very important in determining attainment and achievement. On the other hand, Filmer (1999) does not consider the importance of parental decision making as a separate and important process without which enrollment and achievement might not materialize.

Ridker (1997) presents a classic case of some systematic attempts at trying to understand what combination of policies and implementation will lead to the greatest benefits for students. The paper presents an overview of nine studies that attempt to explain educational achievement and attainment in different African countries. Four of the studies involve using statistical methods to analyze survey and other data for different countries while five rely on data derived from specific interventions. The first four of the Ridker (1997) review are presented here.

In the first study on "Enrollment in Primary Education and cognitive Achievement in Egypt: Changes and Determinants", Fergany et al (cited in Ridker 1997), using three dependent variables, initial enrollment, completion and test scores, found that most of the variation in the dependent variables were accounted for by "socio-economic and context variables" and not by school level variables (Ridker 1997). They conclude that a systematic approach at poverty alleviation and improvement in teachers' remuneration will be necessary to reverse the decline in attainment and achievements. The authors recognize the endogeneity of some of the variables and caution that even though their conclusions seem plausible, the statistical analysis by itself did not offer any strong proof. In a second study, "School Quality and

Educational outcomes in South Africa", Case and Deaton (cited in Ridker 1997) examine the effect of available measures of school quality – pupil-teacher (P/T) ratios and the presence of libraries and laboratories – on a variety of schooling outcomes, holding constant the effects of other influences such as household income (Ridker 1997). This study concluded that a reduction in the P/T ratio, would lead to an improvement in educational outcomes – a conclusion, which appears to be in sharp contrast with the often-expressed view that P/T ratios did not matter.

A third study conducted by Mason and Khandker (cited in Ridker 1997) entitled "Household Schooling Decisions in Tanzania" utilized several household and individual level surveys to investigate declining primary enrollment rates and delayed entry into primary school and low enrollment at the secondary level. Estimating the rate of return to schooling and costs of school (both direct and indirect), they concluded that low private rates of return for wage earners at both primary and secondary levels coupled with the high direct costs at the secondary level negatively affected enrollment. In addition they recognized the impact of high opportunity costs, especially for girls in lowering enrollment. They also found that of household income and household costs significantly affect enrollment and late start at the secondary level (Ridker 1997).

The fourth of the non-intervention studies reported by Ridker (1997) is "Increasing School Quantity versus Quality in Kenya: Impact on Children from Low- and High-Income Households" by Deolalikar (cited in Ridker 1997). Conclusions from this study suggest that, mother's education, which is

widely accepted as having a beneficial effect on child's schooling has a stronger effect for poor households as compared to rich households. The study also found that a decrease in the pupil-teacher ratio had a negative effect on enrollment of the poor but a positive effect on that of the rich. The negative effect here could be the result of fewer available places or price effect of increased teacher recruitment.

As has been indicated earlier, many of the studies on the determinants of educational outcomes do not clearly indicate the theoretical foundations of the models. The mere collection of variables from everywhere and implanting them into a model might yield results as far as regression is concerned. On the other hand, the interpretation of the results from such estimation would pose a bigger problem for readers. Such was the case of the Fergany et al (cited in Ridker 1997), when after their estimation, they acknowledged the fact that some of their explanatory variables were actually endogenous. A clear statement of the theoretical underpinnings of the model would have revealed, before hand, the endogeneity or otherwise of the explanatory variables. This would have helped in informing the appropriate estimation strategy to adopt.

Review of Intervention Studies

Some other studies reported in the Ridker (1997) report, involve specific interventions aimed at improving productivity in the education sector. The first of these involve a programme operated by International Christelijke Stitching (ICS), a Dutch non-governmental organization (NGO) that provided textbooks and uniforms to seven rural communities in Busia district of Kenya.

The programme aimed at improving enrollment and attendance by relaxing the constraint posed by poverty in most of such rural areas. The evaluation carried out by Kremer et al. found that the programme increased enrollment, improved attendance and reduced dropout rates drastically in the test schools as compared to the control schools (Ridker 1997). The study also revealed that there was no significant difference in the test scores between the experiment and control schools. The most intriguing finding was that test scores did rise in schools that had the least increase in enrollment. This might be due to the fact that the positive effect of increased enrollment might have been crowded out by the negative effect of an increase in the pupil-teacher ratio.

The Aga Khan Foundation's School Improvement Programme (SIP) initiated in Kisumu in Kenya, sought to improve software instead of hardware for the participating schools. It involved the improvement of teacher performance in the classroom in using child-centred teaching techniques to develop children's cognitive and problem-solving abilities. Joanne Capper evaluated the SIP. She discovered that the impact of the SIP on test scores was rather mixed, being significant in improving test scores at the 3rd grade but not at the 6th, suggesting that the short run positive effects fade with time and this might be referred to or likened to the concept of diminishing returns (Ridker (1997). Considering the cost of such teacher-software improvement one might be tempted to conclude that the SIP was not worthwhile. However the author identified some problems with the programme implementation that she felt could be blamed for the poor performance of the SIP. These include the inadequate mastery of child-centered teaching techniques by both the

teachers and their trainers, teachers being under pressure to prepare the pupils for standard national examinations, which demanded short answers in addition to frequent school closures, among others.

There are a few but very relevant lessons that we have to pick from Ridker (1997). Firstly, the various studies cited under the intervention studeies point to the fact that various approaches to the estimation of the educational production function could reveal various interesting results. However, none of these have been so comprehensive because each study considered limited factors of the educational production function. This suggests that a more comprehensive approach could be more informative. A comprehensive study of the educational production function would have, therefore to involve surveys that would seek information from the demand as well as the supply side. On the other hand, pilot studies of this sort should be planned to involve more variables than have been reported in these studies.

Secondly the studies have also shown that supply side factors can be very important as far as the educational production function is concerned. However, we must be very wary of the diminishing returns that can quickly set in. For that matter it will be important not to let the demand side inputs lag behind those of the supply side. This naturally is pointing to the fact that the demand side cannot be overlooked in any critical evaluation and estimation of the educational production function.

Concluding Remarks on the Review of Literature

What is it that has been achieved so far with the literature review? The attempt was made to show that there exists a grey area as far as the methodology for the estimation and the evaluation of the education production function is concerned. Many of the works cited in the review used national data such as the Demographic and Health Surveys and Living Standard Measurement Surveys data principally meant for other measurements, to assess the effectiveness or determinants of investment in education. Many of such data are not comprehensive enough to capture the numerous variables that are likely to affect the effectiveness if investments in education and for that matter the educational outcomes.

In a bid to disentangle the determinants of investment into the schooling of children, there is the need to use very comprehensive data from the household level and school levels in addition to what might be available at the national level. The most important work cited noted in the literature, which dwelt on educational production using primarily household level data is Glick and Sahn (2000). This particular work was quite limited in scope. Even though it used an Overlapping Generations Model in its framework, it is important to note that the import of the study was not to study the parental decision making process as it related to the investment into the schooling of children. Due to this, the specification of the model was quite incomplete as it failed to recognize the effect of the community environment as very important in the determination of the opportunity cost of schooling.

The literature review has also shown that in many of the cases cited, it is unclear whether the frameworks adopted were microeconomic or macroeconomic. In some of the studies one is at a loss as to whether the macroeconomic and microeconomic frameworks have not been confused. It must be stated that it is very necessary to explicitly state the framework being employed for ease of understanding by readers other than the author.

From the foregoing, it can be concluded that the debate on the effectiveness or otherwise of the educational production functions is not yet conclusive. This study therefore attempted to use the framework of the overlapping generations model (OGM) to formulate a model that would investigate the parental decision making process as it related to schooling of the children.

CHAPTER THREE

METHODS OF THE STUDY

Introduction

This chapter describes and discusses the development and explanations of the methods employed in the analysis. The first part is concerned with the explanation and the basic assumptions underlying the conceptual framework of the overlapping-generations model used. In the second part, the models used in the estimation of the schooling outcomes are developed as a result of an optimization problem in which the parent living, working and bearing children in the first of two periods, maximizes his or her inter-temporal utility function, with constraints imposed by his income from work which is spread over his child rearing and his retirement consumptions flows. In the latter part of the chapter the model is cast in a form that would allow for econometric estimation.

The Conceptual Framework

The basic assumptions underpinning the conceptual framework for this study are that:

1. Life is lived in three periods; the first period is lived as a child, the second as an adult who works, procreates and rears children while the third period is lived in retirement.

2. Children depend on their parents for all resources in their first (childhood) period. Parents also depend on their children's resources in the period of their retirement.

3. Adult utility maximization involves a two-period inter-temporal utility function of the form $U = U(C_t C_{t+1})$ with the concomitant constraints spanning the two periods.

4. Parents care about their consumption in the second period and for that matter care about investment in their children in the child's first period. This leads to the parental investment in the human capital development of the child and therefore the child becomes an investment good for the parent.

Parental decision-making as to the level of investment in the human capital development of the child in period t has implication for current as well as future consumption. The framework of the study is therefore what can be described as parental utility maximization in an overlapping generations model in which the decisions are based on the inter-temporal equilibrium or equilibriums.

Conceptual Issues

Educational attainment may be measured differently. In the literature, educational attainment, as a measure of human capital, is measured variously by initial enrollment, attendance at school and the duration of attendance. By initial enrollment, one would be referring to whether the child ever enrolled or not. Those who have ever enrolled are normally considered as having attained

more schooling than those who have never enrolled. Enrollment alone does dot constitute an end. While some of the enrolled are able to stay in school others drop out for various reasons. Those who attend without dropping out are thought to have higher attainment than the dropouts. Lastly, the duration of schooling is also considered an important outcome. While some end at the primary school level, others are able to end at higher levels, such as the university, spending more years in school. It is believed that longer duration of schooling indicates a higher attainment as compared to a shorter duration. In this study, therefore, educational attainment will be used variously to refer to the duration of the schooling.

On the other hand, schooling achievement is defined as the end result of the attainment. This may be reflected in the grade obtained or the social skills derived from the attainment. It is believed that higher achievement makes the individual more productive and for that matter, the achievement determines the volume of human capital developed or obtained from the school system. Since the attainment leads to achievement, both attainment and achievement can be regarded as different sides of the same coin. In this study, schooling achievement will be measured by the grades obtained by the children at the Basic Education Certificate Examinations (BECE). The author is aware that examination scores are not the only measure of school achievement and the BECE scores might not be comprehensive in telling about school achievement. Also, school achievement goes beyond the BECE level and the BECE score do not indicate the end achievement for many students, especially, those that continue beyond the basic education level.

However, the BECE results are derived from the first standardized examination available for all students at the basic level. Also parental decisions are most felt for children because most adult students are able to take their own schooling decisions after the basic level, a situation that would defeat the decision making role of the parent in the model used for the study.

Modeling Child Schooling

The model of parental or household decision making as to the investment into the education of the children follows from the "unitary" utility function or model of the household. The use of the unitary utility function implies that preferences of the father and mother are identical and/or the house acts as if it were maximizing a single utility function. Assume an overlapping-generations model (OGM) in which parents live as adults for two periods; in the first period, the parents work and look after their children while the children also work and look after their parents in the second period. The general utility function faced by the parents in period t would be

$$U = U(C_t, C_{t+1}, S_{c1}, S_{c2}, \ldots S_{cn}) \qquad (1)$$

where C_t and C_{t+1} denote household consumption in periods t and $t+1$ (or1 and 2) while S_{ci} denotes the education of the i^{th} child.

Parental consumption in the second period depends on the remittances from the children denoted by Y_{cit+1}. The children's income or wealth in the second period depends on the level and quality of schooling in their first

period, which in turn depends on parental investment in the education of the child and the child's own characteristics Z_{ci} and the environment or labour market opportunities E_{t+1}, giving

$$Y_{cit+1} = Y_{cit+1}(S_{ci}, Z_{ci}, E_{t+1}), \text{ for the } i^{th} \text{ child.}$$

The second period parental consumption is therefore given as

$$C_{t+1} = C_{t+1}(Y_{cit+1}, Z_{ci}) \qquad (2)$$

Put differently,

$$C_{t+1} = C_{t+1}(S_{c1}, Z_{ci}, E_{t+1}) \qquad (2a)$$

However, the parent's expectation of consumption in the $(t+1)^{th}$ period, formed in the t^{th} period following "adaptive expectations", will depend on the prevailing labour market opportunities in period t, instead of period $t+1$, giving,

$$E[C_{t+1}] = C_{t+1}(S_{ci}, Z_{ci}, E_t) \qquad (3a)$$

Parents are assumed to care about the wealth or income of their children in the second period due to the benefits for their own second period consumption, which predicts that greater investments in education of the children, financed through reduction in current consumption or through borrowing would result in higher income (for the children) and higher consumption (for the parents) in the second period. If however, parents regard education not only as an investment good but also as a consumption good, the schooling of the children would enter the parental utility function directly, with the same effect.

In the first period, parents work and earn income in addition to any unearned income. In the typical developing country situation, the productive contribution that children are able to make to the welfare of the household is quite valuable. Assuming therefore, that parents and children are able to work and earn some income, the full income constraint facing the parents is of the form

$$Y_t = V + T_p w_p + \sum_{i=1}^{n} T_{ci} w_c^* \qquad (4)$$

where V is unearned income of parents or the household, T_p, and w_p respectively denote the time available to the parents and parental wage rate. Similarly, T_{ci} and w_i denote the time available and wage rate, respectively for the i^{th} child (which may be referred to as the labour market opportunities available to the i^{th} child). Put differently, the full income of the patent depends on the household characteristics (H_t) and the labour market opportunities or the environmental factors (E_t). Thus,

$$Y_t = Y_t(H_t, E_t) \qquad (4a)$$

Considering the fact that parental income has to be spread between leisure and consumption in addition to child rearing, the full income constraint, assuming undeveloped capital financial and capital markets will be of the form

$$Y_t = P_{l,t} L_t + P_{ct} C_t + \sum_{i=1}^{n} P_{sci} S_{ci} \qquad (5)$$

where P_L is the price of leisure, P_c is the price of consumption goods, P_s is the cost of schooling. On the other hand, L_t is the amount of leisure enjoyed, C_t is

the volume of consumption goods consumed and S_{ti} is the time volume of schooling for the i[th] child. The utility maximization problem will then look like

$$\text{Max } U = U(C_t, C_{t+1}, S_{c1}, S_{c2}, \ldots S_{cn})$$

$$\text{Subject to } Y_t(H_t, E_t) = P_{Lt}L_t + P_{ct}C_t + \sum_{i=1}^{n} P_{sci}S_{ci}$$

The resultant Lagrangean function will be of the form;

$$L = U[C_t(Y_t), C_{t+1}(S_{ci}, Z_{ci}, E_t)] + \lambda[Y_t(H_t, E_t) - (P_{Lt}L_t + P_{ct}C_t + P_{ct+1}C_{t+1} + \sum_{i=1}^{n} P_{sci}S_{ci})] \quad (6a)$$

or,

$$L = U[C_t(H_t, E_t), C_{t+1}(S_{ci}, Z_{ci}, E_t), L_t] + \lambda[Y_t(H_t, E_t) - (P_{Lt}L_t + P_{ct}C_t + P_{ct+1}C_{t+1} + \sum_{i=1}^{n} P_{sci}S_{ci})] \quad (6b)$$

The choice variables inherent in the function are C_t, C_{t+1}, L_t, and S_{ci}. On the other hand, the predetermined variables are $H_t, Z_t, E_t, P_{Lt}, P_{ct}, P_{ct+1}$ and P_{sci}.

The solution of the constrained optimizing problem, taking partial derivatives with respect to the choice variables gives

$$L_{ct} = U'[C_t'(H_t, E_t), C_{t+1}(S_{ci}, Z_{ci}, E_t), L_t] - \lambda P_{ct} = 0 \quad (7a)$$

$$L_{ct+1} = U'[C_t(H_t, E_t), C_{t+1}'(S_{ci}, Z_{ci}, E_t), L_t] - \lambda P_{ct+1} = 0 \quad (7b)$$

$$L_{Sci} = U'[C_t(H_t, E_t), C_{t+1}'(S_{ci}', Z_{ci}, E_t), L_t] - \lambda P_{Sci} = 0 \quad (7c)$$

$$L_{Lt} = U'[C_t(H_t, E_t), C_{t+1}(S_{ci}, Z_{ci}, E_t), L_t'] - \lambda P_{Lt} = 0 \quad (7d)$$

This system contains a total of $i+3$ equations from (7a) to (7d) in the form of structural equations. These solved together would give the reduced form solutions for the $i+3$ endogenous variables. One of these reduced form solutions is

$$S_{ci} = f(H_t, Z_{ci}, E_t, P_{ct}, P_{ct+1}, P_{sci}, P_{Lt}) \quad (8)$$

The schooling of the ith child can be seen to depend on the household characteristics H_t, the characteristics of the child Z_{ci}, the community or environmental characteristics such as the labour market opportunities, which determine the opportunity cost of education E_t, and the prices for leisure and consumption as well as the price for the schooling. P_{Lt}, P_{ct}, P_{ct+1} and P_{sci}.

Parents, therefore, maximize utility subject to the full income constraint with the schooling of the child, as the choice variable (as well as for all other goods and leisure) will result in a reduced form. This reduced functional form has the potential of revealing the determinants of quantity and quality of schooling of children.

The formulation above can be very useful in investigating the determinants of parental decision on the schooling of children across countries or regions that exhibit differences in prices. It is important to note that since this particular study is not an international comparison, but rather a one-country cross-sectional study, which would imply that over the observation period, the vectors of prices did not change. These vectors, if included separately in the model for estimation will lead to multicollinearity problem. They might, therefore as well be assumed into the intercept term. The functional form of the model to be estimated is therefore,

$$S_{ci} = S_{ci}(Z_{ci}, H_i, E_i) \quad (9)$$

where, schooling of the child is being explained by the child's characteristics, the household characteristics and the environmental or community characteristics.

Below is a detailed description of the types of variables that can be used in the measurement of the various variables in the model.

A. Measures of School Attainment
   i. Initial Enrollment
   ii. Attendance
   iii. Duration of Attendance

B. Measures of Schooling Achievement
   i. Academic Achievement
   ii. Social Skills

C. Household Characteristics
   i. Household or Parental Income
   ii. Parental Education
   iii. Family Demographics

D. Child Characteristics
   i. Age
   ii. Sex
   iii. Intelligence Quotient
   iv. Previous Achievement
   v. Motivation

E. School Characteristics
   i. Physical Inputs
      a. Building and Equipment
      b. Teachers
      c. Teaching-Leaning materials, such as Textbooks
   ii. School Environment, such as Location and Transport
   iii. Enabling Conditions
      a. School Schedule
      b. Supervision
      c. Teacher Remuneration
   iv. School Support Services, such as Feeding and Health services

F. Community Environment Characteristics

i. Extent and Need for Numeracy and Literacy
ii. Percent with a given Level of Schooling
iii. Availability of Higher Education
iv. Labour Market Practices and Conditions
v. Social Beliefs and Practices
vi. Ability to Borrow

Data for the Study

The study draws on primary data from a schooling project, collected in 1999, in the Demography Unit of the University of Cape Coast, for which he was a co-investigator. This research was funded by a grant from the Population Sciences division of the Rockefeller Foundation, titled "Investments in Children: New Research Frontiers," complemented by a grant from the Futures Group, "The Implications of Excess Fertility and Unintended Births for Children's Schooling."

That study collected very detailed data on households and the schools in four communities in southern Ghana. The four communities are Abrafo-Odumase and Mankessim in the Central Region, Torkuse in the Greater Accra Region and Takoradi in the Western Region. The communities were purposively selected to reflect a variety of feature akin to the diversity in social life in southern Ghana. A description of the community environments is given in chapter four.

In each of the four communities, household interviews and school interviews were conducted. For the household interviews, eighty women were randomly selected to represent their households in each of the four communities, giving a total of 320 households. In each household, the selected female was interviewed on the behalf of her household. Detailed

information was collected on the household characteristics, involving the household composition, household facilities and possessions. In addition, a detailed schooling history was gathered for all children, both own and fostered, in the household. The schooling history involved age at first enrollment, specific schools attended at each level, progression from grade to grade, grade completed and age at that completion, benefactors of the child at each level, level of schooling thought to be adequate for the child and parental estimate about ability to look after the child to that level if the child had not yet reached the supposed adequate level.

Recall that household interviews provided information on the schools attended by the children in the household. Children who attend or attended the schools the study communities can, therefore, be linked to their respective schools. For each school in the communities involved, information was collected the characteristics of the schools available. Due to the vast number of schools in Takoradi, the schools data collection was limited to the schools in the Efiakuma estates and its environs. The data involved the qualifications and professionalism of the teachers, grade-by-grade enrollment of the pupils, grade-by-grade age range of the pupils, drop-out rates by grade, fees charged at the various levels, the contributions of and assistance given by the Parent-Teachers Associations (PTA) and the School Management Committees (SMC).

For the purposes of analyzing the achievement of the individual children, use would be made of the Basic Education Certificate Examination results. This data set is available for the study from 1990 to 1998, subject-by –

subject for each candidate. Some of the children on whose schooling history is available through the household interviews, can be traced to the West African Examinations Council (WAEC), using their index numbers and the school numbers assigned by the Examinations Council. The combination of these three sets of data is, no doubt, very comprehensive to allow for very critical analysis of the issue at stake.

Data Analysis Procedures

Regression analysis was used in the critical evaluation of the attainment and achievement variables. However, the specific regression model varied with the nature of the distribution of the dependent variables. Recall that school attainment is concerned with the grade attained by the child. The grade attained is equivalent to the years of schooling obtained by the child. This measurement makes school attainment a continuous variable and the Ordinary Least Squares estimation procedure may be used in the analysis. However, a critical look at this grade attainment indicates that for those children below the school going age or those who have not yet entered primary school were unable to measure the exact values of their school attainment. The econometric problem presented here may be described as a case of limited dependent variable. The specific situation is referred to as "left censoring".

A way of dealing with this is to eliminate all children whose values of school attainment, appears to be censored. The problems posed by this option are a reduction in the degrees of freedom after the elimination of the censored data in addition to the risk of the estimates being inconsistent. The best

method of estimation is therefore the censored regression model otherwise called the Tobit model (Greene 2000, Judge et al 1980). The general formulation of the Tobit model is of the form indicated in equation (10), with $\mathbf{x}$ being the set of explanatory variables:

$$y_t = \begin{cases} \mathbf{x}'\beta + u_t & \text{if } y_t > 0 \\ 0 & \text{otherwise} \end{cases} \qquad (10)$$

The regression function can be written as

$$E(y_t \mid \mathbf{x}, y_t > 0) = \mathbf{x}'\beta + E(u_t \mid y_t), \qquad t = 1,...,T-s \qquad (11)$$

If the conditional expectation of the disturbance term is zero, then the least squares estimation of the *T-s* available observations will provide an unbiased estimate of β. According to Judge et al (1980), if the u_t are independent and normally distributed random variables, with mean zero and variance σ^2, then

$$E(u_t \mid y_t > 0) = E(u_t \mid u_t > -\mathbf{x}'\beta) = \sigma\lambda_t \qquad (12)$$

Where, $\lambda_t = \dfrac{f(\varphi_t)}{1 - F(\varphi_t)}$, $\varphi_t = -\mathbf{x}'\beta/\sigma$

and $f(.)$ and $F(.)$ are respectively, the density and cumulative density functions of the standard normal random variable evaluated at the argument. Thus the regression function may be written as

$$E(y_t \mid \mathbf{x}, y_t > 0) = \mathbf{x}\beta + \sigma\lambda_t, \qquad t = 1,...,T-s \qquad (13)$$

Using the Ordinary Least Squares approach to estimate a model of this nature omits the second term on the right hand side and for that matter, the least squares estimator of β is both biased and inconsistent, whether used for the entire sample or the sub-sample of complete observations. The Tobit model proves to be a better option for the estimation of such censored data.

The Tobit estimation involves a two-step process. The first step of the two-step procedure involves the estimation of a probit model where the dependent variable is 1 or zero depending on whether y_t is observed or not. This provides a consistent estimator for β/σ, which is used to provide a consistent estimator of φ_t and λ_t. The consistent estimator of λ_t is then inserted into equation (3.4). The second step of the two-step procedure is the application of the OLS procedure to the resulting equation. The estimator of β from this process is asymptotically normally distributed (Judge et al, 1985).

As stated earlier, schooling achievement is measured using basic Education Certificate Examination (BECE) results obtained from the West African Examinations Council. The results indicate the subject grades and the aggregated grades for each candidate. The aggregated grades are normally used for the award of certificates for the candidates and serve as a vehicle for comparison among schools, districts and regions. The aggregated scores are used as the dependent variable for the regression analysis for the determination of schooling achievement. These scores are ordered and limited from (6) to fifty-four (54). Note that a student who does extremely well in six subjects will obtain an aggregate of six (6). On the other hand the worst aggregate that the poorest candidate can obtain from the six subjects is limited to fifty-four (54). Thus there is a limitation on the values of the dependent variable – constrained to lie between six (6) and fifty-four (54).

Using the OLS estimation approach has the potential of generating predicted values of the dependent variable beyond the limits of the observable values of the dependent variable. The estimation procedure that is capable to

constraining the predicted values of the dependent variable to the limits imposed by the observable values of the dependent variable is the ordered probit estimation. The ordered probit estimation was therefore used for the estimation of the determinants of schooling achievement. The ordered probit model is of the form

$$y^{*} = F(X\beta) = \int_{-\infty}^{X\beta} \frac{1}{\sqrt{2\pi}} e^{-t^2/2} dt \qquad (14)$$

The robust variance estimation was employed to obtain the Huber/White/Sandwich estimator of the variances and the standard errors.

Concluding Remarks:

This chapter has explained the methods to be used in the analysis of the data. From the OGM framework the functional form of the model to be used was derived in the form, $S_{ci} = S_{ci}(Z_{ci}, H_i, E_i)$. The estimation procedure used however depended on the form and nature of the dependent variable. Schooling attainment is censored and for that matter the Tobit regression proved to be the best estimation method. On the other hand the data on schooling achievement is ordered and limited. The ordered probit estimation which allows the predicted values of the dependent variables to stay within the limits of the data is used for the estimation of the determinants of schooling achievement.

CHAPTER FOUR

DEMOGRAPHIC CHARACTERISTICS OF RESPONDENTS

Introduction

This chapter seeks to explain the data sets used and methods used in refining the data for the analysis. The first aspect of this deals with the community environment of the four selected communities to give an idea about the economic environment and the opportunities that exist in each community as far as school choice and the general opportunity costs of education. It tries also to explain various data sets and how they were massaged or processed to obtain the refined variables for the final data analysis. This is done separately for the variables, which relate to school attainment and schooling achievement. The variables are described briefly while the presentation of the results is done in the ensuing chapter.

The data described here are drawn from a three-year project conducted in southern Ghana from July 1997 to June 2000, which explores the family-level linkages between fertility and children's schooling in a society that is on the brink of demographic transition. The project is the result of collaboration between the Population Council (New York) and the University of Cape Coast of which the author was an investigator. The schooling research follows a longitudinal design at the community level: an initial survey was undertaken in midd-1997 and a follow-up survey was carried out in the same communities in late 1999 and early 2000.

This report uses only the data from the second survey wave. In this wave, information was gathered from the head teachers of some 39 primary, junior secondary, and combined primary-junior secondary schools. (We will describe the Ghanaian schooling system in a moment.) Individual interviews took place with 320 women, the sample of women being divided equally across the four survey sites.

In the current Ghanaian system of schooling, primary schooling is meant to begin when a child is 6 years of age, and upon completion of six primary grades, the child should them progress to junior secondary schooling. There is no national examination at the end of primary, although children are sometimes asked to repeat primary grades if their performance or attendance has been poor. By contrast, at the end of the three-year cycle of junior secondary schooling, the Basic Education Certificate Examination (BECE) is administered on a nationwide basis. The score that a student earns on this examination, when taken in combination with an assessment of performance over the school year, is the major determining factor in the progression to senior secondary schooling.

The current form of the Ghanaian school system was put into place beginning in 1987; it replaced an earlier system in which the counterpart to junior secondary schooling was a four-year cycle of middle schooling. In the data to be described below most of the adult respondents received their schooling in the pre-reform era, whereas (although not all) of the children progressed through the system as it is currently configured.

Description of the Study Community Environments

These data, aimed at assessing the strength of demand for schooling in a range of socio-economic setting, were collected from four selected communities in the Greater Accra, Central, and Western regions, namely, Torkuse in the Greater Accra Region, Abrafo-Odumase and Mankessim in the Central Region and Takoradi in the Western Region. For the initial project these communities were purposely chosen to reflect the varied socio-economic environments, from rural farming communities to urban communities.

Abrafo-Odumase is a Denkyira agricultural community in the Central Region with two primary schools and a junior secondary school (JSS). It is the most rural of the study areas, exemplifying a socio-economic environment in which children's labour is valuable and the opportunity costs of schooling are therefore high. The Denkyira are matrilineal, and relatives other than a child's natural parents, such as a mother's brother, will often play a role in schooling decisions. In rural Ghanaian settings such as this, parental motivations for schooling remain somewhat thin, and after the primary school years the opportunity costs for parents of further schooling tend to loom high.

Mankessim, also in the Central Region, is a marketing and trading community located along the main Accra-Cape Coast road. In the past, Mankessim was mainly Fanti, also matrilineal in ethnicity, but it now contains a mix of ethnic groups owing to considerable in-migration. Here there are 5 Primary (only) schools, 3 Junior Secondary only schools and 6 combined Primary and Junior Secondary Schools. Some of the schools in Mankessim are public while others are privately owned. Mankessim also boasts of a

Secondary-Technical School, which might serve as the immediate opportunity for progression after the Junior Secondary Level. In such marketing centres like Mankessim, parents are exposed to some of the economic returns to schooling evident in the local highly heterogeneous labour market. Nevertheless, children's labour remains valuable and school officials say that on the main market days, attendance is decidedly lower, as children are taken from school to help their mothers sell their wares and run errands. Because Mankessim is a large community of at least 8,000 populations, the survey selected one well-defined neighbourhood of some 200 households containing the largest cluster of schools for study.

Torkuse, the third community is somewhat smaller community in the larger peri-urban community of Odupon-Kpehe otherwise known as Kasoa, which is an important trading centre close to Accra. Even though the greater part of Odupon-Kpehe is located in the Central Region, Torkuse as a community is located in the Greater Accra side of the larger township. The main ethnic group here is the Ewe, who are patrilineal. There are 2 Primary Schools and 2 Junior Secondary Schools in Torkuse, both of which are public. There is also a Community Senior Secondary School in this community, which might serve as a source of progression after the completion of the Junior Secondary level. The economic opportunities open to the people of Torkuse are very varied. As a fishing and farming community, Torkuse may be seen as rural with very few opportunities. However, due to the fact that the market Odupon-Kpehe boasts of two large marketing centres, at Kasoa and Ngleshie-Amanfrom, many of the residents of Torkuse are traders. The economic

incentives from trading for the parents and children of school going age can pose as a high opportunity cost for the schooling of children just as has been described for Mankessim earlier.

On the other hand, the closeness of Torkuse to Accra, complemented by the fact that many of the residents are able to find work in Accra brings in the associated incentive from the labour market opportunities that will decrease the opportunity cost of schooling. Thus in all, the influence of the closeness to Accra can serve as a better driving force for the parents and the children in Torkuse to rank schooling higher on the scale of preference as compared to people from Mankessim and Abrafo-Odumase.

At the upper end of the rural-to-urban continuum is Takoradi in the Western Region. Takoradi twins with Sekondi (forming Sekondi-Takoradi) which, is the fourth largest city in Ghana, after Accra, Kumasi and Tamale. This population is highly urban and heterogeneous, although the dominant ethnic groups are matrilineal Akan (mainly of the Fanti and Ahanta ethnic sub-groups). The city of Takoradi contains some of Ghana's best Senior Secondary Schools as well as some lesser schools that are nevertheless among the best in the region. In Takoradi, guided by our interest in the motivations of the middle class, the survey identified the Efiakuma Housing Estates as being most appropriate for the purpose. The Housing Estates are organized by the State Housing Company (formerly State Housing Corporation) and were originally built for workers who were employed in constructing the Takoradi harbour. The members of the Efiakuma community are mainly salaried workers with some representation of elites. As would be expected, Takoradi

has a great number of private and public Primary and Junior Secondary Schools, a variety of Senior Secondary Schools, Commercial, Vocational and Technical Institutes and a Polytechnic. Due to the large number of opportunities with regard to the schools, parental decision making as to the choice of school is very important in Takoradi and labour market opportunities are also very varied.

In Abrafo-Odumase, Torkuse and Mankessim, all primary and junior secondary schools were covered by he surveys of school head teachers, who provide extensive information about their schools. In Takoradi, we surveyed only those schools located in the Efiakuma estates and its immediate environs due to the fact that children from households in the Efiekuma estates go to school in this area. In total, the head teachers of some 39 schools were surveyed in the four communities. Table 1 shows the distribution of these schools by community.

Table 1: Distribution of Schools by Community

Community	Primary (only)	JSS (only)	Primary & JSS (combined)	All Schools	Percent
Abrafo-Odumase	2	1	0	3	7.7
Mankessim	5	3	6	14	35.9
Takoradi	10	5	3	18	46.1
Torkuse	2	2	0	4	10.3
Total	19	11	9	39	100.0

Source: Excess Fertility and Schooling Survey, 1998

Background of Respondents

This section attempts to give a brief description of the background of the households involved in the survey. Recall that from the four communities, 320 households were sampled randomly. A total of 80 women were sampled

randomly from 80 randomly sampled households from each community. In each of the households, one woman each was sampled randomly if there were more than one. In households where only one woman existed, such a woman was automatically selected for the sample. These women were interviewed on behalf of the family. Information was gathered on the background of the household, involving the household possessions and facilities. Further information was collected on the birth and schooling history of the children in the household, both own and fostered.

Of the 320 women interviewed, 40.31% are heads of their households, 55.00% are wives of the heads of households with the remaining 4.69% being other relations (e.g., mother, sister, daughter etc.) of the head of household. The respondents were asked about their main source of water used for laundry and dish washing. It was observed that 72.50%of the households under investigation use pipe water, 18.74% depend on well or borehole water, 6.88% use surface water with only 1.88% depending on tanker trucks. It was realized that 97.19% of the households depended on the same sources for both dishwashing and drinking water.

An attempt was made to collect information of household possessions as proxy of the wealth of households. This followed the internationally accepted procedures used in the World Bank sponsored Living Standard Measurement Survey (LSMS) techniques. The distribution of these facilities is shown in Table 2. With regard to toilet facilities, about 6% use water closet (WC), about 84% use pit, about 2% use bucket/pan and about 8% have no toilet facility (using either the bush or field otherwise called 'free range'). It

also came to light that 86.25% of the households were connected to electricity, 75.62% have radio sets which were functioning, 48.75% possess television sets which were functioning, 36.56% have refrigerators, 11.88% have bicycles, and less than 10% had motorcycle, vehicle and cart respectively.

We also observed that the floors of the living rooms are mainly made of cement. However, about 17% of them are covered with Linoleum, and 18% also covered with carpeting. In respect of the main materials of the walls of the houses, we identified about 50% of the households had used cement blocks, 24% used burnt bricks, 22% used landcrete blocks and only about 5% had used mud. About 96% of the houses have roofs with either asbestos or aluminum sheets with only 3% being of either wood planks or bamboo.

In Abrafo-Odumase, the most rural of the communities, 83.75% of the households are connected to electricity, 63.75% own a functioning radio, 35.00% own a functioning television and 11.25% own a functioning refrigerator. In Torkuse, the next rural after Abrafo-Odumase, 82.50% of the households are connected to electricity, 70% own a functioning radio, 47.50% own a functioning television and 32.50% own a functioning refrigerator. In Mankessim, the next urban community, 78.75% of the households are connected to electricity, 76.25% own a functioning radio, 47.5% own a functioning television and 33.75% own a functioning refrigerator. In Takoradi, the most urban of the four communities, all the households surveyed are connected to electricity, 92.50% own a functioning radio, 65% own a functioning television and 68.75% own a functioning refrigerator. The trend is clear form this description that using only the first four household

possessions listed even, we are able to conclude that the urban households are wealthier that the rural households. If wealth has any effect on the schooling of the child, one would expect that children in the urban communities are able to do better that the children in the rural communities.

Table 2 Household Possession of Facilities by Communities

Facilities	Abrafo-Odumase	Mankessim	Takoradi	Torkuse	Total
Electricity	83.75	78.75	100.00	82.50	86.25
Functioning Radio	63.75	76.25	92.50	70.00	75.62
Functioning Television	35.00	47.50	65.00	47.50	48.75
Functioning Refrigerator	11.25	33.75	68.75	32.50	36.56
Functioning Bicycle	6.25	12.50	10.00	18.75	11.88
Functioning Motorcycle	0.00	3.75	0.00	2.50	1.56
Functioning Vehicle	1.25	8.75	8.75	5.00	5.94
Functioning Cart	0.00	3.75	0.00	5.00	2.19

Source: Excess Fertility and Schooling Survey, 1998

The respondents are aged between 20 years and 66years. Even though female respondents between ages 25 and 55 were targeted, 3 (0.94%) respondents below the lower cut-off point were interviewed due to the decision to maintain all old respondents from the first round of interviews. For the same reason, 7 (1.56 %) old respondents who showed up to be above our 55years upper-limit were interviewed. The mean age of respondents was 38.19 years with a standard deviation of 8.38 years.

Only 23.75% of the respondents are natives of the communities in which they were interviewed. The proportions of natives varied from community to community as might have been expected. These are 7.70% in Takoradi, which is most urban, 10.00% in Mankessim, 11.25% in Torkuse and 66.25 in Abrafo-Odumase, which is the most rural of the communities. Also

81.56 % of all respondents reported having ever stayed outside their communities implying the possibility of some external factors also being influential on their current (observed) behaviors.

Table 3 Ethnicity of Respondents by Community in percentages

Ethnicity	Abrafo-Odumase	Mankessim	Takoradi	Torkuse	Total
Fante	12.50	77.50	58.75	7.50	39.06
Denkyira	78.75	2.50	0.00	0.00	20.31
Ewe	1.25	7.50	2.50	82.50	23.44
Other	8.50	12.50	38.75	10.00	17.19

Source: Excess Fertility and Schooling Survey, 1998

On the ethnicity of the respondents as shown in Table 3, it was observed that in all there were 39.06% Fanti, 23.44% Ewe, 20.32% Denkyira. Every community showed the dominant ethnic group as was expected. Abrafo-Odumase is dominated by Denkyiras (78.75%). Mankessim and Takoradi have Fantis dominating, (77.50% and 58.75% respectively), with Ewes (82.50%) dominating Torkuse. It was also realized that 39.69% of the respondents have Fante as their mother tongue, 25.94% have Twi, 23.12% mentioned Ewe, with the rest (11.25%) having other languages.

Table 4 Religious Background of Respondents by Community

Religion	Abrafo-Odumase	Mankessim	Takoradi	Torkuse	Total
Roman Catholic	41.25	10.00	15.00	33.75	25.00
Orthodox Protestant	28.75	27.50	36.25	20.00	28.12
Moslem	2.50	7.50	5.00	2.50	4.38
Syncretic	2.50	12.50	7.50	11.25	8.44
Pentecostal	21.25	36.25	35.00	22.50	28.75
Traditional	3.75	1.25	1.25	8.75	3.75
Other	0.00	5.00	0.00	1.25	1.56

Source: Excess Fertility and Schooling Survey, 1998

With regards to the religious background of the respondents, it was observed that 28.75% belong to Pentecostal churches, 28.12% belong to the Orthodox Protestant churches, 25.00% are Roman Catholics and 8.44% are Syncretic. The rest are Moslem, 4.38%, Traditional African (3.75%) and just a few Atheists (1.56%).

It is interesting to note that all the respondents (apart from 3 missing cases) have had some formal schooling before. However, the highest grade of schooling completed ranges from a year in the Primary School (P1) to the Diploma level (U2). About 35.62% of the respondents claimed they could read easily, 31.25% said they could read but with some difficulty while 33.12% indicated they could not read at all. Only 38.32% of the respondents claimed they usually read newspapers for at least once a week.

Table 5 Marital Status of Respondents by Community (in Percentages)

Marital Status	Abrafo-Odumase	Mankessim	Takoradi	Torkuse	Total
Never in Union	0.00	1.25	7.50	2.50	2.81
In Union	7.50	1.25	3.75	2.50	3.75
Currently Married	65.00	73.75	61.25	70.00	67.50
Separated	2.50	12.50	3.75	3.75	5.62
Divorced	21.25	8.75	20.00	16.25	16.56
Widowed	3.75	2.50	3.75	5.00	3.75

Source: Excess Fertility and Schooling Survey, 1998

Of the 320 respondents, 67.5% are currently married, 22.18% are either divorced or separated from their husbands, 3.75% are not married but in union while 2.81% claimed they have never been married or in union. In Mankessim, all the respondents have had at least one sexual union. It is

import age limits of the sample were fixed at a low of 25 and a high of 50. The justification of this was that respondents should have the potential of having had children who would be of school going age. In effect therefore, one is able to infer from Table 5 that respondents in the urban areas are able to delay marriage or sexual unions as compared to the rural areas. This might also be due to the existence of other sources of entertainment other than copulation on the one hand and possibly the fact that higher levels of schooling for females lead delayed marriage.

It was also observed that a total of 90 respondents constituting 39.475% have had at least a previous marriage. Of these 90 respondents, 81.11% have had at least a child in the previous marriage with the most recent husband. A total of 22 respondents have had at least two previous marriages, with 86.36% of them having had at least a child in the next most recent marriage. The study also revealed that 34 (14.91%) of the respondents have at least one co-wife.

Table 6 Mean Fertility and Child Fostering Characteristics of Respondents by Community

Fertility and Fostering Attributes	Abrafo-Odumase	Mankessim	Takoradi	Torkuse	Total
Own Children					
Children ever born alive	5.01	3.51	3.21	3.68	4.11
Children alive	3.87	3.31	3.37	3.45	3.51
Dead Children	1.27	0.38	0.25	0.47	0.60
Children age 6 or older	3.32	2.89	3.09	3.15	3.12
Foster Children					
Fathered by Husband	1.21	1.25	.080	2.04	1.34
Child Related to Husband	0.64	0.45	0.11	.034	0.39
Other Foster Children	1.89	1.75	1.38	1.70	1.75
Fertility Choice	3.34	2.93	2.82	3.55	3.17

Source: Excess Fertility and Schooling Survey, 1998

The number of children ever given birth to by the respondents ranges from zero to 13 with a mean of 4.11 and a median of four (4.0) with the number of children surviving ranging from zero to 10 with a mean of 3.51 and median of three (3.0). Of the 300 respondents who have ever given birth 93.33% have at least one child who is either age six or older. It is evident from Table 6 that child mortality is highest with an average of 1.27 in Abrafo-Odumase the most rural of the four communities and lowest of 0.25 in Takoradi, the most urban of the communities. This trend may be due to health facilities, which are normally present in the urban communities and absent in the rural areas.

The study also discovered that of the respondents who are currently married or in union, 41.59% have husbands who have fathered children from some other woman or relationship. A proportion of 75.53% of these children live away from the respondents interviewed. Another observation was that 24.76% of the respondents have children other than their own and those of their husbands living with them. This goes to confirm the notion that child fostering is prevalent in many Ghanaian communities. The number of these other foster children ranges from one to 10. Note that fostering here relates to the respondent alone, in which case own children refer to biological children of the woman but not necessarily by the current husband.

About 62.50% of the respondents indicated that trading (commerce) is their main occupation. This finding supports the fact that females are mostly engaged in trading in Ghana. While 18.75 % are engaged in agriculture and

6.56% are teachers, the rest (12.19%) are engaged in other economic activities such as dressmaking, basketry etc.

Almost all respondents (96.56%) claimed to have at least one benefactor whom they can turn to in times of emergency. More than two-thirds (69.06%) have at least two benefactors, 44.06% have at least three, and 24.38% have at least four benefactors. The issue of benefactors is important to the study due to the fact that a respondent would normally have access to some additional resources from a benefactor and this can go to enhance the respondent's ability to provide for the schooling of the child. Thus, if we assumed that two different respondents have the same level of resources at the household level, but one of them has a benefactor while the other does not have one, the implication will be that the respondent with the benefactor would have access to additional resources, which will not be available to the one without a benefactor.

Demographics of the Foster Children

A total of 154 foster children were found from the 320 households in the survey. These foster children include those fostered by the woman/couple, having no parent in the household, and the children of the current husbands who were not mothered by the respondent in question, but who were staying in the same household with our respondent. Current husbands father 22.08% of the foster children, an indication of a high level of polygamy (probably serial) on the part of the husbands. Of all the foster children, 74.68% were children of other relations of the respondent and only 3.25% of them were not to be related to the respondents. Further, 51.95% of the foster children were male

while 48.05% were female. Their ages range from six to 30. Of the total, 66.88% had ever attended kindergarten (or pre-school).

The study tried to find out about the benefactors of these foster children. In this regard it was observed that 26.62% of them had no benefactor apart from their foster mothers (respondents in question). Of the total 113 foster children who had other benefactors, 52.21% had their natural fathers being their next most important benefactors while 18.58% of them had their natural mothers as the next most important benefactors. It is interesting to note that 94.69% of the benefactors were involved in both decision-making on the child, provision of material and financial assistance to the foster child. Only 5.31% of benefactors were involved in decisions only, implying they did not provide any material or financial assistance to the child.

A total of 143 (92.86%) of the foster children had ever attended Primary School while only 10 constituting 6.49% had never attended. The most important reason assigned to non-attendance was inadequate finance for the payment of school fees (40%). Other reasons were mental disability, academic non-suitability, family business and non-approval of schooling. In Ghana, most children who are fostered are actually tasked to serve in other capacities such as house-helps or domestic labour and for that matter they might not be enrolled in school.

The study revealed that 16.09% of the foster children who attended Primary School (20.72% of valid cases) had delayed start, starting at ages ranging from seven to 10. Reasons given for the delays in starting Primary School were immaturity of child and lack of finance. Some of the foster

mothers were unable to give the specific reason for the delayed start. It was evident from the study that 29.37% of the 143 school attendants have ever repeated at least a grade in the Primary School. The most important reason assigned to grade repetition is poor academic performance on the part of the child (73.81%). This was not unexpected because most of the foster children are serving as house-helps or domestic help. However, there were other reasons such as poor school attendance by child, transfer of guardian and child being expelled from school, leading to grade repetition.

It was also observed that 31.47%, of all foster children who attended Primary School, have ever attended more than one Primary School. Transfer of guardian was cited as the most important reason for multiple school attendance at the primary level. Other reasons such as the inability to pay school fees, poor academic performance and poor school attendance, poor school quality and expulsion were also cited for some cases of multiple attendances.

The natural parents of 51.75 % of the Primary School attending foster children were involved in decisions making as to the Junior Secondary School (JSS) /Middle School attendance of their children. Also, 23.78% of these children had other benefactors such as mothers, sisters, brothers and other relations also involved in such decisions.

From the information in Table 7, it was realized that 57 foster children, constituting 39.86% of Primary School attendants progressed to the JSS or Middle School. While at the JSS/Middle School, 56.14% of them had financial and material assistance from their natural fathers. Also 24.56% of

these children had assistance from other benefactors apart from their natural fathers and foster mothers. Most of these benefactors are close relations to the children. Of the 57 JSS/Middle School attendants, only two (3.51%) repeated grades. Grade repetition at this stage was attributed to poor attendance and poor academic performance. In a similar manner only two had multiple school attendance due to transfer of guardians.

Table 7 **Foster Children Reasons for Choice of last JSS/Middle School [N=57]**

Reasons	Number	Percentage
Nearness to School	41	71.93
Good Past Results on BECE	5	8.77
Good Preparation for SSS	6	10.53
Financial Considerations	5	8.77
Lack of Alternative Choice	2	2.51
Child's Own Choice	3	5.26

Source: Excess Fertility and Schooling Survey, 1998

As can be seen from Table 7, various reasons were given for the choice of the last JSS/Middle Schools attended by these children. Nearness of school to the residence of child was the dominant reason cited, constituting 71.93%.

In Table 8, it can be seen that, of the 28 out of the 57 foster children covered, attended extra classes at the JSS/Middle School level. Of the 28 who benefited from the extra class attendance, 96.43% had tuition in both English Language and Mathematics. The least popular subject for the extra classes for these foster children was French Language with 28% attendance.

Table 8 **Foster Children JS School Extra Class Attendance by Subjects**

Subjects	Number	Percentage
General Science	25	89.29
English Language	27	96.43
Mathematics	27	96.43
Ghanaian Language	24	85.71
French Language	8	28.57
Social Studies	24	85.71
Cultural Studies	21	75.00
Life Skills	14	50.00
Vocational Skills	24	85.71
Technical Skills	24	85.71
Agricultural Science	24	85.71

Source. Excess Fertility and Schooling Survey, 1998

For the Senior Secondary School (SSS) level, it was observed that, out of the 57 children who attended JSS, 25 constituting 43.86% of the natural parents were involved in decisions about SSS attendance. Also, 24.56 of the children had other relations who were involved in such decisions. However, only 17 constituting 29.82% actually attended SSS.

Table 9 **Reasons for Choice of last SSS [N=17]**

Reasons	Number	Percentage
Nearness to School	8	47.06
Good Preparation for Tertiary Education	6	35.29
Child's Own Choice	5	29.41
Other	5	29.41

Source: Excess Fertility and Schooling Survey, 1998

The natural parents of 11 (64.71%) of them were involved in giving financial and material assistance at the SSS level. Also eight (47.06%) had other benefactors apart from their natural and foster parents who gave assistance during SSS. Only one child attended two schools at the SSS level due to transfer of guardian. The reasons for choice of last SSS attended are shown in Table 9 above.

A total of 10 (58.82%) of SSS attendants took extra classes at that level. Some of them had the extra tutoring during school term only (40.00%) while others had it both during the school term and during vacation (50.00%).

It is interesting to note that 106 of the foster children (74.13%) who had ever attended Primary School were still enrolled while 37 (25.87%) were no longer enrolled. As can be seen from Table 10, various reasons were given as to why they are no longer enrolled. The most important of these reasons was that child had completed schooling. Guardian's inability to pay fees, involvement in family business, lack of interest in schooling and involvement in domestic business were the other reasons given for reasons why the foster children were no longer enrolled.

Table 10 Reasons why foster children were no longer enrolled [N=37]

Reasons	Number	Percentage
Completed School	14	37.84
Could not Pay School Fees	8	21.62
Family Business	8	21.62
Lack of Interest	3	8.11
Domestic Responsibilities	2	5.41

Source: Excess Fertility and Schooling Survey, 1998

The study also revealed that of the 106 foster children who are currently enrolled, 48 (45.28%) attended extra classes during the immediate past academic year. On the other hand, 14 (37.84%) of those who are no longer enrolled took extra classes during their last academic year in school. The payment for extra classes for both categories of children ranges from ¢1,000 to ¢300,000 per year.

The level of schooling considered by the foster parents to be adequate for the foster child varied from JS3 to the University (Degree) level. The details are shown in Table 11 below.

Table 11 Reported level of Schooling Considered Adequate for the Child [N=154]

Levels	Number	Percentage
Junior Secondary School	48	31.17
University (Degree)	53	34.42
Senior Secondary School	31	20.13
PS3	7	4.55
Other	15	9.73

Source: Excess Fertility and Schooling Survey, 1998

Demographic Characteristics of Own Children

A total of 1221 own children were identified in the 320 households under study. Their distribution by community and sex is shown in Table 12 below. In all there were 52.42% males and 47.58% females. The proportion of males to females varied from community to community but this does not seem significantly different from the overall picture except in the case of Mankessim where the female children outnumbered the males.

Table 12 Distribution of Own Children by sex and Community [N=1221]

Sex of Child	Abrafo-Odumase	Mankessim	Takoradi	Torkuse	Total
Male	52.64	48.16	55.08	53.72	52.42
Female	47.36	51.84	44.92	46.28	47.58

Source: Excess Fertility and Schooling Survey, 1998

The study tried to find out if all children were desired at the time of their pregnancy. The main reason for this is that parents may be more

committed children born from wanted pregnancies as compared to those from unintended births. It came to light that 76.33% of them were wanted then, 21.21% were wanted later and 2.38% were not wanted at all at the time of their pregnancy implying a total of 23.59% of the children resulted from unintended births. It is interesting to note that the phenomenon of unintended births is more pronounced in Takoradi, which is highly urban and least pronounced in Abrafo-Odumase, which is most rural of the four communities. The distribution of the children in categories of intended and unintended, living or dead is shown in Table 13 below. Child mortality appears highest in Abrafo-Odumase, which is most rural and is smallest in Takoradi, which is most urban.

Table 13 Distribution Respondents' Fertility by Community

Fecundity and Child Survival	Abrafo-Odumase	Mankessim	Takoradi	Torkuse	Total
Wanted Then	88.16	86.76	49.22	74.58	76.33
Wanted Later	11.34	12.50	42.97	23.73	21.21
Not Wanted	0.50	0.74	7.81	1.69	2.38
Unintended Children	11.84	13.24	50.78	25.42	23.59
Currently Living	76.07	89.71	93.36	87.84	85.59
Already Dead	23.93	10.29	6.64	12.16	14.14

Source. Excess Fertility and Schooling Survey, 1998

For the 1014 children surviving for whose age we have adequate information, the range is from zero to 41 years with a mean of 13.66years and a standard deviation of 8.46 years. It was discovered that 74.62% of the surviving children were living in/with their mothers' household. In addition, 55.17% of these children had their natural fathers staying in their mothers' households too. It is interesting to note that current husbands fathered 59.67%

of the children, most recent husbands fathered 30.84% and earlier husbands fathered 9.48% of the children. This explains why only 55.17% of the natural fathers were living with the children and their mothers. Apart from mothers, fathers are cited as the next most important benefactors of these children. This is true in 85.35% cases. It was also stated that in 94.95% cases, the benefactors are involved in both decision-making and provision of financial and material assistance.

Schooling of Own Children

About 95.87% of the children of school going age had ever attended primary school. Various reasons were given for the 36 (4.13%) cases of non-attendance. The most important reasons include frequent sickness and academic unsuitability, on the part of the child, and inadequate finance to pay fees, on the part of the parents, (27.78% cases).

It was also discovered that 12.48% of the children had delayed start at the primary school level. The most important reason given for delayed attendance is child being too small (33.64%). The other reasons include, lack of money to pay fees (28.89%), child being too sickly (13.08%) and child being too immature intellectually (12.15%) among others.

It also became evident that 22.99% of the children who attended primary school ever repeated at least one grade at that level. A larger proportion of those involved in delayed attendance (31.78%) ever repeated at least a grade in the primary school. In 70.98% cases of grade repetition in the primary school, poor academic performance on the part of the child was

blamed. Transfer of guardian, poor school attendance and lack of interest in schooling on the part of the child were also blamed to a lesser degree. It also came to light that those children who attended more than one primary school amounted to 180 (21.00%). In 58.89 cases multiple primary school attendance was blamed on the transfer of the guardian. To a lesser degree, however, poor school quality (13.89%), poor performance of the child (8.33%), among others, was also to blame for multiple attendances at that level. Also, 28.43% of children who ever repeated a grade at the primary level were involved in the phenomenon of multiple attendances. At the primary school level, 30.61% of the children ever had extra tuition outside of school hours.

Decisions are normally made as to whether the child should attend or should not and which school the child must go to if ever. On the transition from the primary to junior secondary, such decisions might be made as to whether a child would/should or not move on and to which school. In the case of the children under study, the natural fathers of 61.68% of them were involved in such decisions. It was realized that 18.46% of the children had other people involved in such decisions about their junior secondary schooling. [Note that other benefactors getting involved in such did not preclude natural fathers from such decisions.]

Junior secondary school attendance in itself constituted 434 (50.70%) of those who had ever attended primary school. At the junior secondary level for this group, 66.13% of them had their natural fathers giving them assistance, while only 17.11% of them had other people giving them assistance. Only 9.87% of junior secondary school attendants ever repeated a grade at that level.

Grade repetition was mainly attributed to poor performance on the part of the child (71.11% cases). About 23 (5.04%) of the junior secondary school attendants attended more than one junior secondary school. Multiple attendances in this case were also attributed to transfer of guardian (65.22% cases).

From Table 14 below, nearness of school to residence was acknowledged as the most important factor influencing choice of the junior secondary school (68.13% cases). To a lesser degree, however, good past results on BECE from a particular school, good preparation for senior secondary school, financial considerations, lack of alternative choice and child's own decision have also been mentioned as contributing factors. It is very interesting that these other reasons are cited as being very important in Takoradi. They thus appear to be urban rather than rural considerations as far as junior secondary school choice is concerned.

Table 14 Reasons for Choice of JSS/Middle School by Community

Reason	Abrafo-Odumase	Mankessim	Takoradi	Torkuse	Total
Nearness to Residence	81.20	62.11	62.73	77.08	71.43
Good Past BECE results	1.50	13.68	40.91	6.25	15.21
Good SSS Preparation	5.26	9.47	59.09	0.00	18.66
Financial Considerations	0.75	0.00	83.64	4.17	22.35
Lack of Alternatives	5.26	3.16	14.55	8.33	7.83
Child's Own Choice	4.51	12.63	7.27	6.25	7.37

Source: Excess Fertility and Schooling Survey, 1998

At the junior secondary school level, 201 (44.18%) of attendants took extra classes outside of school hours. It can be seen from Table 15 below that those who attended extra classes patronized almost all the subjects. French

appears to be the most unpopular because some of the junior secondary schools are unable to teach French probably due to lack of French teachers.

Table 15 Junior Secondary School Extra Class Attendance by Subjects

Subject	Number	Percentage
General Science	177	88.06
English Language	194	96.52
Mathematics	193	96.02
Ghanaian Language	150	74.63
French Language	93	48.27
Social Studies	159	79.10
Cultural Studies	139	69.15
Life Skills	118	58.71
Vocational Skills	146	72.64
Technical Skills	152	75.62
Agricultural Science	152	75.621

Source: Excess Fertility and Schooling Survey, 1998

In relation to senior secondary attendance, non-attendance and where to attend, the natural fathers of 51.87% of the junior secondary school attendants were involved in decision making. Only 16.23% of them had other people involved in such decisions. The actual number of senior secondary School attendants out of the junior secondary attendants is relatively low at 136 (29.89%). For this group, the natural fathers of 62.50% gave financial and material assistance at that level. Only 21.32% of them had assistance from people other than their parents. Uncles showed up as the greatest proportion of benefactors in this category. Some few cases of multiple school attendance at the senior secondary level have been recorded. In six cases (4.41%) out of a total of 136, the child attended more than one school. Poor quality of school was the main factor blamed for this phenomenon of multiple school attendance at the senior secondary school level.

Table 16 Reasons for Choice of Senior Secondary School by Community

Reasons	Abrafo-Odumase	Mankessim	Takoradi	Torkuse	Total
Nearness to Residence	31.43	39.47	43.90	18.18	35.29
Good Past SSCE Results	8.57	5.26	26.83	13.64	13.97
Good Tertiary Preparation	8.57	10.53	43.90	0.00	18.38
Preparation for Occupation	22.86	7.89	19.51	13.64	16.18
Child's BECE Results	0.00	13.16	58.54	0.00	21.32
Financial Considerations	8.57	5.26	53.66	4.55	20.59
Child's Own Choice	17.14	44.74	29.27	45.45	33.09

Source: Excess Fertility and Schooling Survey, 1998

Nearness of the senior secondary school to residence appeared to be the most important factor influencing the choice of school to attend. Many other factors appeared quite influential in this choice. These include child's own decision and choice, financial considerations as can be seen in Table 16.

The study also revealed that 65.44% of Senior Secondary attendants ever took extra classes outside of school hours. As would be expected the extra classes tended to be mainly during the school term. All students who were involved in the extra classes had them during the term. However, 44.94% had extra classes during vacation in addition.

It came to light that only 60.24% the children who ever attended Primary School are currently enrolled at any level. The age at leaving school ranges from 7 years to 25 years with a mean of 15.92 years and a mode and median of 16 years [for the children with known school leaving ages]. From Table 17 below, we observe that for those who are not currently enrolled, school completion proves to be the dominant reason taking 41.09%. This is followed by inability to pay fees 26.36%, lack of interest (22.36%); poor academic performance (11.18%) and pregnancy/child support (3.36%). It is interesting to note that school completion, shows up as the strongest factor in

both Abrafo-Odumase and Takoradi while inability to pay fees shows up strongest in Mankessim and Torkuse.

Table 17 Reasons for Leaving School by Community [N=331]

Reasons	Abrafo-Odumase	Mankessim	Takoradi	Torkuse	Total
Completed School	49.06	20.00	70.13	20.43	41.09
Could Not Pay Fees	15.09	52.73	7.79	38.71	26.28
Poor Performance	10.38	7.27	23.38	4.30	11.18
Lack of Interest	14.15	9.09	5.97	36.56	22.36
Pregnancy/Child Support	5.66	1.82	0.00	5.38	3.63

Source: Excess Fertility and Schooling Survey, 1998

During the course of the immediate past academic year, 52.58% of children currently enrolled took extra classes. It was also revealed that 90.98% of the extra class attendants attended extra classes organized by their schools. For the 218 valid cases, fees paid for the extra classes ranged from nothing to ¢856000 with a mean of ¢76500 and a median of ¢36000 for the academic year. On the other hand, 31.72% of those who were no longer enrolled took extra classes in the last year of their enrollment. It was also stated that 102 (97.14%) of this group had extra classes, which were organized by their schools. With only 58 valid cases, fee payment in this case ranged from ¢5,000.00 to ¢365,000.00, with a mean of ¢77,577.59 and a median of ¢36,000.

The study also tried to ascertain from the parents the level of education, which they felt would be adequate for the child. The results shown in Table 18 above show that this perceived adequate level varied from Primary class two through to the post graduate level with the median at the diploma level.

Table 18 Level of Schooling Considered Adequate for Own Child [N=952]

Adequate level of Schooling	Number	Percentage
Primary	15	1.58
Junior Secondary/Middle School	158	16.60
Senior Secondary	224	23.53
Post Secondary	32	3.36
Vocational/Technical/Commercial	26	2.73
Polytechnic	17	1.79
Diploma	65	6.85
First Degree (and above)	415	43.59
Total	952	100.00

Source: Excess Fertility and Schooling Survey, 1998

The parents interviewed indicated that, for those children who had not yet reached the adequate levels, they would be able to look after 71.62% while admitting that they would not be able to look after 25.06% to be able to attain such level.

Concluding Remarks

In this chapter the demographic characteristics of the respondents and their children were presented. It is evident that many of the children of school going age were enrolled. Even majority of the foster children in these households were enrolled. The levels of attendance were varied for both parents and their children. The varied nature of attendance would allow for good estimation results.

CHAPTER FIVE

DATA AND DATA PROCESSING FOR THE ANALYSES

Introduction

This chapter describes the measurement of the variables used in the analysis of both the determinants of school attainment and schooling achievement. In situations where the data used had to be processed before being used in the regression analysis, the methods used for the processing are described. The essence of this chapter, therefore, is to help the readers appreciate how the data or variables were measured and how they were processed.

Data Processing for Measuring Determinants of School Attainment

Recall from our model in the previous chapter that the explanatory variables included household or parental characteristics, child's own characteristics and community or environmental characteristics. These are captured as follows:

i. The household characteristics included household size, household possessions or resources, marital status of the mother, the educational attainment of the parents, the relationship of child to current husband of the women (whether the current husband of the mother of the child is the father of the child) and the residential status of the father of the child.

ii. The child's own characteristics involved the sex of the child, the age and the residential status of the child; whether the child is resident in the mother's household or not.

iii. The community characteristics are the used for the environmental factors.

Measurement of the Household Characteristic Variables

Household size: The survey asked for information of the total number of children born alive by the respondent. It further asked for the number of children who were alive, whether staying with the respondent or not. In addition, information was sought on the number of children fathered from another marriage by the husband, who were staying with the respondent as fostered children. The last category of persons in the household for which information was sought was fostered children who were neither children of the respondent nor children of the husband of the respondent. By these categories therefore, the household size was measured by the total number of children in the household plus the two (2), if the husband of the respondent was also staying in the same household. Otherwise, the household size was taken to be equal to the number of children plus one (1).

Household Possessions: Information was sought on the possession of household items. The full listing included the house being connected to electricity, possession of a functioning radio, television, refrigerator and a bicycle. The others are a functioning motorcycle, a motor vehicle, a tractor and a horse cart or a pull cart. The information on the possession of these

items is a way of proxying for the wealth or income of the household. Following the convention used in the Living Standard Measurement Surveys (LSMS), the items possessed were counted and the totals used in ranking the wealth level of the respondents' households.

Marital Status of the Respondent: The survey sought information on the marital status of the respondents. The most important reason being that husbands serve as very important benefactors of the respondents especially in relation to payment of school fees and the provision of other economic needs of the household. Thus, women who are married or attached to men may have additional economic facilities, which may enhance their ability to provide for the schooling of the children under their care. Though the survey used six different categories for the marital status ranging from Never Married (Not in Union) to Widowed, these were refined into a dummy variable which assigned one (1) to those currently married or in union and zero (0) to those who were not in any union currently.

School Attainment of the Respondent and the Husband (if any): Recall that the study basically aims at finding the determinants of school attainment and schooling achievement and recall also that school attainment relates to the level or grade of schooling. The school levels in the current Ghanaian education system may be categorized as the primary, junior secondary, secondary and tertiary as is done in the LSMS and other international surveys.

On the other hand, schooling grades relate to the various classes in the educational system, which may be converted to years of schooling completed. In the household interview, data was collected on the grade completion of both parents and the children. Grade completion actually is the equivalence of years of schooling completed. However, the data for grade completion did not come straight due to a few problems with period of coverage and the recall level of the respondents. For elder children who had completed schooling long ago, some parents were unable to provide the exact grade completed. In a similar manner, the information was incomplete for many of the children who have been fostered out of their households. For all such cases, no imputations were made for such children.

The bigger part of the problem had to do with the pre-education-reform and the post-education reform eras. Most of the parents had their education in the pre-reform era while majority of the children were in the post-reform era. Some few of the parents also went to school in the reform era while some of the children also completed their grades in the pre-reform era. For all such cases, there was the need to get a particular principle that would be adequate in converting the grades of schooling in the pre-reform and the post reform era into years of schooling to enable comparison. The procedure adopted for this conversion is outlined below.

The translation of grade of schooling completed into years of schooling completed for Ghana is quite a complex issue. Due to the fact that the education reform of 1987 reduced the number years of pre-University schooling from 17 years to only 12 years, one is almost at a loss as to the years

schooling to impute when dealing with a combined group of students from both the pre-reform and post-reform periods. The issue is complicated by the fact that during both periods, there were some programs, which could be regarded as out-of-main-stream pre-University schooling. Examples of these are the Vocational, Technical and Commercial schools (dubbed VT?), Teacher Training Colleges (dubbed T?) the Post-Secondary Teacher Training Colleges (dubbed PS?), the Polytechnics Institutes (dubbed PT?) and the Specialist Training Colleges (dubbed ST?).

However, armed with the fact that students from outside the main stream pre-University schooling are able to find their way, at various levels and times, into the main stream, there is some encouragement to attempt the imputation of years of schooling to the grades of schooling completed. Table 19 has been postulated for the imputation of years of schooling. Starting from the mainstream pre-University system of the pre-1987 education reform era, there is an attempt to find comparable placement for the out-of-main-stream programs and the programs of the post-1987 reform era.

The Primary school (P1 – P6) is the basic level of schooling involving six years. This was followed by four years in the Middle School (M1 – M4), making a total of 10 years of schooling. With the 1987 reform, the Junior Secondary School, comprising three years, replaced the Middle School. The three years are acknowledged making the end of the Junior Secondary School equivalent to nine years of schooling. In the pre-1987 era, the Secondary School involved five years (S1 – S5), ending with 15 years of schooling. The Vocational, Technical and Commercial Schools (VT?) in addition to the

Training Colleges (T?) involved four years, starting after M4 and ending at a level a little lower than S5. Fourteen (14) years of schooling have thus been imputed for VT4 and T4. The Senior Secondary School, in the post-reform era, though covering three years, starts at a level equivalent to S1 and ends at a level equivalent to S5, both of the pre-reform era. In the pre-1987 era, there was a two-year advanced level program (A1 & A2) preceding the University. These made pre-University schooling cover a total of 17 years.

Table 19: Table for converting Schooling Grades into Schooling Years

Grade (Years) Completed	Years of Schooling
P1	1
P2	2
P3	3
P4	4
P5	5
P6	6
M1, JS1	7
M2, JS2	8
M3, JS3	9
M4	10
S1, VT1, T1. SS1	11
S2, VT2, T2, SS2	12
S3, VT3, T3, SS3	13
S4, VT4, T4	14
S5	15
A1, PS1, PT1,	16
PS2, PT2	16.5
A2, PS3, PT3	17
U1, ST1	18
ST2	18.5
U2, ST3	19
U3	20
U4	21
U5	22
U6	23

The Post-Secondary Teacher Training, a three-year programme, started after the S5 at PS1 and ended with PS3, an equivalent of A2 (below the

University level). The Polytechnic program also took three years just like that Post-secondary Teacher Training Colleges starting with PT1 and ending with PT3 equivalent to A2 and PS3.

The University took two years for the diploma programme (U1 & U2) and three years for the first-degree program, end at U3. The Specialist Training Colleges started after the Post-Secondary Teacher Training College with ST1, taking three years to finish with ST3, an equivalent of a Diploma, which is U2. With our postulation here, the University degree, whether in the pre-1987 or post-1987 reform eras, works to an equivalent of 20 years of schooling. With this we have our dependent variable for the regression analysis on the determinants of school attainment.

In the analysis of the determinants of school attainment of the children, as is explained below, it was more interesting to use the grades or years of schooling completed. Thus, the grade conversion table (Table 19) was used in converting the grade completion of the parents to the years of schooling completed.

The last two of the household characteristic variables are the relationship of the child to the current husband of the respondent, if any, and the residential status of the father of the child. Recall that we are tracing this child from the mother to the father. It is postulated that if the current husband of the respondent is the father of the child, the likelihood that the husband will be willing to support the provision of the educational needs of the child will be greater. On the other hand, it was postulated that if the current husband of the child is in the woman's household with the child, the father might be more

committed to providing for the child. This is likely to affect the child's schooling positively. Dummies were used to measure both variables. If the father of the child is the current husband of the respondent, we allocate one (1) and zero (otherwise). Related to the residential status of the father of the child, one (1) was allocated if the father of the child was resident in the respondent's household and zero (0) otherwise.

Measurement of Child Characteristic Variables

Three variables were used in alienating the characteristics of the child namely, sex of the child, age of the child and the residential status of the child. The sex of the child as a characteristic tries to distinguish between the male child and the girl child. It is believed that male children are preferred when it comes to schooling. This is informed by the larger school enrollment of boys and the larger dropout rate of the girls (GSS 2000). Thus a dummy variable is used to capture the sex of the child, with one (1) allocated when the child is a boy and zero (0) otherwise.

In the birth and education history of each child the survey asked for the respondents to provide information on the age of the child. This was obtained by asking "How old was the child at his/her last birthday?" Even though the survey asked for information on the date of birth of the child the information obtained on the age of the child at the last birthday, which indicated the age in competed years proves better. By virtue of the fact that schooling progression is yearly, one would normally expect that older children would have higher schooling attainment than the younger ones.

On the residential status of the child, the survey asked if the child was currently living in the household of the respondent. A dummy variable was used to capture the residential status of the child by assigning one (1) if the child was living in the mother's household and zero (0) otherwise. The assumption here is that children who are resident with their parents can be more monitored by their parents in terms of school attendance and this will go to improve the grade attainment of the child in the final analysis. Also it is known that children who are fostered out of the household may be serving as domestic helps rather attending school, another reason to suppose that children who are resident with their parents may have higher schooling attainment.

Measurement of the Community Environmental Characteristics: Recall that the four communities involved in this survey, were purposefully chosen to reflect some specific characteristics. As earlier mentioned under the description of the communities, Abrafo-Odumase is the most rural community with agriculture as the most dominant economic activity. It has one primary school and one junior secondary school. Thus economic opportunities are most limited in Abrafo-Odumase and thus the opportunity cost of schooling is very high. On the other hand, Takoradi happens to be the most urban of the communities. Here, there are many schools and economic activities due to the fact that Sekondi-Takoradi is a regional capital in addition to the presence of the Takoradi habour. Due to these differences in the community environments, it is possible to argue that each of these communities had its peculiar environment. For this reason, dummies were constructed for the different communities. Taking cognizance of the fact that if all four-

community dummies appear as explanatory variables and the intercept is allowed to stay then we will be creating a problem of multicollinearity, Abrafo-Odumase was taken to be the reference community. Thus, it will be expected that the other three communities will be more assertive in the probabilities with which their environments influence schooling attainment positively.

The dependent variable for the determination of school attainment is the school attainment of the child. The survey asked for detailed schooling history of the children. Information obtained in this section included the highest level of schooling competed by the child. This is converted into the years of schooling completed by the child and this serves as the dependent variable in the first case. Also, information was obtained on the highest level of schooling that the parents' thought would be adequate for the children. This is a way of assessing the parents' subjective valuation of the direct and opportunity costs of schooling as well as some valuation of the potential benefits of schooling. Some of the respondents were able to give responses for this and for that matter one would be able to do a second analysis to be able to compare what the 'potential' or desired education attainment is as compared with the actual educational attainment. The potential or desired level of education was also converted into years of desired schooling using Table 19 described earlier.

Data Processing for Determinants of Schooling Achievement

The processing of data for the estimation of schooling achievement follows the approach used for the school attainment variables as was described earlier in section 5.2. Due to this earlier discussion only variables not previously mentioned are discussed in this section.

Measurement of Household Characteristics

The measurement of the household characteristics for the estimation of the determinants of schooling achievement followed the procedure described earlier in section 5.2.1 for the estimation of the determinants of school attainment. The only additional variable which is discussed in this section is the benefactors of the child. The survey asked if the direct father of the child assisted the child at the junior secondary school level in the form the provision of resources. The reasoning behind this is that the father's direct financial assistance to the child will have a positive implication for the necessity of the having to look for additional resources if the mother is unable to totally provide for the child. The same reasoning goes for the child having other benefactors, apart from the father and mother, who assist in the provision of resources for the child's education. Both variables are measured in the form of dummy variables.

The schooling of parents is the final variable under the household characteristics variable. It was considered that the level of schooling would adequately capture the schooling characteristics of both the mother and the

current husband of the child. The ordering of the levels of schooling is shown in Table 20.

Table 20: Table for Ordering of Level of Schooling

Schooling Level	Ranking
No Schooling	0
Primary	1
Junior Secondary/Middle	2
Secondary/Vocational/Technical	3
Post Secondary/Polytechnic/University	4

Measurement of Child Characteristics

Related to the measurement of the child characteristic variables, it is important to know that the information provided by the respondent was unable to provide the age at which the child wrote the examination. Another age variables that was deemed important and has been used in the literature is the age at which the started schooling. The reasoning for this is that the intelligent quotient (IQ) is able to improve with age in a way that children who entered primary one at an older age may be able to comprehend lessons better if the IQ is higher. On the other hand, it has also been observed in the literature that many children are not able to enter primary one at the age of six because they were not mentally prepared for academic work at that age. Such children may find it difficult to progress from grade to grade. The survey collected information on the age at which the child entered primary one. This is introduced into the model as a child characteristic that may determine the end result of schooling.

Another important variable that relate to schooling achievement is the grade repetition. It is known that weak students are sometimes asked to repeat

grades to improve performance before progressing. Such weak students are not likely to perform exceptionally well in their final examination. The survey collected information on the grade repetition both at the primary and junior secondary levels. Dummies were constructed for both to enter the right hand side variables. The survey also collected information on the number of schools attended during the primary schooling level and also at the junior secondary level. Since these are numeric they were accepted without any alteration to enter as explanatory variables into the model for determining schooling achievement. It is important to note that the BECE may be regarded as both terminal and selectional. It is terminal for those who may not progress any higher on the educational ladder and it is selectional for those who want to progress into the senior secondary, vocational and technical institutions. Due to its selectional nature, many children have had to demand supplemental tuition either privately at home or in school. It is believed such private tutoring is able to help the children either complete the school syllabi or improve their understanding of the materials taught and for that matter is reflected in better grades. The survey collected information on child's participation of extra classes at the junior secondary level. A dummy variable was created for participation in extra classes at the junior secondary level to serve as an explanatory variable.

Measurement of Community Characteristics

The community environmental characteristics were catered for by introducing community dummies, with Abrafo-Odumase, which is the most rural of the four communities, serving as the reference community. The

community characteristics are set in the same way, as was done the determination of school attainment.

Concluding Remarks

This section concludes the description of the processes used in the massage of the variable for the regression analysis for both the determinants of school attainment and schooling achievement. In the next chapter the analysis are presented and the results discussed.

CHAPTER SIX

DETERMINANTS OF SCHOOL ATTAINMENT

Introduction

In the previous chapter, an attempt was made to show the raw data that were used for the analysis. In addition, the processes used to make the data usable for the analysis are explained. This chapter presents the analysis of the determinants of school attainment and the discussion of the results. The processing of data generated information on 995 children. This implies that of the 1021 children who were alive to the respondents interviewed, the mothers of 995 of the children were able to provide adequate information relevant for the analysis. It is important to note that all children with missing information for at least one of the variables was dropped from the analysis automatically by the application programme employed.

Refined Data for Determining School Attainment

Table 21 presents the indicative variables (a summary of the refined data) which were used for the analysis of determinants of school attainment. It indicates that 51.76% of the children covered are males while 48.24% are females. All the communities have more male children than female children except for Mankessim. No specific reason is given to account for this phenomenon. On the issue of the domicile of the children, the information reveals that on the average, 76.48% of the children are resident in their mother's household. The lowest percentage of 64.66% is observed in Abrafo-

Odumase while the highest percentage is indicated for Takoradi. The high rate of divorce noticed for Abrafo-Odumase might be accountable for this in that the children might be resident in their father's household, in which case they will be absent from their mother's household when the parents are separated. Observe that about 76% of the children have mothers who were currently married.

Table 21: Community Prevalence of Indicative Variables (in Percentages)

Variables	Abrafo-Odumase	Mankessim	Takoradi	Torkuse	Total
Child is Male	51.24	47.66	54.94	53.28	51.76
Child Staying in the Household	64.66	82.55	85.41	75.82	76.48
Mother of Child Currently Married	73.85	79.15	72.53	78.69	75.98
Father of Child is Current Husband	52.30	71.49	62.66	57.79	60.60
Child's Father in the Household	51.59	65.53	59.23	52.05	56.78
Mean Household Size	5.62	5.09	5.33	5.44	5.38
Mean Household Possessions	2.05	2.56	3.57	2.68	2.68
Mean Education of Mother of Child	6.32	7.90	8.48	5.68	7.04
Mean Education Current Husband	6.81	9.43	9.02	6.98	7.9
Mean Age of Child	14.61	11.82	14.19	13.50	13.58
Mean Education of Children in Years	5.31	4.70	5.92	4.58	5.13

Source: Excess Fertility and Schooling Survey, 1998

The breakdown for the communities shows that the percentages are lowest percentages in Abrafo-Odumase and Takoradi. This is confirmed by the information in Table 5, which indicates that 21.25% and 20.00% divorce

cases for Abrafo-Odumase and Takoradi respectively. Another confirmation related to this phenomenon is indicative of the fact that in Abrafo-Odumase, only 52.30% of the children have their fathers being the current husbands of their mothers while the proportion is as high as 71.49 in Mankessim with the average for the four communities being 60.60%. Also only 51.59% of the children in Abrafo-Odumase have their fathers staying in their mother's household as compared to the average of 56.78% for the four communities.

In all cases, the parental indicative variables show highest percentages for Mankessim with the lowest being found in Abrafo-Odumase. One would have expected a clear-cut trend in the child-rearing pattern according to the characteristics of the communities, from the most rural to the most urbanized. While being cautions in the explanation of the phenomenon, one is tempted to believe that poverty and the absence of resources could be responsible for the phenomenon in Abrafo-Odumase, with the women leaving the husbands who are not able to provide their needs. In the case of Takoradi however, the phenomenon may be explained by the fact that labour may be more mobile in which case the distance may be to blame for the high rate of divorce and the pattern of child-rearing.

The information in Table 21 indicates that the average household size (for the households in which these children lived ranged from five (5) persons in Mankessim to a high of about six (6) persons in Abrafo-Odumase. This information indicates that the households appear to be larger in the rural communities as compared to the urbanized areas and supports the literature on household-size distribution in Ghana. The respondents were asked in the

survey to indicate whether the possessed certain common household items. Out of eight items on which the questions were asked, the mean household possession for the households in which these children lived ranged from 2.05 for Abrafo-Odumase to the high of 3.57 for Takoradi. As has been indicated earlier, the household possessions are indicative of the wealth of these households. By implication therefore, the poorest households show up in the most rural community while the richest households show up in the most urban of the communities as was expected.

From the same Table 21, it can be observed that the lowest average number of years of schooling of the mothers has been reported to be 5.68 years for Torkuse with the highest being 8.48 years in Takoradi. For the current husbands of the mothers of these children, the highest average number of years of schooling of 9.02 years was reported for Takoradi while the lowest of 6.81 years was reported at Abrafo-Odumase. In all four communities, the husbands appear to have had more schooling than the wives. This distribution supports the national distribution of the levels of school attainment by sex for Ghana (GLSS, 2000). From Table 21, the average age of children across the four communities is 13.58 while the number of years of schooling averaged 5.13 years. Using the differences in the average ages and average school attainment, the information suggests that the children in the rural communities start school at an average age of about 9 years while the children in the Mankessim and Takoradi start school at 7 and 8 years respectively.

Tobit Regression of the Determinants of Schooling Attainment

The following is the result of the Tobit regression of the explanatory variables on the level of school attainment. Recall that the dependent variable, school attainment, is left censored. This is the reason why the Tobit regression was resorted to for the estimation of the determinants of school attainment. The variables are categorized into the household characteristics, the child Characteristics and the community characteristics. The model used for the estimation is

$$y = X\beta + u$$

or $$y = \beta_0 + X_1\beta_1 + X_2\beta_2 + X_3\beta_3 + u$$

where y is the vector of the dependent variable (school attainment or achievement

X_1 is the matrix of the household characteristics,

X_2 is the matrix of the child's own characteristics,

X_3 is the matrix of the community environmental characteristics

School attainment is measured by grade attainment and is equivalent to the years of schooling obtained by the child. This measurement makes school attainment a continuous variable and the Ordinary Least Squares estimation procedure may be used in the analysis. However, a critical look at this grade attainment indicates that for those children below the school going age or those who have not yet entered primary school one is unable to measure the exact values of their school attainment. The econometric problem presented by this phenomenon may be described as a case of limited dependent variable. The specific situation is referred to as "left censoring".

One way of dealing with this is to eliminate all children whose values of school attainment, appears to be censored. The problems posed by this option are a reduction in the reduced degrees of freedom after the elimination of the censored data in addition to the fact that the estimates might be inconsistent. The best method of estimation is therefore the censored regression model otherwise called the Tobit model (Greene 2000, Judge et al 1980). The general formulation of the Tobit model is of the form, with $\mathbf{x}$ being the set of explanatory variables is

$$y_t = \begin{cases} \mathbf{x}'\beta + u_t & \text{if} \quad y_t > 0 \\ 0 & \text{otherwise} \end{cases}$$

(3.1)

The regression function can be written as

$$E(y_t \mid \mathbf{x},\ y_t > 0) = \mathbf{x}'\beta + E(u_t \mid y_t), \qquad t = 1,\ldots,T-s$$

(3.2)

If the conditional expectation of the disturbance term is zero, then the least squares estimation of the *T-s* available observations will provide an unbiased estimate of β. According to Judge et al (1980), if the u_t are independent and normally distributed random variables, with mean zero and variance σ^2, then

$$E(u_t \mid y_t > 0) = E(u_t \mid u_t > -\mathbf{x}'\beta) = \sigma\lambda_t$$

(3.3)

where $\lambda_t = \dfrac{f(\varphi_t)}{1 - F(\varphi_t)}$, $\varphi_t = -\mathbf{x}'\beta/\sigma$

and $f(.)$ and $F(.)$ are respectively, the density and cumulative density functions of the standard normal random variable evaluated at the argument. Thus, the regression function may be written as

$$E(y_t \mid \mathbf{x},\ y_t > 0) = \mathbf{x}'\boldsymbol{\beta} + \sigma\lambda_t, \qquad t = 1,...,T-s$$

(3.4)

Using the Least Squares approach to estimate a model of this nature omits the second term on the right hand side and for that matter, the least squares estimator of β is both biased and inconsistent, whether used for the entire sample or the sub-sample of complete observations. The Tobit model proves to be a better option for the estimation of such censored data. The Tobit estimation involves a two-state process. The first step of the two-step procedure involves the estimation of a probit model of where the dependent variable is 1 or zero depending on whether y_t is observed or not. This provides a consistent estimator for β/σ, which is used to provide a consistent estimator of φ_t and λ_t. The consistent estimator of λ_t is then inserted into equation 3.4 and the second step of the two-step procedure is application of the least squares procedure to the resulting equation. The estimator of β from this process is asymptotically normally distributed (Judge et-al, 1985).

In the least squares estimation the marginal effect of the explanatory variables can be obtained just by differentiating the regression equation with respect to the various variables. This marginal effect would be given by and is equal to the coefficient estimates. In the tobit regression however, the computation of the marginal effect of an explanatory variables comes

differently. The marginal effect in the case of the tobit regression is given by the following illustration:

Let $y = a$ and $y = b$ be points at which the dependent variable is censored. If the latent regression would be given by

$$y^* = \mathbf{x}'\beta + u$$

and the observed dependent variable $y = a$ if $y^* \leq a$, $y = b$ if $y \geq b$ and $y = y^*$ other wise, where a and b are constants, and $f(u)$ and $F(u)$ are the density and cumulative density functions of u which is assumed to be continuous with mean 0 and variance σ^2 and $f(u \mid \mathbf{x}) = f(u)$ then the marginal effect is given by

$$\frac{\partial E[y \mid \mathbf{x}]}{\partial \mathbf{x}} = \beta \times \Pr ob[a < y^* < b].$$

Thus, the marginal effect in the case of the tobit regression is a product of the coefficients and the probabilities.

For the estimation of the determinants of schooling attainment, the household characteristic variables include;

i. The count of the household resources,

ii. The size of the household

iii. The marital status of the respondent/ the mother of the child,

iv. The school attainment of the mother of the child,

v. The school attainment of the current husband of the mother of the child,

vi. The relationship between the current husband of the respondent and the child,

vii. The residential status of the father of the child.

The child's own characteristics include;

i. The age of the child,

ii. The sex of the child, and

iii. The residential status of the child.

Dummies, representing the different communities, measured the community environmental characteristics. Abrafo-Odumase, the most rural of the communities is chosen to be the reference community.

A Priori Expectations for the Determinants of School Attainment

All household characteristics variable in this estimation would be expected to have positive impact on school attainment except for the household size which is expected to have a negative influence. In addition it would be expected that all child characteristic variables have positive impact on school attainment. Specifically, it would be expected that older children would be able to attain higher than the younger children, all things being equal. Also it is expected that boys would be able to attain higher than girls due to the fact that the literature has it that most parents preferred to invest in the schooling of the boy child as compared to the girl child. Lastly it would be expected that children who reside in their parents households would be able to attain higher than children who are fostered out of their parents' households.

Tobit Regression Results for School Attainment

Table 22 presents the results obtained from the Tobit regression of school attainment of the explanatory variables mentioned earlier. The coefficients, t-ratios and probabilities are indicated in the Table 22.

Table 22: Tobit Regression: Dependent Variable is School Attainment

Variables	Coefficient	t-ratio	p>|t|	Signifi-cance
Household Characteristics				
Household Resources	0.3183	4.10	0.001	***
Household Size	-0.0210	-0.33	0.741	
Marital Status of Mother	0.0920	0.23	0.820	
Education of Mother	0.1078	4.83	0.001	***
Education of Current Husband	0.0013	0.05	0.957	
Current Husband is Father of Child	-0.3971	-0.70	0.487	
Father of Child in the Household	0.4145	0.79	0.432	
Child Characteristics				
Current Age of the Child	0.5683	37.66	0.001	***
Sex of Child (Male Dummy)	-0.0468	-0.24	0.812	
Child Staying in the Household	0.3285	1.22	0.224	
Community Characteristics				
Torkuse Dummy	-0.2690	-0.96	0.336	
Mankessim Dummy	0.5783	2.03	0.043	**
Takoradi Dummy	0.3675	1.22	0.221	
Constant	-5.2032	-9.78	0.001	***
Residual Statistics				
LR- $\chi^2(13)$	1221.93			
Prob > Chi-Squared	0.0000			
Pseudo R-Squared	0.2320			
Total No. of Observations.	995			
No. of Left-Censored Observations	235			

* significant at 0.05 level ** significant at 0.01 level *** significant at 0.001 level

From the results in Table 22, it is observed that among the household characteristics used for the regression analysis, the level or volume of household possessions or resources and mothers education are the only two variables which are significant in explaining the school attainment. They are both significant at 1 percent level and they both bear the positive sign. This implies that an increase in the household resources available to the child or an

increase in the mother's education may both lead to higher schooling attainment. Put differently, children who live in richer households are able to attain higher grades of schooling as compared to children from poorer households. Also, children whose mothers have higher educational attainment are also more likely to have higher educational attainment.

Talking about the child characteristic variables, we note that the age of the child is the only variable out the three used, which is significant and is significant at the 1 percent level. This result indicates that older children have higher educational attainment as compared to younger children. This could not have been any truer than is indicated. Schooling progression is annual and one would normally expect that older children have higher educational attainment.

Of the community environmental variables, only the dummy for Mankessim is significant and this is at the 5 percent level. However a closer look at the community dummy variables indicates that the coefficient for Torkuse is negative while that of Mankessim and Takoradi are positive. Recall that the reference community is Abrafo-Odumase, which is the most rural of the four communities. By implication therefore, one would not be wrong to say that educational attainment is higher in the urban communities as compared to the rural communities. This confirms our suspicion that due to the higher opportunity cost of schooling in the rural areas, school attainment would be higher in the urban areas as compared to the rural areas.

Apart from the coefficients, an attempt was made to estimate the marginal effects of the explanatory variables. The results of the marginal

effects are presented in Table 23. Recall that in the case of the ordinary least squares, the marginal effects are the same as the coefficients. In the case of many other estimation approaches, the marginal effects are distinct from the coefficient estimates.

Table 23: Marginal Effects after Tobit Regression: Dependent Variable is School Attainment

Variables	dy/dx	z-ratio	p>|z|	Significance
Predicted y=4.4722				
Household Characteristics				
Household Resources	0.31826	4.10	0.000	***
Household Size	-0.02096	-0.33	0.741	
Marital Status of Mother	0.09198	0.23	0.820	
Education of Mother	0.10776	4.83	0.000	***
Education of Current Husband	0.00129	0.05	0.957	
Current Husband is Father of Child	-0.39715	-0.70	0.487	
Father of Child in the Household	0.41449	0.79	0.432	
Child Characteristics				
Current Age of the Child	0.56826	37.66	0.000	***
Sex of Child (Male Dummy)	-0.04677	-0.24	0.812	
Child Staying in the Household	0.32847	1.22	0.224	
Community Characteristics				
Torkuse Dummy	-0.26898	-0.96	0.336	
Mankessim Dummy	0.52385	2.03	0.042	**
Takoradi Dummy	0.36754	1.22	0.221	

* significant at 0.05 level ** significant at 0.01 level *** significant at 0.001 level

The marginal effects are significant for the corresponding coefficients, which are significant and also at the same level as shown earlier in Table 22. The household characteristics, which show significance, are household resources and mother's education. The age of the child and the Dummy for Mankessim are the other variables, which are significant. The meaning of the results in Table 23 is therefore as follows;

i. The marginal effect of 0.31826 for household resource effect means that if the child's household should have one additional household resource then that additional resource has the potential of increasing the level of school attainment by a third of a year on the average. From Table 23 we observe that the predicted y, (the mean level of school attainment is 4.4722 years of schooling. Thus the marginal effect of the household resources would imply, as it were, that a one unit increase in the availability of household resources would have about a third of a year incremental effect on the level of schooling attainment.

ii. Similarly, the marginal effect of the education of the child is 0.10776 years of schooling. The meaning is that on the average, if the mother of the child were to have had an extra year of schooling, the effect of that extra year of schooling obtained by the mother would have led to a 10% extra year of schooling of the child.

iii. The age of the child is significant at the 1% level with a marginal effect of 0.56826 of a year. This implies that all other things being equal, a one-year change in the age of a child has the potential to add about half a year more to the schooling attainment of the child.

iv. The last significant variable is the community environment for Mankessim captured by the Mankessim dummy. The interpretation of this is that if two children (one each from Abrafo-Odumase and Mankessim) were being compared, one would observe that the Mankessim environment is more favourable for schooling. Thus a

child schooling in Mankessim has a 0.52385 chance of progressing as compared to a child schooling in Abrafo-Odumase.

Looking at the values of the marginal effects in the Table 23, one realizes that the age of the child has the biggest marginal effect. The policy implication of this is that if one is interested in the single most important variable that is able to push a child through to the next class, then that variable is the age of the child. Thus a one-year change in the age of the child, has more push power in increasing the school attainment of the child than any other variable.

OLS Regression Results for Desired Level of Schooling

Considering the fact that many of the children mention by the respondents were below the school going age of six and therefore, have never entered school, the study also attempted to find out from the respondents the highest level of schooling that might be adequate for the child to be able to look after himself/herself in the future. The idea is to find out the level of potential investment that the parents consider enough to make this child self sufficient in the future. Such potential investment declaration has the ability to inform us about the parent's valuation of the opportunity cost of education for the child as compared to the marginal benefit of education. If the marginal benefit of schooling for the child is ranked higher than the opportunity cost of schooling, the parent is able to wish a very high level of education for the

child. The results for the least squares analysis of the desired school attainment for the children are shown in Table 24.

Table 24: OLS Regression: Dependent Variable is Desired School Attainment

Variables	Coefficient	t-ratio	p>|t|	Signifi-cance
Household Characteristics				
Household Resources	0.3664	3.95	0.000	***
Household Size	-0.3657	-4.83	0.000	***
Marital Status of Mother	-0.4584	-0.93	0.351	
Education of Mother	0.0666	2.47	0.014	**
Education of Current Husband	0.0720	2.45	0.014	
Current Husband is Father of Child	-0.4932	-0.74	0.462	
Father of Child in the Household	0.9090	1.49	0.136	
Child Characteristics				
Current Age of the Child	-0.0563	-3.21	0.001	***
Sex of Child (Male Dummy)	0.5565	2.36	0.018	*
Child Staying in the Household	-0.4154	-1.29	0.199	
Community Characteristics				
Torkuse Dummy	0.5758	1.69	0.091	*
Mankessim Dummy	4.9099	14.23	0.000	***
Takoradi Dummy	2.9839	8.18	0.000	***
Constant	14.9169	23.77	0.000	***
F (13, 897)	41.12			
Prob > F	0.0000			
R-Squared	0.3734			
Adjusted R-Squared	0.3643			
Total No. of Observations.	911			
Root Mean Square Error	3.5308			

* significant at 0.05 level ** significant at 0.01 level *** significant at 0.001 level

From the information in Table 24, it is evident that more of the explanatory variables are significant in explaining the desired schooling attainment as compared to the actual levels of attainment. The household characteristic variables, which are significant at the 0.1%, are the household resources and household size. The educational attainment of the mother of the

child is also significant at the 1% level. Household size has the expected negative sign and is significant at the 0.1% implying parents with large households have very high opportunity cost for schooling of the children. The household would benefit more if the children who should be in school are engaged in other activities such as would be able to support the household. Alternatively, these parents might be better off is these children from the large households end schooling earlier so that the little resources available could be shared for all to have some of the schooling cake.

On the child's own characteristics, we observe that the age of the child is the most significant (0.1%) in explaining the level of schooling desired by the parents. The negative relationship between age of the child and the level of schooling desired by the parents would imply that parents' perception about the importance of schooling could be changing in a way that the younger children are perceived to have lower opportunity cost of schooling leading to higher net benefits from schooling. It is also interesting to note that the sex of the child is significant at the 5% level. Recall that the sex variable is a male dummy in which case the positive relationship would imply that higher levels of school attainment are desired for the male child as compared to the female child. By implication, the old Ghanaian tradition of preference for the boy child is indicative of this result.

The picture shown by the community characteristics is very clear as is expected. The urban areas show more significance than the rural areas. This simply implies that the environmental factor is very important in determining the parent's perception about the cost and the net benefits of schooling.

When parents observe that there are numerous opportunities for the child in the job market and for that matter the benefits of schooling would be high, the parent would definitely desire a very high level of attainment for the child. In the rural areas, where the only job market opportunity may be farming, the opportunity cost of schooling might be perceived to be very high as compared to the benefits from schooling. This may not entice parents to send their children to school, but rather use then as labour on their farms. This is detrimental to government efforts attaining the goals of universal basic education in Ghana.

Concluding Remarks

This chapter presented the result on the determination of school attainment of the child. It was complemented by the desired level of schooling. It was observed that the there was a variation in the a greater number of variables were at lay in the determination of desired schooling than were for realized school attainment.

These results are discussed into more details in chapter eight. The next chapter presents the results of the determination of schooling achievement measured by the results obtained by the identified children at the BECE examinations.

CHAPTER SEVEN

DETERMINANTS OF SCHOOLING ACHIEVEMENT

Introduction

This chapter presents the analysis and discussion of the results related to the determinants of schooling achievement. Recall that the respondents were asked to give a detailed birth and schooling history of their children. Also the end grades of the Basic Education Certificate Examinations (BECE) were obtained from the West African Examinations Council (WAEC). The Examination results obtained by the children in the BECE are used here as achievement at the end of the junior secondary schooling process. Ordered Probit regression was used for the analysis of the determinants of schooling achievement. The selection of this method was influenced by the distribution of the dependent variable. This aggregate grades of the students are ordered from 6 as the best to 54 as the weakest.

Refined Data for the Estimation of Schooling Achievement

The results obtained from the West African Examinations Council span 1990 to 1998. Recall that the education reform was started in 1987 and for that matter the first batch of the BECE graduates completed in 1998. Also, the survey was carried out in 1998 and this was influential in determining the end point of 1998 for the results. This was because children who would not have completed the BECE by 1998 would not have grades at that time; the main reason why they were not targeted for this analysis.

It is evident, as can be seen from Table 25 that a total of 12 junior secondary schools were covered in this analysis. The distribution of the schools shows only one each for Abrafo-Odumase and Torkuse and five schools each were covered for Mankessim and Takoradi. Between 1990 and 1998, these 12 schools presented 6681 candidates at the BECE. The year-to-year distribution of candidates for each of the schools can be seen in Table 25. The distribution shows that the numbers of students presented at the BECE was not very stable over the period. It is not clear what factors might have contributed to this trend of rise and fall in the numbers presented.

Table 25: JSS3 Population of the Selected Schools by years

School	90	91	92	93	94	95	96	97	98
Abrafo-Odumase RC JSS	32	34	33	35	33	33	45	24	40
D/A JSS "A", Mankessim	33	40	50	54	76	87	72	69	57
D/A JSS "B&C", Mankessim	43	84	103	85	117	95	97	74	48
Edumadze JSS, Mankessim	72	96	108	114	115	103	104	101	78
D/A JSS, Bafikrom	35	35	32	52	44	48	44	52	45
Methodist JSS, Mankessim	-	-	-	-	-	-	-	32	66
Rev. Cobbah-Yalley, Takoradi	31	54	61	55	60	62	48	60	73
Rev. Grant JSS, Takoradi	87	79	75	58	68	63	64	68	62
Rev. Clelland JSS, Takoradi	-	-	-	58	50	49	43	45	52
Nana Brempong JSS, Takoradi	29	58	75	84	100	119	106	99	94
Dunwell Methodist JSS, Takoradi	71	92	103	95	107	110	91	92	104
Torkuse JSS	54	52	83	78	81	85	92	91	99
Total	487	624	723	768	851	854	806	807	761
Grand Total	6681								

Source: West African Examinations Council

In Abrafo-Odumase, the highest number of candidates presented was 45 in 1996 with the lowest of 24 in the following year, 1997. District Assembly (D/A) Junior Secondary 'A' in Mankessim had candidates ranging from a low of 33 in 1990 to a high of 87 in 1995. In the same Mankessim, the D/A JSS 'B&C' presented a range with a low of 43 in 1990 and a high of 117 in 1994. The Reverend Cobbah-Yalley JSS in Takoradi presented the lowest number of candidates of 31 in 1990 and a high of 73 in 1998. In Reverend Clelland JSS in Takoradi, the range of candidates is from a low of 29 in 1990 and a high of 119 in 1995. The case of Torkuse however, seemed a little different with an increasing trend, though not very smooth. The presentation from Torkuse JSS rose from 54 in 1990 to a high of 99 in 1998.

From the interviews conducted in the survey and the birth and schooling-histories provided by the respondents, a total of 1221 children were identified in the four communities. The distribution, as can be seen from Table 26 shows that 32.51% of the children were reported for the 80 respondents form Abrafo-Odumase, 22.28% reported in Mankessim, 20.97% reported for Takoradi while 24.24% was reported for Torkuse.

Table 26: Distribution of Respondents' Children by Community

Community	No. of Children	Percentage
Abrafo-Odumase	397	32.51
Mankessim	272	22.28
Takoradi	256	20.97
Torkuse	296	24.24
Total	1221	100.00

Source: Excess Fertility and Schooling Survey, 1998

Using the official names, the ages, the dates of birth provided by the parents and the schools attended by the children, a total of 61 children were identified in the listing of the candidates who were presented at the BECE examination for the nine-year period. The distribution of the 61 children by community is shown in Table 26.

Table 27: JSS Leavers Identified by Community

Community	No. JSS Leavers identified	Percentage
Abrafo-Odumase	17	27.87
Mankessim	18	29.51
Takoradi	17	27.87
Torkuse	9	14.75
Total	**61**	**100.00**

Source: Excess Fertility and Schooling Survey, 1998 and WAEC Results

The meaning of these results in Table 27 is that out of 397 children mentioned by the 80 respondents from Abrafo-Odumase, 17 of them were identified from the listing of the 6681 candidates reported in the WAEC listing. Similarly, 9 children out of the 296 reported by the respondents were identified from the listing of the 6681 candidates who sat the BECE over the nine-year period.

The distribution of the aggregated grades from the best six subjects for the candidates is shown in Table 28. Note that, the Examinations Council computed these aggregates, and are what is used for the certification of the candidates. The least aggregate of 6 was reported in Takoradi while the highest aggregate of 41 was reported in Abrafo-Odumase. The distribution of the aggregated grades by community is shown in Table 23. It is note worthy that in Takoradi, the most urban of the four communities, the range of the

grades is from aggregate 6 to aggregate 29. In Mankessim, the aggregates ranged from 13 t0 36. In Torkuse, the range is from 21 to 35, while in Abrafo-Odumase, the most rural of the four communities, the aggregates range from 28 to 41.

Table 28: Distribution of WAEC Results (Aggregates of Best six subjects)

Aggregates	Abrafo-Odumase	Mankessim	Takoradi	Torkuse
6			1	
7				
8				
9				
10				
11			1	
12				
13		1		
14			2	
15		1		
16				
17		1	1	
18			1	
19		1		
20		4	2	1
21			3	2
22				2
23		2	1	
24		1		
25				
26		1	1	
27			2	
28	2	1		
29	1	1	2	1
30	2			
31				
32		1		
33	2			2
34	4	1		
35	1	1		1
36	1	1		
37	1			
38	1			
39				
40	1			
41	1			
Total	17	18	17	9

Source: WAEC Results

This distribution of the aggregates is indicative of the fact that better grades and for that matter higher achievements are recorded in the urban environment. Thus one may be tempted to conclude that schooling achievement has some environmental deterministic characteristics.

Table 29: Community Prevalence of Indicative Variables (in Percentages)

Variables	Abrafo-Odumase	Manke-ssim	Takoradi	Torkuse
	n=17	n=18	n=17	n=9
Mother of Child Currently Married	64.71	77.78	64.71	66.67
Father of Child is Current Husband	41.18	77.78	64.71	44.44
Child is Male	23.53	38.89	52.94	44.44
Child Staying in the Household	47.06	72.22	100.00	88.89
Father of Child Staying in Household	41.18	66.67	64.71	44.44
Father Supported Child in JSS	58.82	66.67	88.24	44.44
Other person supported Child in JSS	17.65	5.56	100.00	11.11
Child Attended Extra Classes in JSS	64.71	38.89	41.18	88.89
Child Repeated a Primary Class	17.65	16.67	0.00	22.22
Child Repeated a JSS Class	11.76	11.11	0.00	11.11
Children Attending 1 Primary School	88.24	55.56	100.00	44.44
Children Attending 2 Primary Schools	11.76	38.88	0.00	44.44
Children Attending 3 Primary Schools	0.00	5.56	0.00	11.11
Children Attending 1 JS School	94.12	88.89	100.00	88.89
Children Attending 2 JS School	5.88	11.11	0.00	11.11
Mean Household Possessions	2.41	2.61	4.76	2.56
Mean Education of Mother of Child	1.58	2.16	1.94	1.11
Mean Education Current Husband	1.54	2.29	2.18	1.36
Mean Age of Child at Entry	5.76	5.50	6.05	6.11

Source: Excess Fertility and Schooling Survey, 1998

The community prevalence of the indicative variables for the 61 children identified is shown in Table 29. The information indicates that over 60 percent of the mothers of the children were currently married with the highest proportion of 77.78% in Mankessim and the lowest of 64.71% in both

Takoradi and Abrafo-Odumase. As low as 41% of the children had their fathers, being the current husbands of their mothers in Abrafo-Odumase. The proportion was 77.78% in Takoradi. This is a confirmation of the fact that divorce cases abound more in the rural areas as compared to the urban areas. Another important feature of the households captured is that more children stay in their mothers' households in the urban areas than in the rural areas. The low of 47% is recorded for Abrafo-Odumase, the most rural of the communities with the high of a 100% is recorded in Takoradi. Two different reasons may account for this feature namely, the high divorce rate in the rural areas as well as the high rate of child fostering in these areas.

Another striking feature that shows up in Table 29 is the issue of multiple-schools attendance. In Takoradi, all the children captured in this section attended only one primary school and one junior secondary school. On the other hand, many of the students from the other communities have attended more than one primary school and more than one junior secondary school. Also important is that grade repetition does not feature in Takoradi, the most urban of the four communities however, some students from the other three communities repeated grades in both the primary and the junior secondary levels.

Looking at the information on the mean of common household possessions, we realize that the lowest average of 2.41 out of 8 in Abrafo-Odumase, an average of 2.56 in Torkuse, 2.61 in Mankessim and a high of 4.76 in Takoradi. This trend clearly indicates that households in the urban

areas were wealthier than the rural households. This trend is not unexpected and conforms to what is indicative for Ghana in the GLSS4 of 2000.

Ordered Probit Estimation of the Determinants of Schooling Achievement

As stated earlier, schooling achievement is measured using basic Education Certificate Examination (BECE) results obtained from the West African Examinations Council has the subject grades and the aggregated grades for each candidate. The aggregated grades are normally for the award of certificates for the candidates and serves as a vehicle for comparison among schools, districts etc. The aggregated scores are used as the dependent variable for the regression analysis for the determination of schooling achievement. These scores are ordered and limited from (6) to fifty-four (54). Note that a student who does extremely well in six subjects will obtain an aggregate of six (6). On the other hand the worst aggregate that the poorest candidate can obtain from the six subjects is limited to fifty-four (54). Thus there is a limitation on the values of the dependent variable – constrained to lie between six (6) and fifty-four (54).

Using the Ordinary Least Squares estimation approach has the potential of generating predicted values of the dependent variable beyond the limits of the observable values of the dependent variable. The estimation procedure that is capable of constraining the predicted values of the dependent variable to the limits imposed by the observable values of the dependent variable is the ordered probit estimation. The ordered probit estimation was therefore used for the estimation of the determinants of schooling achievement. The ordered

probit model is built around a latent regression in the manner of the binomial probit model of the form

$$y^* = f(x, \beta)$$

Note, in this particular case, that y^* is unobserved. Our observations are

$y = 0$ if $y^* \leq 0$

$= 1$ if $0 < y^* \leq a$

$= 2$ if $a < y^* \leq b$

$= 3$ if $b < y^* \leq c$

.

.

.

$=$ J-1 if $i < y^* \leq k$

$=$ J if $y^* \geq k$,

Where $0 < a < b < c < .... < k$

and

$$y^* = f(X\beta) = \int_{-\infty}^{X\beta} \frac{1}{\sqrt{2\pi}} e^{-t^2/2} dt$$

where

$X\beta = X_1\beta_1 + X_2\beta_2 + X_3\beta_3$, and

y^* is the vector of the unobserved probabilities of school achievement at the various cut-off points.

X_1 is the matrix of the household characteristics,

X_2 is the matrix of the child's own characteristics,

X_3 is the matrix of the community environmental characteristics

It is important to note that the marginal effects of the ordered probit model are not simply the coefficients as is the case for the least squares estimation. The computation of the marginal effects from the ordered probit model follows from the computation of the probabilities just as in the case of the tobit model discussed earlier. Assume that the disturbance term u is normally distributed across observations then

$$\Pr ob(y = 0) = \Phi(-x'\beta)$$

$$\Pr ob(y = 1) = \Phi(a - x'\beta) - \Phi(-x'\beta)$$

$$\Pr ob(y = 2) = \Phi(b - x'\beta) - \Phi(a - x'\beta)$$

$$\vdots$$

$$\Pr ob(y = k) = \Phi(J - x'\beta) - \Phi[(J-1) - x'\beta)$$

The marginal effects from these probabilities would be given as

$$\frac{\partial \Pr ob[y = 0]}{\partial x} = -\phi(x'\beta)\beta$$

$$\frac{\partial \Pr ob[y = 1]}{\partial x} = [\phi(-x'\beta) - \phi(a - x'\beta)\beta$$

$$\frac{\partial \Pr ob[y = 2]}{\partial x} = [\phi(b - x'\beta) - \phi(a - x'\beta)\beta$$

$$\vdots$$

$$\frac{\partial \Pr ob[y = k]}{\partial x} = [\phi(J - x'\beta) - \phi\{(J-1) - x'\beta)\}]\beta$$

The specific variables used in the estimation of the determinants of schooling achievement are defined below.

The household characteristics include:

i. The count of the household resources,

ii. The household size,

iii. Marital status of the mother of the child,

iv. The schooling of the mother of the child,

v. The schooling of the father of the chill,

vi. The relationship of the child to the current husband of the respondent,

vii. The residential status of the father of the child,

viii. Fathers assistance to the child at the Junior Secondary level

ix. The existence of other benefactors of the child apart from the parents.

The child's owned characteristics variables include:

i. The child's entry age measured by the age at which the child entered primary school for the first time,

ii. The sex of the child,

iii. The residential status of the child,

iv. The child's progression in primary school measured by whether the child ever repeated a grade at the primary level,

v. The child's progression at the junior secondary school measured by whether the child ever repeated a grade at the junior secondary level,

vi. The number of primary school attended at the primary level,

vii. The number of schools attended at the junior secondary level, and

viii. The child's participation in extra classes or obtaining extra tuition at the junior secondary level.

The community environmental characteristics are measured using dummies for the communities. Abrafo-Odumase, the most rural of the four communities is the reference community.

A priori Expectation of the Results

All the household characteristics are expected to have a positive impact on schooling achievement except for household size. All things being equal, the bigger the household, the smaller the amount of money available for each individual child's educational investment. Therefore, it would be expected that larger households would lead to lower schooling achievement. On the other hand, the educational attainment of both parents, the marital status of the mother of the child, father of the child being the current father of the child, father of the child being present in the household, father of the child having assisted the child financially at the JSS and the child having other benefactors apart from the parent should all go to impact positively on the schooling achievement of child.

Some of the child characteristic variables are expected to have positive effect on the child's schooling achievement while others are expected to have mixed effects. On the positive side are sex of the child (male children are expected to achieve higher that the female children), the residential status of the child measured by whether the child is resident in the mother household or not and attendance at extra classes during the JSS period are expected to have positive impact on schooling achievement. On the other hand, age at entry into Primary School, grade repetition at both Primary and JSS levels and the number of different Primary Schools and JSS's attended would be expected to either positive or negative effect due to some particular circumstances. For example, a good child who is moved from a relatively poor school to a relatively better school would be expected to do achieve higher than a poor child who has to move from a relatively good school to a relatively poor school, probably because the child was unable to cope with tuition in the relatively better school.

The community characteristics variable are expected to have a positive impact on schooling achievement as we move from the rural to the urban communities. This is because the opportunity cost of schooling tends to be higher in the rural as compared to the urban communities.

Ordered Probit Regression Results

The results of the least squares regression of the schooling achievement on the household characteristics, the child characteristics and the community environmental characteristics is shown in Table 30. Two household

characteristic variables are significant in explaining school attainment. Both are related to the father of the child. The current husband of the mother being the father of the child happens to be significant at 1% with the correct positive sign. On the other hand, the father of the child being resident in the mother's household has shown up to be significant at the 5% level but with a negative sign. The implication of this is that children whose fathers are not resident with their mothers tended to achieve higher than those with both parents resident together.

Table 30: Ordered Probit Regression: Dependent Variable: Schooling Achievement (JSS Results)

Variables	Coefficient	z-ratio	P>|t|	Signifi-cance
Household Characteristics				
Household Resources	0.1257	0.68	0.497	
Household Size	0.1251	1.09	0.275	
Marital Status of Mother	0.5814	0.67	0.502	
Education of Mother	0.1848	1.02	0.310	
Education of Current Husband	0.2206	1.35	0.178	
Current Husband is Father of Child	-3.2798	-4.07	0.001	***
Father of Child in the Household	2.6404	2.37	0.018	**
Father Assisted Child In JSS	-0.2849	-0.44	0.659	
Child has other Benefactor at JSS	0.9016	1.44	0.149	
Child Characteristics				
Age at Entry into Primary School	0.0882	0.300	0.763	
Sex of Child (Male Dummy)	-0.5679	-1.76	0.078	*
Child Staying in Household	0.5394	1.41	0,159	
Child Repeated a Class in Primary	1.4613	3.15	0.002	***
Child Repeated a Class in JSS	0.2216	0.43	0.670	
No. of Primary Schools Attended	-0.0478	-0.16	0.870	
No. of JS Schools Attended	-1.9813	-3.46	0.001	***
Child had Extra Classes at JSS	-0.3951	-1.06	0.228	
Community Characteristics				
Torkuse Dummy	-1.6823	-3.39	0.001	***
Mankessim Dummy	-1.7780	-3.66	0.001	***
Takoradi Dummy	-3.0980	-4.55	0.001	***

* significant at 0.05 level ** significant at 0.01 level *** significant at 0.001 level

Of the child characteristic variables, three are significant at the five percent level with two of the three being significant at the 1% level. Sex of the child is significant at the 5% level implying that boys tended to achieve higher than girl children. On the other hand grade repetition at the primary school level is significant at the 1% level with a negative effect on achievement. The implication of this is that children who repeat primary grades do not tend to do well in the BECE examinations. Also, the number of junior secondary schools attended is significant at the 1% level with a positive sign. This would imply that children who have attended more than one junior secondary school tended to achieve more than those who attended only one junior secondary school.

All three community characteristic dummies (variables) are significant at the 1% level and with a positive sign. It is interesting to note that the magnitude of the coefficients increase as one move from the rural to the urban communities. This would imply that schooling achievement is higher in the urban communities (environmment) as compared to the rural environment as was expected.

Concluding Remarks

This chapter presented the results of the determination of schooling achievement, measured by grades obtained at the BECE by the identified children. It was observed that the community environment was very positively significant in the determination of schooling achievement in addition to the child being male and the child's parents not being divorced. The father of the child living in the same household with the mother proved to be significant but with the wrong negative effect of schooling achievement.

The next chapter discusses the results in to more details. A comparison of the results for attainment and achievement is also presented in the next chapeter.

CHAPTER EIGHT

DISCUSSION OF RESULTS

Introduction

The two previous chapters presented the results from the estimations of the determinants of school attainment and schooling achievement. School attainment was estimated using the Tobit regression due to censoring of the data while schooling achievement was estimated using the Ordered Probit regression. In the current chapter, a discussion of the results is presented in relation to the literature and related issues.

Discussion of Results on Determinants of School Attainment

School attainment was looked at from two angles; the actual level of schooling grade completed by the children and the schooling parent's desire measured by the grade that the parents' feel would be adequate for the child. The explanatory variables have been classified into three following from the literature: household characteristics, child characteristics and the community environmental characteristics.

It was evident from the analysis that all the classification of the characteristics into the three domains was very useful. The most important household characteristic turned out to be the volume of resources available to the household. As would be expected, schooling involves a lot of expenditure in terms of the payment of regular fees and supplemental fees. It is therefore very plausible that the volume of resources available to the household, which

is a proxy for the wealth of the household, should be very important in determining the school attainment of the child due the high expenditures involved in schooling. The significant positive effect of household resources supports earlier findings of Hanushek (1995) and Pritchet and Filmer (1999) argument that household inputs tend to be more significant as compared to the teacher-related inputs. One also notes that

For policy purposes therefore, it would be important to consider the resource level of the households to enable one to recommend subsidies or otherwise for the country to be able to progress in its development objectives as far as the level of schooling is concerned.

It is also important to note that the community environment features very well in the explanation of school attainment. However, we note that the community environment is has a higher explanatory power in relation to the desired level of schooling as compared to the actual levels or grades attained. This would imply that the parents desire cannot and should not be underrated in designing policies that seek improve the schooling in Ghana.

In the determination of the desired level of schooling for the child, the three variables came out very strongly with the expected signs. These are the volume of household resources, the household size and the education of the mother of the child. While the volume of resources and education of the mother of the child were positive in determining the desired level of schooling, household size had a negative effect. These follow the a priori expectations.

The only child's characteristic which was significant in explaining both school attainment and the desired level of schooling is the age of the child.

However, while the age of the child had a positive effect on attainment, the same age showed a negative effect on the desired level of schooling. This would mean that in reality older children attain more than younger children. In Ghana basic education started at age six (6). Each grade took one academic year to complete. It is therefore not surprising that older children attain higher than the younger children on the average.

On the other hand the parents' desire for schooling is negatively affected by the age of the child. Two reasons may account for this phenomenon; firstly, older children who have completed schooling need not be forced back in to the classroom so their parents have more definite ideas about their attainment and their potential of advancing on the educational ladder and secondly, if parents come the realize the importance of education in the middle of their child bearing career, they would tend to invest more in the schooling of the younger children as compared to the older children. In such a situation a parent who is ready to invest more in the schooling of the younger child would be more hopeful of the attainment of the child and for that matter would report a higher level of desired education of the child.

Another child characteristic which turned out to be significant in determining the desired schooling of the child is the sex of the child. In the estimation sex was captured by a dummy with 'female' being the reference point. A positive effect of the sex dummy therefore implies that higher schooling is desired for the boy-child than for the girl-child. This result reflects the gender gap in the desired level of schooling and supports Glick and Sahn (2000) finding in the Guinea. This parental attitude towards girl-child

education has been the focus of much debate in recent times. The reasons often cited for the existence of this gender gap is the cultural norms of mail child inheriting the family while the girl-child moves out to procreate for another family. There would be the need to intensify the campaign on girl child education by emphasizing the potentials of the girl-child in achieving results just like the boy-child is thought to have.

The community dummies which were used as proxies for the community characteristics were almost insignificant in explaining school attainment but they turn out very strongly in explaining desired schooling of the child. As would be expected, this result shows that the environment does not make the child attain higher but may influence the decision to invest in the child and for that matter the desired level of schooling of the child. The study postulated that the urban community environment which has more economic opportunities would positively influence a parent's decision to invest in the schooling of the child. Truly so, the regression results point to this. It can therefore be concluded that labour market conditions have a potential influence on desired level of schooling for the child.

Discussion of Results on Determinants of Schooling Achievement

Just as in the case of school attainment, the determinants of schooling achievement are also categorized into household characteristics, child's own characteristics and the community environmental characteristics. Two of the household characteristics turned out to be significant in determining schooling achievement of the child. These are the marital status of the parents of the

child and the presence of the father of the child in the household of the mother of the child. The marital status of the parents of the child was captured by asking the question 'if the father of the child is the current husband of the mother?' The result indicates that schooling achievement is enhanced if the parents of the child were still married at the time of the interview. The positive effect of this variable implies that divorce negatively affects the schooling achievement of the child. This would mean that any attempt to enhance schooling achievement should not ignore issues related to the marital status of the parents of the children. Divorce must be discouraged to enhance the schooling achievement of the child.

As was indicated earlier, the presence of a husband to the woman implies the availability of additional resource that can be put at the disposal of the child towards his/her schooling. One is tempted to believe that the presence of the father of the child in the household will definitely bring additional resources to be used in supporting the education of the child. In addition the father of the child might assist in the supervision of the learning activities of the child, leading to higher achievement of such children.

Divorce of parents leading to the fact that parents might not be together and pool their resources for child rearing can be very disadvantageous to the schooling achievement of the child. When parents are together and whether resident in the same household or not, their resources are able to benefit the children in their schooling achievement.

It is apparent from the result that the new husbands of the mothers of the children might not be very committed to the schooling of the children of

the woman from the previous marriage. This is obviously a fact of life as each individual is intrinsically altruistic and would prefer his own good to the good of another. People would normally prefer their own children to the children of other people. Thus if a parent actually cares for the schooling and schooling achievement of the children, divorce and remarrying would not be a good option.

The second household characteristic which turned out to be significant is the presence of the father of the child in the mother's household. Though this particular variable was significant, its sign was negative. This would imply that children whose parents were staying together tended to do poorly in terms of schooling achievement. This result goes contrary to expectation.

However, considering the fact that many working fathers are not able to stay at one location due to transfers, one would presume that such fathers who were working would be away from the mother of the child but would be able to obtain the needed resources for the schooling of the child. Such parents even though were outside the household would be able to afford the needed materials for the child's schooling leading to higher achievement by the children of absentee fathers. As indicated earlier in the description of the household demographics in chapter five, most of the household surveyed were female headed household due to divorce and economic activity.

Three of the child's own characteristics turned out significant in explaining schooling achievement of the child. These were the sex of the child, repetition of a grade at the primary school level and the number of junior secondary schools attended. As was expected the sex of the child captured by

a dummy turned out very significant. This would imply that boys tended to achieve higher than boys. This goes to confirm the gender gap that exists in schooling of children in Ghana as stated earlier.

The Second child characteristic variable, significant in the determination of schooling achievement is grade repetition at the primary school level. Before the 1987 education reform some children could be asked to repeat their grades due to poor performance. This would imply that children who repeat grades are the weakest ones and for that matter their poor achievement at the BECE would not come as a surprise. With the 1987 reform however, grade repetition was not allowed. However poor performing children are normally advised, through their parents, to repeat their grades. The implication of this is that in both the pre-reform and the reform era, only poor performing children repeated grades in the primary school. The effect of grade repetition conforms to general expectations and a priori expectation of this study.

The last of the child's characteristic which was significant is the number of junior secondary schools attended. This had a positive effect on schooling achievement implying that those children who attended more than one junior secondary school tended to do better that those who did not change school at the junior secondary school level. It is important to note that transfers from one school to another was allowed in Ghana and children often changed school to 'relatively better' to enhance their chances at higher achievement. If this is the case then one would obviously expect that children

who felt they could have been doing better than they were would be the ones who would normally transfer to other junior secondary schools.

The community characteristic dummies also turned out to be very significant in explaining schooling achievement. This means that the communities with greater economic opportunities and for that matter a lower opportunity cost for schooling tended to achieve more that children from communities where the opportunity cost for schooling is higher. This result, was one of the main hypotheses motivated the study. It is therefore not surprising that this is confirmed.

Recall that it was postulated that in the urban communities, with the existence of very many employment opportunities, parents were very likely to place very high values on the schooling of their children and for that matter the opportunity cost of schooling would be lower in the urban areas. On the other hand, the absence of job opportunities in the rural areas, making agriculture the greatest employer, raises the opportunity cost of schooling since the children's labour is very valuable in agricultural production. Thus, it is not surprising that on our rural-urban continuum, the results show that the more urban a community the more significance it becomes in explaining the achievement of the children. The meaning of this is that the urban environment is more favourable to schooling achievement in Ghana. It is no wonder therefore that, if parents have the option they decide on schools with very good environmental characteristics and such schools are normally found in the urban areas.

Concluding Remarks

This chapter presented a discussion of the results from the estimation of the determinants of school attainment and schooling achievement in Ghana. It demonstrated that even though school attainment and schooling achievement are measure of educational production the factors determining them need not be the same. In fact, the results of this study have shown that:

i. Household resources are more effective in influencing school attainment as compared to schooling achievement. Households with more resources have children who tended to attain more than children from poorer households

ii. Age of the child is more effective in determining school attainment as compared to schooling achievement. Older children attained more schooling than the younger ones but older children did not achieve more than the younger ones.

iii. Community environmental characteristics are stronger in determining schooling achievement as compared to school attainment. Children in the urban areas with greater economic opportunities tended to achieve more than children in the rural areas. This was not so category clear in terms of school attainment.

iv. Gender gap exists in both school attainment and schooling achievement with boys doing better than girls in both attainment and achievement. Boys tended to attain higher

grades than the girls and also achieve higher results than the girls

CHAPTER NINE

SUMMARY CONCLUSIONS AND RECOMMENDATIONS

Introduction

In the previous section the results from the investigation of the determinants are presented. This chapter seeks to present the conclusions from the study of the determinants of school attainment and schooling achievement in Ghana. Three different levels of estimation were carried out. The first related to the Tobit regression on the determinants of school attainment. The second related to the least squares regression on the determinants of desired school attainment with the third being a least squares estimation of the determinants of schooling achievement, measuring achievement by the grades obtained from the BECE conducted by the West African Examinations Council. The presentation involves a summary, conclusions from the results and recommendations.

Summary

The study investigated parental decision making process in relation the schooling of children as a form of investment into the human capital development of the children. It took into consideration the fact that governments have made various efforts, since the colonial and post-colonial era to improve the level of school attainment and schooling achievement. Attempts made by government include the provision of facilitating resources

such as the school buildings, the teachers and the teaching-learning material in the form of textbooks and stationery. A critical look at the interventions provided in this form, both locally and internationally, indicates that these decisions were on the supply side of the equation, leaving out the demand side of the educational production function. In some cases the attempt was made to influence the demand side of the educational production function but without much understanding of the fundamentals of the demand side. It is important to note that educational production should always be thought of as some interaction between supply and demand.

The import of this study was to investigate the fundamental of the demand for schooling as a decision made by the parent of the child who invests in the schooling of the child. In order to do this effectively, the study adopted a framework of inter-temporal utility maximization within the overlapping generations model. Schooling of the child was one of the choice variables in the model. The solution of the model led to the model that was used in the investigation of the determinants of school attainment and schooling achievement in Ghana. School attainment has to do with the level or grade attained by a particular attendant and the schooling achievement has to do with the outcome of the attainment of that individual.

The data for the study came from two different sources. One involved primary data collected from four communities from southern Ghana, in 1998, for the investigation of the impact of excess fertility on the schooling of children, for which the author was an investigator. On a rural-urban continuum, the four communities are Abrafo-Odumase (Central Region), Torkuse (Greater Accra Region), Mankessim (Central Region) and

Takoradi (Western Region). These data contained schooling history of children obtained from the 80 respondents interviewed in each of the four communities. The information provided covered the 1221 children of he 320 respondents. The second chunk of data related to the BECE results obtained the West African Examinations Council for the sittings from 1990 to 1998. A total of 6681 candidates were presented for the BECE within the nine-year period by 12 schools covered in the four communities.

The measure for school attainment was obtained from the Excess Fertility Survey of the four communities. On the one hand, the grade of schooling completed by the child, as indicated by the mother was used as the actual attainment. On the other hand, the grade of schooling that the parents felt would be adequate for the child was used as desired school attainment. The analysis of school attainment data involved a total of 995 children on whom adequate information was provided. The analysis of the determinants of realized (actual) school attainment involved Tobit regression due to the fact that the dependent variable was left censored. Least Squares estimation was used for the evaluation of the determinants of desired school attainment.

The second level of the analysis related to the determinants of schooling achievement. Schooling achievement was measured using the grades obtained in the BECE by the children of the respondents interviewed in the main survey. As was mentioned earlier, a total of 1221 own children were identified in the main survey. Out of these, 61 were identified among the 6881 candidates who wrote the BECE in the 12 schools in the four communities over the nine-year period. The aggregated grades of the best six subjects, normally used by the Examinations council for the purposes of

grading the children, were used in measuring their achievement at the BECE level. Due to the fact that these grades are continuous, least squares regression was done in evaluating the determinants of schooling achievement.

Conclusions

It has been demonstrated that the overlapping generations model gives an insight into modeling the determinants of schooling of children. Parents may consider the schooling of their children either as a consumption good or an investment good. In either case, the decision to send the child to school implies the postponement of some current consumption. This decision may be influenced by various factors including the opportunity cost of schooling, (which may be informed by factors such as the community environmental characteristics, the school characteristics, the availability of jobs for those who have schooled, the experience with the job opportunities for the schooled and the alternative uses of the child's labour) the household characteristics (such as the wealth or income or resources available at the disposal of the family, the size of the family and the number of other people who share in the family's resources, the educational levels of the parents which may be in terms of their attainment or their achievement, the marital status of the parents and the total number of the benefactors of the children and the parents) and the child's own characteristics (such as age, sex and mental ability).

The explanatory variables were classified into these three categories namely; the household characteristics, the child's own characteristics and the

community characteristics. The household characteristics employed in the determination of school attainment were; household size, household resources, school attainment of the mother, marital status of the mother school attainment of the husband, and the residential status of the father of the child. The results show that the most statistically significant determinants of school attainment were the volume of household resources and the school attainment of the mother of the child. Both variables have positive coefficients and are significant at the 0.01% level. The implication of this is that children from mothers with high school attainment are more likely to attain higher than the children of mothers with very low attainment in schooling. This result is very important in the sense that it has the potential of widening the gap in school attainment between the children of literate parents and those of illiterate parents. The second most significant variable is the volume of household resources, which was used to proxy the wealth of the household. The positive sign of this variable implies that children from wealthier households tend to have higher school attainment that the children from poorer households. As in the case of the school attainment of the mothers there must be a concern for the possibility of widening the gap between the rich and the poor households.

A second part of the school attainment estimation had to do with the desired attainment, in which case the parents were asked to indicate the grades of schooling that they thought would be adequate for the children. The dependent variable "desired school attainment, measured by the level of the schooling that the parent thought would be adequate for the child, in this case was not censored so the least squares regression analysis was done to

determine the determinants. All variables that were significant in explaining actual school attainment were significant in explaining desired school attainment. In addition to these the size of the household showed up to have a very significantly negative influence on the desired schooling of the child. This means that children from large families were more disadvantaged than the children from smaller families. Note that the parents themselves have indicated that their children would be disadvantaged with the big size families. This realization goes to confirm the start or the presence of fertility transition in Ghana. Parents are getting aware of the quantity-quality trade off in the upbringing of their children, which may go a long way to improve the quality of the population in general.

The significance of the volume of household resources in explaining the desired school attainment is worth stressing here. As was expected, the income or wealth effect of the desired school attainment is very positive. Wealthier households are willing to devote more resources to the schooling of their children. This suggests that if Ghana is be able to attain middle income status by the year 2025 as is being shouted about, the level of schooling is likely to get higher than currently.

It is also important to note that the community environment features very well in the explanation of school attainment. However, we note that the community environment has a higher explanatory power in relation to the desired level of schooling as compared to the actual levels or grades attained. This implies that the parents desire cannot and should not be underrated in designing policies that seek improve the schooling in Ghana.

Another conclusion can be drawn from the significance in the coefficient of the sex of child variable. Recall that the sex of the child was measure with a male- child dummy. The result shows that higher levels of schooling are desired for male children as compared to the female children. It appears that parents seem to be more confident with the schooling of the boy-child as compared to the girl-child. This might just be an erroneous impression stemming from the culture of inheritance by the male child. Many a time, the female child is seen as somebody who will ultimately leave to primary family and form another family with her husband at marriage. Parents with this type of mentality would be more desirous in catering for their male children's schooling as compare to that of their female children.

On the determinants of schooling achievement, it is clear that the community environmental characteristics are very significant with the positive signs as expected. The urban communities with lower opportunity costs of schooling produced better results as compared to the rural communities. This implies that our desire for higher educational or schooling achievement has to be matched with the concerned community environment that will allow for effective learning.

It is important to note here that the household characteristics are not very significant in explaining schooling achievement as it did in school attainment. Only two of the household characteristics used here are significant but only at the 5% level. If the father of the child is the current husband of the mother, the child tends to achieve higher due to the fact that the child has additional support from the father who is the current husband of the mother. This is significant at the 5%. Also, if the father is in the same

household with the mother of the child, the child tends not to do as well as if the father were out of the household. This is also significant at the 5% level. Thus, if the father of the child is the current husband of the woman and is not in the same household with the child and the mother, the child tends to do better that if the father of the child is a previous husband or if the father were in the household. The only plausible explanation for this confusing father phenomenon is that the fathers who support their children best might be those who have been taken by their profession or job opportunity outside the community. It is therefore possible that fathers who do not live in the same households as the mothers of the children have their income effect favouring the schooling of the children.

In general one can conclude that school attainment is determined differently from schooling achievement. While the household characteristics are strong in determining school attainment, they are very weak in determining schooling achievement. On the other hand, the opportunity cost of schooling is stronger in determining schooling achievement while it is weaker in determining school attainment. The implication of this distinction is that policies that look at school attainment might not necessarily favour schooling achievement and policies aiming at schooling achievement may not necessarily favour school attainment.

Limitations of the Study

As has been pointed out earlier, this study depends on data from four communities in Southern Ghana. It is important to note that this can be an important limitation on the representativeness of the sample and for that

matter the conclusions to be derived. However, the blessing of this study is the detailed nature of the data which is able to link children from the households to their schools and finally to the West African Examinations Council where their achievement records are obtained. Recalling the fact that Glick and Sahn (2000) depended on data for only Conakary and produced a lot of insight into the determinants of schooling of children, one would say that this study is in the position of enhancing the understanding of the determinants of schooling in the developing country environment.

One other limitation of the study relates to the nature of the data. As has been mentioned earlier, the study makes use of cross-sectional data from four communities in southern Ghana. The fact that cross-sectional data were used, does not allow testing for fixed individual child, household and community characteristics. These are important, for example in testing the Tiebout hypothesis of community selection, mentioned earlier. The study is therefore unable to test the Tiebout Hypothesis, which could have given additional insight into the schooling of children.

It is significant to note here that the variables that were used in the regression analysis were informed by the model and dictated by the data set used. Some of the variables such as school characteristics would be important in explaining both school attainment and schooling achievement but were not used in this study due to their absence from the data set used. Also some specific child characteristics which might be very important in explaining both school attainment and schooling achievement, such as truancy and intelligence, were not used in the analysis due to their absence in the data set used.

Though the study recognizes these shortfalls, it is believed that this work has made a meagre, if not an enormous, contribution the understanding of parental decision making in relation to investment into the schooling of the child.

Policy Recommendations

The recommendations given were determined by the findings and conclusions arrived at by the study. Firstly, Government policies aimed at influencing and for that matter improving the level of school attainment and schooling achievement should not only concentrate on the supply side of the educational production function. The demand side is equally important and the educational improvement policies might achieve better results if both the demand and supply sides are considered simultaneously.

Governments might be able to influence the demand for schooling by policies aimed at reducing the cost of education, education of the hazards of large families on the schooling of the children to lead people in to forming smaller families, discouragement of the disintegration of families which would put the children at risk with the new husbands not being very interested in their schooling. Combinations of these policies might be able to work faster than if the policies were applied in isolation. Examples of the combinations are:

i. subsidizing the schooling cost for children from smaller families or an increase in the tax rebates (relief) for the parents of such children

in order to encourage small families, which will lead to higher levels of desired schooling for the children.

ii. subsidizing the schooling cost for children from properly married couples who have not broken the marriages or offering then some relief to encourage parents to stay together.

Secondly, schooling achievement, by way of the results obtained at the end of schooling, can be drastically improved if the opportunity cost of schooling is reduced. The unavailability of job opportunities for the schooled coupled with the demands for the labour of these children in the family businesses such as farming and fishing which do not need specialized skills help to inflate the opportunity cost of schooling. Policies aimed at increasing the job opportunities for the schooled in the various communities might help to reduce the opportunity cost of schooling.

Also, legislations that make the use of child labour illegal and the accompanying prosecution of defaulters would also reduce the opportunity cost of schooling. It might be important to note here that some legislation in the form of the Free Compulsory Universal Basic Education (FCUBE) is supposed to be at work in Ghana but not a single person has been officially apprehended, prosecuted and sentenced for failing to send the child to school. The effectiveness of such legislation would have to be with some commitment to enforcement especially when government is doing its part by introducing the capitation grant for the payment of the fees at the primary and junior secondary levels. It is hoped that such enforcement will discourage default.

School attainment alone might not provide the human capital required to fuel economic development. Though higher school attainments are desirable, this must be regarded as the necessary condition with higher schooling achievement being regarded as being more sufficient than the attainment. Educational policies aimed at improving school attainment should have some inbuilt components that will address issues related to the improvement of schooling achievement also.

Recommendations for Further Research

The investigation carried out by this study has thrown some light on the determinants of school attainment and schooling achievement in Ghana but cannot be said to be completely exhaustive. Many other issues related to the determinants of attainment and achievement, were not considered due to the fact that the data used for the study did not contain such information. It might be worthwhile to carry out more investigation into the determinants of schooling achievement, targeting some more specific school and community variables, which are also deemed to be important in explaining schooling achievement. Some of these variables that might be verified in other studies include:

i. the school specific variables such as the quality of the teaching staff, the quality of supervision, teaching and learning activities, the school environment, motivation of both teachers and pupils.

ii. The community specific variables such as the existence of other schools, involvement of community in the schools activities, the social beliefs and practices.

It is hoped that this investigation will instigate further studies into the parental decision making in relation to how to invest in the schooling of the child. Such studies should be able to take advantage of the contribution of this study and fill in the potholes that have been opened by this study especially in relation to the variables other variables which would improve the understanding the determinants of schooling of children.

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Appendix A: Questionnaire used for the survey of the households

UNIVERSITY OF CAPE COAST AND POPULATION COUNCIL (N.Y.)
SURVEY OF CHILDREN'S SCHOOLING
ROUND 2

Q.1 HOUSE NUMBER	
Q.2 HOUSEHOLD IDENTIFICATION	
Q.3 NAME OF RESPONDENT	
Q.4 NEW RESPONDENT	NO.....0 YES.....1
Q.5 NAME OF INTERVIEWER	
Q.6 TOWN/VILLAGE	
Q.7 DATE OF INTERVIEW	
Q.8 TIME OF INTERVIEW	START STOP
INITIALS OF SUPERVISOR	
INITIALS OF EDITOR	
INTERVIEWER COMMENTS	

Section One: Household Characteristics

Q.101 Who is the head of this household?

Name _____

[If head is the respondent, ? Go to Q.106]

Q.102 Is the head a man or a woman?

Man 1
Woman 2

Q.103 How old is the Head of Household?

Age in years ___ ___
Don't Know 999

Q.104 What is the highest grade of schooling that the head has completed?

[See schooling code sheet]

Q.105 What is your relationship to the head?

[see relationship code sheet]

Q.106 What is the main source of water your household uses for laundry and dishwashing?

Piped water (into residence/yard/compound).....1
Public tap/Nieghbour's house 2
Borehole/well in residence/yard/compound 3
Borehole/well outside residence/yard/compound 4
Surface water 5
Rainwater 6
Tanker truck 7
Other (specify) 8

Q.107 How long does it take to go there, get water and come back?

Minutes ___ ___
Hours ___ ___ **[If less than 1 hour, enter 0 for hours]**
Don't Know..... 99

Q.108 Do you household get drinking water from the same source?

No 0
Yes .....1 **[?Go to Q.111]**

Q.109 What id the main source of water your household uses for laundry and dishwashing?

Piped water (into residence/yard/compound).....1
Public tap/Nieghbour's house 2
Borehole/well in residence/yard/compound 3
Borehole/well outside residence/yard/compound 4
Surface water 5
Rainwater 6
Tanker truck 7
Other (specify) 8

Q.110 How long does it take to go there, get water and come back?

Minutes ___ ___

Hours ___ ___ **[If less than 1 hour, enter 0 for hours]**

Don't Know... 99

Q.111 What kind of toilet facility does your household use?

Flush toilet (own WC) 1
Shared WC 2
Pit toilet/Latrine (own).....3
Pit toilet/Latrine (shared).....4
Bucket/Pan 5
No facility (bush/field) 6
Other (specify) 7

Q.112 How many rooms does this household use?

Number of rooms ___ ___

Q.112 How many rooms does this household use for sleeping?

Number of rooms ___ ___

Q114 Does you household have:

Electricity	No 0	Yes 1
Functioning radio	No 0	Yes 1
Functioning television	No 0	Yes 1
Functioning refrigerator	No 0	Yes 1
Functioning bicycle	No 0	Yes 1
Functioning motorcycle	No 0	Yes 1
Functioning motor vehicle	No 0	Yes 1
Functioning tractor	No 0	Yes 1
Functioning horse cart/truck	No 0	Yes 1

Q.115 Main material of the floor (of sitting room, if more than one room) is:

Natural floor (earth/sand/mud)..... 1
Mud mixed with dung 2
Rudimentary floor (wood planks/bamboo) 3
Finished floor (parquet or polished wood).....4
Linoleum 5
Ceramic tiles 6
Cement 7
Carpet 8
Terrazo 9
Other (specify) 10

Q.116 Main materials of the walls of the house is:

Palm/wood/bamboo.....1
Mud.....2
Landcrete blocks.....3
Burnt bricks 4
Cement blocks.....5
Other (specify).....6

Q.117 Main material of the roof of the house is:

Mud.....

1

Thatch/palm.....2
Wood planks/bamboo.....3
Tiles.....

4

Cement (concrete).....5
Asbestos.....6
Aluminum.....7
Other (specify).....8

Section two: respondent's background

Q.201 In what month and year were you born?

Month ___ ___
Year ___ ___ ___ ___

Don't know month 99
Don't know year 9999

Q.202 How old are you?

Age in completed years ___ ___ **[Compare with Q.201 and reconcile]**

Q203a. Are you a native of this village?

No.....0
Yes.....1

Q203b. Have you ever stayed outside this village?

No.....0 **[?Go to Q.206]**
Yes.....1

Q204 How long did you move to this place?

Years ago ___ ___

Q205. What was the name of the last place in which you lived before?

Q206. What is your religion?

Catholic.....1
Orthodox Protestant.....2
Moslem.....3
Syncretic.....4
Pentecostal.....5
Traditional.....6
Other (Specify).....7

Q207. What is your ethnicity?

Adangbe.....1
Ga.....2
Denkyira.....3
Fanti.....4
Ahanta.....5
Ewe.....6
Other (Specify).....7

Q208. What is your mother tongue?

Ga/Adangbe.....1
Twi.....2
Fante.....3
Ahanta.....4
Ewe.....5
English.....6
Other (Specify).....7

Q209. What is the highest grade of schooling you have completed?

[SEE SCHOOLING CODE SHEET]

Q210. Can you read and understand a letter or newspaper easily, with difficulty, or not at all, in any language?

Easily.....1
With difficulty.....2
Not at all.....3 **[? Go to Q.212]**

Q211 Do you usually read a newspaper or magazine at least once a week?

No.....0
Yes.....1

Q212 What is your current marital status?

Never married, not in union.....1 **[?Go to Q.220]**
Not married, in union.....2
Currently married.....3
Separated.....4 **[?Go to Q.216]**
Divorced.....5 **[?Go to Q.216]**
Widowed.....6 **[?Go to Q.216]**

Q213. What is the highest grade of schooling that your current spouse/partner has completed?

[SEE SCHOOLING CODE SHEET]

Q214. What is the occupation of your current spouse/partner?

[SEE OCCUPATION CODE SHEET]

Q215. We have talked of your current marriage/union. Have you ever been married to (in union with) any one else?

No.....0 **[?Go to Q.217]**
Yes.....1

Q216. (a) What is the completed schooling of your former husband/partners?
(b) Did you have any natural children with this husband/partner (these husbands/partners)
(c) What was the husband's/partner's occupation?

	Most recent former husband	Next most recent former husband
Q216a. Schooling of former husband/partner	[SEE CODE SHEET]	[SEE CODE SHEET]
Q216b. Any natural children with former husband/partner?	No.....0 Yes.....1	No.....0 Yes.....1
Q216c. Occupation of former husband/partner	[SEE CODE SHEET]	[SEE CODE SHEET]

Q217. **IF NOT CURRENTLY MARRIED/IN UNION, GO TO Q220**

Apart from yourself, does you current husband/partner have any other wives?

No.....0 **[?Go to Q.220]**
Yes.....1

Q218. How many wives does he currently have?

Number of wives ___ ___

Q219. What is your wife rank? That is, are you the 1st wife, 2nd wife, ...?

Respondent's wife rank ____

Q220. What is your current occupation?

[SEE OCCUPATION CODE SHEET]

Q221. When you are "in trouble", whom do you approach for help? List 3 most important persons

Name of Benefactor or Guardian	Age	Relationship to Respondent [SEE CODES]	Completed Schooling [SEE CODES]	Residence This compound.....1 This village/town.....2 Other rural.....3 Other urban.....4	Occupation
a.					
b.					
c.					

Q221. How many other benefactors/guardians do you have?

Number of other benefactors ___ ___

Q223 To how many children have you given birth? (That is your own natural children). Please include all children who cried showed any signs of life when born, **even those who died later.**

Number of own children born alive ___ ___ **[if 0, Go to Q227]**

Q224. How many of these children are alive?

Number of own children alive ___ ___

Q225. Do you have any living own children age 6 or older, whether living with you or living elsewhere?

No.....0 **[?Go to Q.227]**
Yes.....1

Q226. How many?

Number of own children age 6 or older ___ ___

Q227. **[if not currently married or in union, Go to Q229]**

Apart from any children to whom you have given birth, how many other children has you current husband/partner fathered?

Number of other children fathered by husband___ ___ **[if 0, Go to Q229]**

Q228. Of these other children that your husband has fathered, how many live here?

Number of husbands other children living here ___ ___

Q229. Do you care for any other children who are not your own natural children (and are not you husband's/partner's natural children) but who have been fostered into this household?

No.....0 **[?Go to Q.231]**
Yes.....1

Q230. How many fostered children do you have?

Number of fostered children living here ___ ___

INTERVIEWER: CHECK QUESTION 224

Q231. **[IF RESPONDENT HAS LIVING CHILDREN OF HER OWN, ASK]**

Looking at your economic and social conditions, if you could go back to the time in your life when you did not have any children, and choose exactly the number of children to have in your whole life, how many would that be?

[IF RESPONDENT HAS NO LIVING CHILDREN OF HER OWN, ASK]
If you could choose exactly the number of children to have in your whole life, how many would that be?
Number of Children ___ ___
Don't know.....99
Other (specify).....

Q232. Are you pregnant now?

No.....0
Yes.....1
Don't know.....99

Q233. **[IF NOT PREGNANT OF DON'T KNOW, ASK]**
Would you like to have a/another child or would you prefer not to have any (more) children?

[OR IF PREGNANT, ASK]
After the child you are expecting, would you like to have another child or would you prefer not to have any more children?

Like to have a/another child.....1
Prefer no more (none).....2 **[Go to Q235]**
Cannot get pregnant.....3 **[Go to Q235]**
Undecided.....4 **[Go to Q235]**

Q234 **[IF NOT PREGNANT OF DON'T KNOW, ASK]**
How long would you like to wait from now before the birth of a/another child?

[OR IF PREGNANT, ASK]
How long would you like to wait after the birth of the child you are expecting before the birth of another child?

Months ___ ___
Years ___ ___
Now.....00
Don't know.....99

[INTERVIEWER INSTRUCTIONS]

Q235 **[Check questions Q201 an Q202]**

Is respondent age 25 to 55?

No.....0
Yes.....1 **[Go to Q301]**

Q236 **[Check question Q4]**
Is respondent a NEW respondent?
No.....0 **[Go to Q301]**
Yes.....1 **[End interview]**

Section 3: Birth and Schooling histories

Now I would like to talk to you about all of your natural births (own children), whether still alive or not, starting with the first one you had. [Interviewer: Record names of all the births in Q.301. Record twins and triplets in separate columns. Be sure to list all births including those that died. If respondent has no births, Go to Q.400]

QUESTIONS	CHILD 1	CHILD 2	CHILD 3	CHILD 4	CHILD 5
301a. WHAT NAME WAS GIVEN TO YOUR (FIRST, NEXT BABY)?	NAME	NAME	NAME	NAME	NAME
301b WHAT IS THE CHILD'S OFFICIAL NAME?	OFFICIAL NAME	OFFICIAL NAME	OFFICIAL NAME	OFFICIAL NAME	OFFICIAL NAME
302. WAS [NAME] BORN SINGLE, TWIN OR TRIPLET?	SINGLE.....1 TWIN OR TRIPLET.....2	SINGLE.....1 TWIN OR TRIPLET.....2	SINGLE.....1 TWIN OR TRIPLET.....2	SINGLE.....1 TWIN OR TRIPLET.....2	SINGLE.....1 TWIN OR TRIPLET.....2
303. IS [NAME] A BOY OF A GIRL?	BOY.....1 GIRL.....2	BOY.....1 GIRL.....2	BOY.....1 GIRL.....2	BOY.....1 GIRL.....2	BOY.....1 GIRL.....2
304 IN WHAT MONTH ANDYEAR WAS [NAME] BORN?	MONTH ___ YEAR ____ DON'T KNOW MONTH = 99 DON'T KNOW YEAR = 9999	MONTH ___ YEAR ____ DON'T KNOW MONTH = 99 DON'T KNOW YEAR = 9999	MONTH ___ YEAR ____ DON'T KNOW MONTH = 99 DON'T KNOW YEAR = 9999	MONTH ___ YEAR ____ DON'T KNOW MONTH = 99 DON'T KNOW YEAR = 9999	MONTH ___ YEAR ____ DON'T KNOW MONTH = 99 DON'T KNOW YEAR = 9999
305. AT THE TIME YOU BECAME PREGNANT WITH [NAME], DID YOU WANT TO BECOME PREGNANT THEN, OR DID YOU WANT TO WAIT UNTIL LATER OR DID YOU WANT NO (MORE) CHILDREN AT ALL?	THEN.....1 LATER.....2 NO MORE.....3 DON'T KNOW.....99	THEN.....1 LATER.....2 NO MORE.....3 DON'T KNOW.....99	THEN.....1 LATER.....2 NO MORE.....3 DON'T KNOW.....99	THEN.....1 LATER.....2 NO MORE.....3 DON'T KNOW.....99	THEN.....1 LATER.....2 NO MORE.....3 DON'T KNOW.....99
306 IS [NAME]STILL ALIVE?	NO.....0 YES.....1 [? GO TO Q.309]	NO.....0 YES.....1 [? GO TO Q.309]	NO.....0 YES.....1 [? GO TO Q.309]	NO.....0 YES.....1 [? GO TO Q.309]	NO.....0 YES.....1 [? GO TO Q.309]
307 HOW OLD WAS [NAME] WHEN S/HE DIED? [RECORD DAYS IF	DAYS	DAYS	DAYS	DAYS	DAYS

QUESTIONS	CHILD 1	CHILD 2	CHILD 3	CHILD 4	CHILD 5
LESS THAN 1 MONTH, MONTHS IF LESS THAN 2 YEARS OR YEARS]	MONTHS __ __ YEARS DON'T KNOW __ __ ....99 [IF < 6 YEARS, ? GO TO NEXT CHILD]	MONTHS __ __ YEARS DON'T KNOW __ __ ....99 [IF < 6 YEARS, ? GO TO NEXT CHILD]	MONTHS __ __ YEARS DON'T KNOW __ __ ....99 [IF < 6 YEARS, ? GO TO NEXT CHILD]	MONTHS __ __ YEARS DON'T KNOW __ __ ....99 [IF < 6 YEARS, ? GO TO NEXT CHILD]	MONTHS __ __ YEARS DON'T KNOW __ __ ....99 [IF < 6 YEARS, ? GO TO NEXT CHILD]
308 WHAT WAS [NAME'S]HIGHEST GRADE OF SCHOOLING?	[SEE SCHOOL CODES] [GO TO NEXT CHILD]	[SEE SCHOOL CODES] [GO TO NEXT CHILD]	[SEE SCHOOL CODES] [GO TO NEXT CHILD]	[SEE SCHOOL CODES] [GO TO NEXT CHILD]	[SEE SCHOOL CODES] [GO TO NEXT CHILD]
309 HOW OLD WAS [NAME] AT HIS OR HER LAST BIRTHDAY?	YEARS __ __	YEARS __ __	YEARS __ __	YEARS __ __	YEARS __ __
310 IS [NAME] LIVING WITH YOU?	NO....0 YES....1	NO....0 YES....1	NO....0 YES....1	NO....0 YES....1	NO....0 YES....1
311. IS [NAME'S] NATURAL FATHER LIVING WITH YOU HERE?	NO....0 YES....1	NO....0 YES....1	NO....0 YES....1	NO....0 YES....1	NO....0 YES....1
312 IS NATURAL FATHER THE CURRENT HUSBAND, THE MOST RECENT FORMER HUSBAND, THE NEXT MOST RECENT, OR OTHER?	CURRENT HUSBAND ....1 MOST RECENT FORMER HUSBAND....2 NEXT MOS RECENT FORMER HUSBAND ....3 OTHER....4	CURRENT HUSBAND ....1 MOST RECENT FORMER HUSBAND....2 NEXT MOS RECENT FORMER HUSBAND ....3 OTHER....4	CURRENT HUSBAND ....1 MOST RECENT FORMER HUSBAND....2 NEXT MOS RECENT FORMER HUSBAND ....3 OTHER....4	CURRENT HUSBAND ....1 MOST RECENT FORMER HUSBAND....2 NEXT MOS RECENT FORMER HUSBAND ....3 OTHER....4	CURRENT HUSBAND ....1 MOST RECENT FORMER HUSBAND....2 NEXT MOS RECENT FORMER HUSBAND ....3 OTHER....4
313 DID [NAME] EVER ATTEND NURSERY OR KINDERGARTEN?	NO....0 YES....1	NO....0 YES....1	NO....0 YES....1	NO....0 YES....1	NO....0 YES....1
314 APART FROM YOURSELF, WHO IS THE MOST IMPORTANT PERSON WHO EITHER TAKES DECISIONS ABOUT THE SCHOOLING OF [NAME] OR GIVES ASSISTANCE TO [NAME]?	NEME OF DECISION MAKER OR BENEFACTOR [IF NONE, ?GO TO Q.321]	NEME OF DECISION MAKER OR BENEFACTOR [IF NONE, ?GO TO Q.321]	NEME OF DECISION MAKER OR BENEFACTOR [IF NONE, ?GO TO Q.321]	NEME OF DECISION MAKER OR BENEFACTOR [IF NONE, ?GO TO Q.321]	NEME OF DECISION MAKER OR BENEFACTOR [IF NONE, ?GO TO Q.321]
315 WHAT ID THE RELATIONSHIP OF THIS PERSON TO [NAME]?	[SEE RELATIONSHIP CODES] [IF "FATHER" CODE=1 ? GO TO	[SEE RELATIONSHIP CODES]	[SEE RELATIONSHIP CODES]	[SEE RELATIONSHIP CODES]	[SEE RELATIONSHIP CODES]

QUESTIONS	CHILD 1 Q.320]	CHILD 2 [IF "FATHER" CODE=1 ? GO TO Q.320]	CHILD 3 [IF "FATHER" CODE=1 ? GO TO Q.320]	CHILD 4 [IF "FATHER" CODE=1 ? GO TO Q.320]	CHILD 5 [IF "FATHER" CODE=1 ? GO TO Q.320]
316 SEX OF THIS PERSON	MALE .....1 FEMALE 2	MALE .....1 FEMALE 2	MALE .....1 FEMALE 2	MALE .....1 FEMALE 2	MALE .....1 FEMALE 2
317 AGE OF THIS PERSON	YEARS ---- ---- DON'T KNOW.....99	YEARS ---- ---- DON'T KNOW.....99	YEARS ---- ---- DON'T KNOW.....99	YEARS ---- ---- DON'T KNOW.....99	YEARS ---- ---- DON'T KNOW.....99
318 SCHOOLING OF THIS PERSON	[SEE SCHOOLING CODES]	[SEE SCHOOLING CODES]	[SEE SCHOOLING CODES]	[SEE SCHOOLING CODES]	[SEE SCHOOLING CODES]
319 OCCUPATION OF THIS PERSON	[SEE OCCUPATION CODES]	[SEE OCCUPATION CODES]	[SEE OCCUPATION CODES]	[SEE OCCUPATION CODES]	[SEE OCCUPATION CODES]
320 DOES THIS PERSON TAKE DECISIONS, GIVE ASSISTANCE OR BOTH?	DECISIONS ONLY.....1 ASSISTANCE ONLY .....2 BOTH.....3	DECISIONS ONLY.....1 ASSISTANCE ONLY .....2 BOTH.....3	DECISIONS ONLY.....1 ASSISTANCE ONLY .....2 BOTH.....3	DECISIONS ONLY.....1 ASSISTANCE ONLY .....2 BOTH 3	DECISIONS ONLY.....1 ASSISTANCE ONLY .....2 BOTH.....3
321 DID CHILD, [NAME] EVER ATTEND PRIMARY SCHOOL?	NO.....0 YES.....1 [?GO TO Q323]	NO.....0 YES.....1 [?GO TO Q323]	NO.....0 YES.....1 [?GO TO Q323]	NO.....0 YES.....1 [?GO TO Q323]	NO.....0 YES.....1 [?GO TO Q323]
322 WHAT ARE THE MAIN REASONS [NAME] NEVER ATTENDED SCHOOL?	NO MONEY FOR SCHOOL FEES.....1 PHYSICALLY OR MENTALLY DISABLED .....2 TOO SICKLY.....3 NOT ACADEMICALLY SUITED FOR SCHOOL .....4 NEEDED TO LOOK AFTER YOUNGER SIBLINGS.....5 TOO MANY OTHER DOMESTIC RESPONSIBILITIES .....6 NEEDED ON FAMILY FARM OR BUSINESS.....7 SCHOOL TOO FAR.....8 FAMILY SEES NO ECONOMIC BENEFIT.....9 PARENTS DO NOT APPROVE OF SCHOOL.....10	NO MONEY FOR SCHOOL FEES.....1 PHYSICALLY OR MENTALLY DISABLED.....2 TOO SICKLY.....3 NOT ACADEMICALLY SUITED FOR SCHOOL .....4 NEEDED TO LOOK AFTER YOUNGER SIBLINGS.....5 TOO MANY OTHER DOMESTIC RESPONSIBILITIES .....6 NEEDED ON FAMILY FARM OR BUSINESS.....7 SCHOOL TOO FAR .....8 FAMILY SEES NO ECONOMIC BENEFIT.....9 PARENTS DO NOT APPROVE OF SCHOOL.....10	NO MONEY FOR SCHOOL FEES.....1 PHYSICALLY OR MENTALLY DISABLED.....2 TOO SICKLY.....3 NOT ACADEMICALLY SUITED FOR SCHOOL .....4 NEEDED TO LOOK AFTER YOUNGER SIBLINGS.....5 TOO MANY OTHER DOMESTIC RESPONSIBILITIES .....6 NEEDED ON FAMILY FARM OR BUSINESS.....7 SCHOOL TOO FAR.....8 FAMILY SEES NO ECONOMIC BENEFIT.....9 PARENTS DO NOT APPROVE OF SCHOOL.....10	NO MONEY FOR SCHOOL FEES.....1 PHYSICALLY OR MENTALLY DISABLED.....2 TOO SICKLY.....3 NOT ACADEMICALLY SUITED FOR SCHOOL .....4 NEEDED TO LOOK AFTER YOUNGER SIBLINGS.....5 TOO MANY OTHER DOMESTIC RESPONSIBILITIES .....6 NEEDED ON FAMILY FARM OR BUSINESS.....7 SCHOOL TOO FAR.....8 FAMILY SEES NO ECONOMIC BENEFIT.....9 PARENTS DO NOT APPROVE OF SCHOOL.....10

QUESTIONS	CHILD 1	CHILD 2	CHILD 3	CHILD 4	CHILD 5
	NO SCHOOL PLACES AVAILABLE.....11 POOR SCHOOL QUALITY.....12 KEPT AT HOME FOR BETHROTAL.....13 OTHER (SPECIFY) .....14 DON'T KNOW.....15 [ALL GO TO Q.372]	NO SCHOOL PLACES AVAILABLE.....11 POOR SCHOOL QUALITY.....12 KEPT AT HOME FOR BETHROTAL.....13 OTHER (SPECIFY) .....14 DON'T KNOW.....15 [ALL GO TO Q.372]	NO SCHOOL PLACES AVAILABLE.....11 POOR SCHOOL QUALITY.....12 KEPT AT HOME FOR BETHROTAL.....13 OTHER (SPECIFY) .....14 DON'T KNOW.....15 [ALL GO TO Q.372]	NO SCHOOL PLACES AVAILABLE.....11 POOR SCHOOL QUALITY.....12 KEPT AT HOME FOR BETHROTAL.....13 OTHER (SPECIFY) .....14 DON'T KNOW.....15 [ALL GO TO Q.3/2]	NO SCHOOL PLACES AVAILABLE.....11 POOR SCHOOL QUALITY.....12 KEPT AT HOME FOR BETHROTAL.....13 OTHER (SPECIFY) .....14 DON'T KNOW.....15 [ALL GO TO Q.372]
323 AT WHAT AGE DID [NAME] ATTEND PRIMARY SCHOOL FOR THE FIRST TIME?	AGE __ __ [IF AGE <7 GO TO Q325] DON'T KNOW.....99 [? GO TO Q325]	AGE [__ __ IF AGE <7 GO TO Q325] DON'T KNOW.....99 [? GO TO Q325]	AGE __ __ [IF AGE <7 GO TO Q325] DON'T KNOW.....99 [? GO TO Q325]	AGE __ __ [IF AGE <7 GO TO Q325] DON'T KNOW.....99 [? GO TO Q325]	AGE __ __ [IF AGE <7 GO TO Q325] DON'T KNOW.....99 [? GO TO Q325]
324 WHY DID NAME NOT GO TO PRIMARY SCHOOL AT AGE 6?	TOO SMALL /NOT STRONG ENOUGH.....1 NO SCHOOL VACANCIES.....2 NEEDED TO LOOK AFTER YOUNG SIBLINGS.....3 NEEDED FOR OTHER DOMESTIC RESPONSIBILITIES.....4 NEEDED ON FAMILY FARM OR BUSINESS.....5 SICKNESS.....6 NO MONEY FOR SCHOOL FEES.....7 TOO IMMATURE(discipline, intellectual development).....8 OTHER (SPECIFY) .....9 DON'T KNOW.....99	TOO SMALL /NOT STRONG ENOUGH.....1 NO SCHOOL VACANCIES.....2 NEEDED TO LOOK AFTER YOUNG SIBLINGS.....3 NEEDED FOR OTHER DOMESTIC RESPONSIBILITIES.....4 NEEDED ON FAMILY FARM OR BUSINESS.....5 SICKNESS.....6 NO MONEY FOR SCHOOL FEES.....7 TOO IMMATURE(discipline, intellectual development).....8 OTHER (SPECIFY) .....9 DON'T KNOW.....99	TOO SMALL /NOT STRONG ENOUGH.....1 NO SCHOOL VACANCIES.....2 NEEDED TO LOOK AFTER YOUNG SIBLINGS.....3 NEEDED FOR OTHER DOMESTIC RESPONSIBILITIES.....4 NEEDED ON FAMILY FARM OR BUSINESS.....5 SICKNESS.....6 NO MONEY FOR SCHOOL FEES.....7 TOO IMMATURE(discipline, intellectual development).....8 OTHER (SPECIFY) .....9 DON'T KNOW.....99	TOO SMALL /NOT STRONG ENOUGH.....1 NO SCHOOL VACANCIES.....2 NEEDED TO LOOK AFTER YOUNG SIBLINGS.....3 NEEDED FOR OTHER DOMESTIC RESPONSIBILITIES.....4 NEEDED ON FAMILY FARM OR BUSINESS.....5 SICKNESS.....6 NO MONEY FOR SCHOOL FEES.....7 TOO IMMATURE(discipline, intellectual development).....8 OTHER (SPECIFY) .....9 DON'T KNOW.....99	TOO SMALL /NOT STRONG ENOUGH.....1 NO SCHOOL VACANCIES.....2 NEEDED TO LOOK AFTER YOUNG SIBLINGS.....3 NEEDED FOR OTHER DOMESTIC RESPONSIBILITIES.....4 NEEDED ON FAMILY FARM OR BUSINESS.....5 SICKNESS.....6 NO MONEY FOR SCHOOL FEES.....7 TOO IMMATURE(discipline, intellectual development).....8 OTHER (SPECIFY) .....9 DON'T KNOW.....99
325 DID [NAME REPEAT ANY PRIMARY GRADES?	NO.....0 [?GO TO 328] YES.....1 DON'T KNOW.....99 [?GO TO 328]	NO.....0 [?GO TO 328] YES.....1 DON'T KNOW.....99 [?GO TO 328]	NO.....0 [?GO TO 328] YES.....1 DON'T KNOW.....99 [?GO TO 328]	NO.....0 [?GO TO 328] YES.....1 DON'T KNOW.....99 [?GO TO 328]	NO.....0 [?GO TO 328] YES.....1 DON'T KNOW.....99 [?GO TO 328]
326 WHICH GRADES WERE REPEATED?	[SEE SCHOOLING CODES]	[SEE SCHOOLING CODES]	[SEE SCHOOLING CODES]	[SEE SCHOOLING CODES]	[SEE SCHOOLING CODES]

QUESTIONS	CHILD 1	CHILD 2	CHILD 3	CHILD 4	CHILD 5
327 WHY DID [NAME] REPEAT THESE GRADES?	[SEE REPEATITION CODES]	[SEE REPEATITION CODES]	[SEE REPEATITION CODES]	[SEE REPEATITION CODES]	[SEE REPEATITION CODES]
328 DURING [NAME'S] PRIMARY SCHOOL YEARS, HOW MANY SCHOOLS DID NAME ATTEND?	ONE SCHOOL......1 [?GO TO Q.330] TWO SCHOOLS......2 THREE SCHOOLS......3 DON'T KNOW......99 [?GO TO Q.330]	ONE SCHOOL......1 [?GO TO Q.330] TWO SCHOOLS......2 THREE SCHOOLS......3 DON'T KNOW......99 [?GO TO Q.330]	ONE SCHOOL......1 [?GO TO Q.330] TWO SCHOOLS......2 THREE SCHOOLS......3 DON'T KNOW......99 [?GO TO Q.330]	ONE SCHOOL......1 [?GO TO Q.330] TWO SCHOOLS......2 THREE SCHOOLS......3 DON'T KNOW......99 [?GO TO Q.330]	ONE SCHOOL......1 [?GO TO Q.330] TWO SCHOOLS......2 THREE SCHOOLS......3 DON'T KNOW......99 [?GO TO Q.330]
329 WHY DID NAME ATTTEND MORE THAN ONE SCHOOL?	[SEE ATTENDANCE CODES]	[SEE ATTENDANCE CODES]	[SEE ATTENDANCE CODES]	[SEE ATTENDANCE CODES]	[SEE ATTENDANCE CODES]
330. WHAT IS THE NAME OF THE PRIMARY SCHOOL THAT [NAME] LAST ATTENDED?	NAME OF SCHOOL	NAME OF SCHOOL	NAME OF SCHOOL	NAME OF SCHOOL	NAME OF SCHOOL
331. WHEN NAME WAS IN PRIMARY S. DID [NAME] TAKE ANY EXTRA CLASSES OR TUITION OUTSIDE THE SCHOOL HOURS?	NO......0 YES......1 DON'T KNOW......99	NO......0 YES......1 DON'T KNOW......99	NO......0 YES......1 DON'T KNOW......99	NO......0 YES......1 DON'T KNOW......99	NO......0 YES......1 DON'T KNOW......99
332 DID [NAME'S] NATURAL FATHER TAKE DECISION ABOUT JSS/MIDDLE SCHOOL FOR [NAME]?	NO......0 YES......1 DON'T KNOW......99	NO......0 YES......1 DON'T KNOW......99	NO......0 YES......1 DON'T KNOW......99	NO......0 YES......1 DON'T KNOW......99	NO......0 YES......1 DON'T KNOW......99
333 APART FROM YOURSELF (AND [NAME'S] NATURAL FATHER), DID ANYONE ELSE TAKE DECISIONS ABOUT JSS/MIDDLE SCHOOL FOR [NAME]?	NO......0 [?GO TO Q.335] YES......1 DON'T KNOW......99 [?GO TO Q.335]	NO......0 [?GO TO Q.335] YES......1 DON'T KNOW......99 [?GO TO Q.335]	NO......0 [?GO TO Q.335] YES......1 DON'T KNOW......99 [?GO TO Q.335]	NO......0 [?GO TO Q.335] YES......1 DON'T KNOW......99 [?GO TO Q.335]	NO......0 [?GO TO Q.335] YES......1 DON'T KNOW......99 [?GO TO Q.335]
334 WHAT IS THE RELATIONSHIP OF THIS PERSON TO [NAME]?	[SEE RELATIONSHIP CODES]	[SEE RELATIONSHIP CODES]	[SEE RELATIONSHIP CODES]	[SEE RELATIONSHIP CODES]	[SEE RELATIONSHIP CODES]
335 DID [NAME] EVER ATTEND JSS OR MIDDLE SCHOOL?	NO......0 [?GO TO Q.365] YES......1	NO......0 [?GO TO Q.365] YES......1	NO......0 [?GO TO Q.365] YES......1	NO......0 [?GO TO Q.365] YES......1	NO......0 [?GO TO Q.365] YES......1
336 DID [NAME'S] NATURAL FATHER GIVE ASSISTANCE FOR JSS/MIDDLE SCHOOL ?	NO......0 YES......1 DON'T KNOW......99	NO......0 YES......1 DON'T KNOW......99	NO......0 YES......1 DON'T KNOW......99	NO......0 YES......1 DON'T KNOW......99	NO......0 YES......1 DON'T KNOW......99

QUESTIONS	CHILD 1	CHILD 2	CHILD 3	CHILD 4	CHILD 5
337 APART FROM YOURSELF (AND [NAME'S] NATURAL FATHER), DID ANYONE ELSE TAKE GIVE ASSISTANCE FOR JSS/MIDDLE SCHOOL?	NO ....0 [?GO TO Q.339] YES ....1 DON'T KNOW ....99 [?GO TO Q.339]	NO ....0 [?GO TO Q.339] YES ....1 DON'T KNOW ....99 [?GO TO Q.339]	NO ....0 [?GO TO Q.339] YES ....1 DON'T KNOW ....99 [?GO TO Q.339]	NO ....0 [?GO TO Q.339] YES ....1 DON'T KNOW ....99 [?GO TO Q.339]	NO ....0 [?GO TO Q.339] YES ....1 DON'T KNOW ....99 [?GO TO Q.339]
338 WHAT IS THE RELATIONSHIP OF THIS PERSON TO [NAME]?	[SEE RELATIONSHIP CODES]	[SEE RELATIONSHIP CODES]	[SEE RELATIONSHIP CODES]	[SEE RELATIONSHIP CODES]	[SEE RELATIONSHIP CODES]
339 DID [NAME REPEAT ANY GRADES OF JSS/MIDDLE SCHOOL?	NO ....0 [?GO TO 342] YES ....1 DON'T KNOW ....99 [?GO TO 342]	NO ....0 [?GO TO 342] YES ....1 DON'T KNOW ....99 [?GO TO 342]	NO ....0 [?GO TO 342] YES ....1 DON'T KNOW ....99 [?GO TO 342]	NO ....0 [?GO TO 342] YES ....1 DON'T KNOW ....99 [?GO TO 3-2]	NO ....0 [?GO TO 342] YES ....1 DON'T KNOW ....99 [?GO TO 342]
340 WHICH GRADES WERE REPEATED?	[SEE SCHOOLING CODES]	[SEE SCHOOLING CODES]	[SEE SCHOOLING CODES]	[SEE SCHOOLING CODES]	[SEE SCHOOLING CODES]
341. WHY DID [NAME] REPEAT THESE GRADES?	[SEE REPEATITION CODES]	[SEE REPEATITION CODES]	[SEE REPEATITION CODES]	[SEE REPEATITION CODES]	[SEE REPEATITION CODES]
342 DURING [NAME'S] JSS/MIDDLE SCHOOL YEARS, HOW MANY SCHOOLS DID NAME ATTEND?	ONE SCHOOL ....1 [?GO TO Q.344] TWO SCHOOLS ....2 THREE SCHOOLS ....3 DON'T KNOW ....99 [?GO TO Q.344]	ONE SCHOOL ....1 [?GO TO Q.344] TWO SCHOOLS ....2 THREE SCHOOLS ....3 DON'T KNOW ....99 [?GO TO Q.344]	ONE SCHOOL ....1 [?GO TO Q.344] TWO SCHOOLS ....2 THREE SCHOOLS ....3 DON'T KNOW ....99 [?GO TO Q.344]	ONE SCHOOL ....1 [?GO TO Q.344] TWO SCHOOLS ....2 THREE SCHOOLS ....3 DON'T KNOW ....99 [?GO TO Q.344]	ONE SCHOOL ....1 [?GO TO Q.344] TWO SCHOOLS ....2 THREE SCHOOLS ....3 DON'T KNOW ....99 [?GO TO Q.344]
343 WHY DID NAME ATTTEND MORE THAN ONE SCHOOL?	[SEE ATTENDANCE CODES]	[SEE ATTENDANCE CODES]	[SEE ATTENDANCE CODES]	[SEE ATTENDANCE CODES]	[SEE ATTENDANCE CODES]
344 WHAT IS THE NAME OF THE JSS/MIDDLE SCHOOL THAT [NAME] LAST ATTENDED?	NAME OF SCHOOL	NAME OF SCHOOL	NAME OF SCHOOL	NAME OF SCHOOL	NAME OF SCHOOL

QUESTIONS	CHILD 1	CHILD 2	CHILD 3	CHILD 4	CHILD 5
345 WHY WAS THIS JSS/MIDDLE SCHOOL SSELECTED	NEARREST SCHOOL ....1 GOOD PAST RESULTS ON BECE ....2 GOOD PREPARATION FOR SECONDARY ....3 FINANCIAL CONSIDERATIONS........4 LACK OF ALTERNATIVE CHOICES........5 CHILD'S OWN CHOICE........6 OTHER(SPECIFY) ....7 DON'T KNOW 99	NEARREST SCHOOL........1 GOOD PAST RESULTS ON BECE ....2 GOOD PREPARATION FOR SECONDARY ....3 FINANCIAL CONSIDERATIONS........4 LACK OF ALTERNATIVE CHOICES........5 CHILD'S OWN CHOICE........6 OTHER(SPECIFY) ....7 DON'T KNOW........99	NEARREST SCHOOL........1 GOOD PAST RESULTS ON BECE ....2 GOOD PREPARATION FOR SECONDARY ....3 FINANCIAL CONSIDERATIONS........4 LACK OF ALTERNATIVE CHOICES........5 CHILD'S OWN CHOICE........6 OTHER(SPECIFY) ....7 DON'T KNOW........99	NEARREST SCHOOL........1 GOOD PAST RESULTS ON BECE ....2 GOOD PREPARATION FOR SECONDARY ....3 FINANCIAL CONSIDERATIONS........4 LACK OF ALTERNATIVE CHOICES........5 CHILD'S OWN CHOICE........6 OTHER(SPECIFY) ....7 DON'T KNOW........99	NEARREST SCHOOL........1 GOOD PAST RESULTS ON BECE ....2 GOOD PREPARATION FOR SECONDARY ....3 FINANCIAL CONSIDERATIONS ....4 LACK OF ALTERNATIVE CHOICES........5 CHILD'S OWN CHOICE........6 OTHER(SPECIFY) ....7 DON'T KNOW........99
346. WHEN NAME WAS IN JSS/MIDDLE, DID [NAME] TAKE ANY EXTRA CLASSES OR TUITION OUTSIDE THE SCHOOL HOURS?	NO........0 [?GO TO Q.348] YES........1 DON'T KNOW........99 [?GO TO Q.348]	NO........0 [?GO TO Q.348] YES........1 DON'T KNOW........99 [?GO TO Q.348]	NO........0 [?GO TO Q.348] YES........1 DON'T KNOW........99 [?GO TO Q.348]	NO........0 [?GO TO Q.348] YES........1 DON'T KNOW........99 [?GO TO Q.348]	NO........0 [?GO TO Q.348] YES........1 DON'T KNOW........99 [?GO TO Q.348]
347. WHAT WERE THE SUBJESTS FOR THESE EXTRA CLASSES?	GENERAL SCIENCE........1 ENGLISH........2 MATHEMATICS........3 GHANAIAN LANGUAGE........4 FRENCH........5 SOCIAL STUDIES........6 CULTURAL STUDIES........7 LIFE SKILLS........8 VOCATIONAL SKILLS........9 TECHNICAL SKILLS........10 AGRICULTURAL SCIENCE...11 DON'T KNOW........99	GENERAL SCIENCE........1 ENGLISH........2 MATHEMATICS........3 GHANAIAN LANGUAGE........4 FRENCH........5 SOCIAL STUDIES........6 CULTURAL STUDIES........7 LIFE SKILLS........8 VOCATIONAL SKILLS........9 TECHNICAL SKILLS........10 AGRICULTURAL SCIENCE...11 DON'T KNOW........99	GENERAL SCIENCE........1 ENGLISH........2 MATHEMATICS........3 GHANAIAN LANGUAGE........4 FRENCH........5 SOCIAL STUDIES........6 CULTURAL STUDIES........7 LIFE SKILLS........8 VOCATIONAL SKILLS........9 TECHNICAL SKILLS........10 AGRICULTURAL SCIENCE...11 DON'T KNOW........99	GENERAL SCIENCE........1 ENGLISH........2 MATHEMATICS........3 GHANAIAN LANGUAGE........4 FRENCH........5 SOCIAL STUDIES........6 CULTURAL STUDIES........7 LIFE SKILLS........8 VOCATIONAL SKILLS........9 TECHNICAL SKILLS........10 AGRICULTURAL SCIENCE...11 DON'T KNOW........99	GENERAL SCIENCE........1 ENGLISH........2 MATHEMATICS........3 GHANAIAN LANGUAGE........4 FRENCH........5 SOCIAL STUDIES........6 CULTURAL STUDIES........7 LIFE SKILLS........8 VOCATIONAL SKILLS........9 TECHNICAL SKILLS........10 AGRICULTURAL SCIENCE...11 DON'T KNOW........99
348. DID [NAME'S] NATURAL FATHER TAKE DECISION ABOUT [NAME'S] SSS/SECONDARY SCHOOLING?	NO........0 YES........1 DON'T KNOW........99	NO........0 YES........1 DON'T KNOW........99	NO........0 YES........1 DON'T KNOW........99	NO........0 YES........1 DON'T KNOW........99	NO........0 YES........1 DON'T KNOW........99
349. APART FROM YOURSELF (AND [NAME'S] NATURAL FATHER), DID ANYONE ELSE TAKE DECISIONS ABOUT [NAME'S] SSS/SECONDARY SCHOOLING?	NO........0 [?GO TO Q.351] YES........1 DON'T KNOW........99 [?GO TO Q.351]	NO........0 [?GO TO Q.351] YES........1 DON'T KNOW........99 [?GO TO Q.351]	NO........0 [?GO TO Q.351] YES........1 DON'T KNOW........99 [?GO TO Q.351]	NO........0 [?GO TO Q.351] YES........1 DON'T KNOW........99 [?GO TO Q.351]	NO........0 [?GO TO Q.351] YES........1 DON'T KNOW........99 [?GO TO Q.351]

QUESTIONS	CHILD 1	CHILD 2	CHILD 3	CHILD 4	CHILD 5
350 WHAT IS THE RELATIONSHIP OF THIS PERSON TO [NAME]?	[SEE RELATIONSHIP CODES]	[SEE RELATIONSHIP CODES]	[SEE RELATIONSHIP CODES]	[SEE RELATIONSHIP CODES]	[SEE RELATIONSHIP CODES]
351 DID [NAME] EVER ATTEND SSS/SECONDARY SCHOOL?	NO..........0 [?GO TO Q.365] YES..........1	NO..........0 [?GO TO Q.365] YES..........1	NO..........0 [?GO TO Q.365] YES..........1	NO..........0 [?GO TO Q.365] YES..........1	NO..........0 [?GO TO Q.365] YES..........1
352 DID [NAME'S] NATURAL FATHER GIVE ASSISTANCE FOR SSS/SECONDARY SCHOOL?	NO..........0 YES..........1 DON'T KNOW..........99	NO..........0 YES..........1 DON'T KNOW..........99	NO..........0 YES..........1 DON'T KNOW..........99	NO..........0 YES..........1 DON'T KNOW..........99	NO..........0 YES..........1 DON'T KNOW..........99
353 APART FROM YOURSELF (AND [NAME'S] NATURAL FATHER), DID ANYONE ELSE TAKE GIVE ASSISTANCE FOR SSS/SECONDARY SCHOOL?	NO..........0 [?GO TO Q.355] YES..........1 DON'T KNOW..........99 [?GO TO Q.355]	NO..........0 [?GO TO Q.355] YES..........1 DON'T KNOW..........99 [?GO TO Q.355]	NO..........0 [?GO TO Q.355] YES..........1 DON'T KNOW..........99 [?GO TO Q.355]	NO..........0 [?GO TO Q.355] YES..........1 DON'T KNOW..........99 [?GO TO Q.355]	NO..........0 [?GO TO Q.355] YES..........1 DON'T KNOW..........99 [?GO TO Q.355]
354 WHAT IS THE RELATIONSHIP OF THIS PERSON TO [NAME]?	[SEE RELATIONSHIP CODES]	[SEE RELATIONSHIP CODES]	[SEE RELATIONSHIP CODES]	[SEE RELATIONSHIP CODES]	[SEE RELATIONSHIP CODES]
355 DID [NAME REPEAT ANY GRADES OF SSS/SECONDARY SCHOOL?	NO..........0 [?GO TO Q.358] YES..........1 DON'T KNOW..........99 [?GO TO Q.358]	NO..........0 [?GO TO Q.358] YES..........1 DON'T KNOW..........99 [?GO TO Q.358]	NO..........0 [?GO TO Q.358] YES..........1 DON'T KNOW..........99 [?GO TO Q.358]	NO..........0 [?GO TO Q.358] YES..........1 DON'T KNOW..........99 [?GO TO Q.358]	NO..........0 [?GO TO Q.358] YES..........1 DON'T KNOW..........99 [?GO TO Q.358]
356 WHICH GRADES WERE REPEATED?	[SEE SCHOOLING CODES]	[SEE SCHOOLING CODES]	[SEE SCHOOLING CODES]	[SEE SCHOOLING CODES]	[SEE SCHOOLING CODES]
357 WHY DID [NAME] REPEAT THESE GRADES?	[SEE REPEATITION CODES]	[SEE REPEATITION CODES]	[SEE REPEATITION CODES]	[SEE REPEATITION CODES]	[SEE REPEATITION CODES]
358 DURING [NAME'S] SSS/SECONDARY SCHOOL YEARS, HOW MANY SCHOOLS DID NAME ATTEND?	ONE SCHOOL..........1 [?GO TO Q.360] TWO SCHOOLS..........2 THREE SCHOOLS..........3	ONE SCHOOL..........1 [?GO TO Q.360] TWO SCHOOLS..........2 THREE SCHOOLS..........3	ONE SCHOOL..........1 [?GO TO Q.360] TWO SCHOOLS..........2 THREE SCHOOLS..........3	ONE SCHOOL..........1 [?GO TO Q.360] TWO SCHOOLS..........2 THREE SCHOOLS..........3	ONE SCHOOL..........1 [?GO TO Q.360] TWO SCHOOLS..........2 THREE SCHOOLS..........3

QUESTIONS	CHILD 1	CHILD 2	CHILD 3	CHILD 4	CHILD 5
	DON'T KNOW .....99 [?GO TO Q.360]	DON'T KNOW .....99 [?GO TO Q.360]	DON'T KNOW .....99 [?GO TO Q.360]	DON'T KNOW.....99 [?GO TO Q.360]	DON T KNOW.....99 [?GO TO Q.360]
359 WHY DID NAME ATTTEND MORE THAN ONE SCHOOL?	[SEE ATTENDANCE CODES]	[SEE ATTENDANCE CODES]	[SEE ATTENDANCE CODES]	[SEE ATTENDANCE CODES]	[SEE ATTENDANCE CODES]
360 WHAT IS THE NAME OF THE SSS/SECONDARY SCHOOL THAT [NAME] LAST ATTENDED?	NAME OF SCHOOL	NAME OF SCHOOL	NAME OF SCHOOL	NAME OF SCHOOL	NAME OF SCHOOL
361. WHY WAS THIS SECONDARY SCHOOL SELECTED	NEARREST SCHOOL.....1 GOOD PAST RESULTS ON SSCE .....2 GOOD PREPARATION FOR TERTIARY .....3 GOOD PREPARATION FOR OCCUPATION .....4 CHILD'S BECE RESULTS.....5 FINANCIAL CONSIDERATIONS .....6 CHILD'S OWN CHOICE.....7 OTHER(SPECIFY) .....8 DON'T KNOW.....99	NEARREST SCHOOL.....1 GOOD PAST RESULTS ON SSCE .....2 GOOD PREPARATION FOR TERTIARY .....3 GOOD PREPARATION FOR OCCUPATION .....4 CHILD'S BECE RESULTS.....5 FINANCIAL CONSIDERATIONS .....6 CHILD'S OWN CHOICE.....7 OTHER(SPECIFY) .....8 DON'T KNOW.....99	NEARREST SCHOOL.....1 GOOD PAST RESULTS ON SSCE .....2 GOOD PREPARATION FOR TERTIARY .....3 GOOD PREPARATION FOR OCCUPATION.....4 CHILD'S BECE RESULTS.....5 FINANCIAL CONSIDERATIONS.....6 CHILD'S OWN CHOICE.....7 OTHER(SPECIFY) .....8 DON'T KNOW.....99	NEARREST SCHOOL.....1 GOOD PAST RESULTS ON SSCE .....2 GOOD PREPARATION FOR TERTIARY .....3 GOOD PREPARATION FOR OCCUPATION .....4 CHILD'S BECE RESULTS.....5 FINANCIAL CONSIDERATIONS.....6 CHILD'S OWN CHOICE.....7 OTHER(S?ECIFY) .....8 DON'T KNOW.....99	NEARREST SCHOOL.....1 GOOD PAST RESULTS ON SSCE .....2 GOOD PREPARATION FOR TERTIARY .....3 GOOD PREPARATION FOR OCCUPATION.....4 CHILD'S BECE RESULTS.....5 FINANCIAL CONSIDERATIONS.....6 CHILD'S OWN CHOICE.....7 OTHER(SPECIFY) .....8 DON'T KNOW.....99
362. WHEN NAME WAS IN SSS/SECONDARY, DID [NAME] TAKE ANY EXTRA CLASSES OR TUITION OUTSIDE THE SCHOOL HOURS?	NO.....0 [?GO TO Q.365] YES.....1 DON'T KNOW.....99 [?GO TO Q.365]	NO.....0 [?GO TO Q.365] YES .....1 DON'T KNOW.....99 [?GO TO Q.365]	NO.....0 [?GO TO Q.365] YES .....1 DON'T KNOW.....99 [?GO TO Q.365]	NO.....0 [?GO TO Q.365] YES.....1 DON'T KNOW.....99 [?GO TO Q.365]	NO.....0 [?GO TO Q 365] YES .....1 DON'T KNOW.....99 [?GO TO Q.365]
363. AT WHAT SECONDARY SCHOOL LEVEL(S) DID THESE EXTRAA CLASSES TAKE PLACE	[SEE SCHOOLING CODES]	[SEE SCHOOLING CODES]	[SEE SCHOOLING CODES]	[SEE SCHOOLING CODES]	[SEE SCHOOLING CODES]
364 WERE THE CLASSES GIVEN DURING THE TERM, DURING VACATION OR BOTH?	DURING TERM.....1 DURING VACATION.....2 BOTH .....3 DON'T KNOW.....99	DURING TERM.....1 DURING VACATION.....2 BOTH .....3 DON'T KNOW.....99	DURING TERM.....1 DURING VACATION .....2 BOTH .....3 DON'T KNOW.....99	DURING TERM.....1 DURING VACATION .....2 BOTH .....3 DON'T KNOW.....99	DURING TERM.....1 DURING VACATION .....2 BOTH .....3 DON'T KNOW.....99
365 WHAT IS THE HIGHEST GRADE OF SCHOOLING THAT [NAME] HAS COMPLETED?	[SEE SCHOOLING CODES]	[SEE SCHOOLING CODES]	[SEE SCHOOLING CODES]	[SEE SCHOOLING CODES]	[SEE SCHOOLING CODES]

QUESTIONS	CHILD 1	CHILD 2	CHILD 3	CHILD 4	CHILD 5
366 IS [NAME] CURRENTLY ENROLLED?	NO....0 YES....1 [?GO TO Q.369] DON'T KNOW....99 [?GO TO Q.369]	NO....0 YES....1 [?GO TO Q.369] DON'T KNOW....99 [?GO TO Q.369]	NO....0 YES....1 [?GO TO Q.369] DON'T KNOW....99 [?GO TO Q.369]	NO....0 YES....1 [?GO TO Q.369] DON'T KNOW....99 [?GO TO Q.369]	NO....0 YES....1 [?GO TO Q.369] DON'T KNOW....99 [?GO TO Q.369]
367 AT WHAT AGE DID [NAME] LEAVE SCHOOL?	AGE __ __	AGE __ __	AGE __ __	AGE __ __	AGE __ __
368 WHAT ARE THE MAIN REASONS [NEME] IS NO LONGERENROLLED IN SCHOOL?	COULD NOT PAY SCHOOL FEES....1 PHYSICALLY OR MENTALLY DISABLED....2 TOO SICKLY....3 POOR PERFORMANCE....4 LACK OF INTEREST....5 PREGNANCY/CHILD SUPPORT....6 GOT MARRIED....7 NEEDED TO LOOK AFTER OTHER SIBLINGS....8 TOO MANY OTHER DOMESTIC RESPONSIBILITIES....9 NEEDED ON FAMILY FARM OR BUSINESS....10 SCHOOL TOO FAR....11 FAMILY SEES NO ECONOMIC BENEFIT....12 COMPLETED PRIMARY, JSS OR SECONDARY [INTERVIEWER CHECK Q.365]....13 EXPELLED....14 POOR SCHOOL QUALITY....15 OTHER (SPECIFY)....16 DON'T KNOW....99	COULD NOT PAY SCHOOL FEES....1 PHYSICALLY OR MENTALLY DISABLED....2 TOO SICKLY....3 POOR PERFORMANCE....4 LACK OF INTEREST....5 PREGNANCY/CHILD SUPPORT....6 GOT MARRIED....7 NEEDED TO LOOK AFTER OTHER SIBLINGS....8 TOO MANY OTHER DOMESTIC RESPONSIBILITIES....9 NEEDED ON FAMILY FARM OR BUSINESS....10 SCHOOL TOO FAR....11 FAMILY SEES NO ECONOMIC BENEFIT....12 COMPLETED PRIMARY, JSS OR SECONDARY [INTERVIEWER CHECK Q.365]....13 EXPELLED....14 POOR SCHOOL QUALITY....15 OTHER (SPECIFY)....16 DON'T KNOW....99	COULD NOT PAY SCHOOL FEES....1 PHYSICALLY OR MENTALLY DISABLED....2 TOO SICKLY....3 POOR PERFORMANCE....4 LACK OF INTEREST....5 PREGNANCY/CHILD SUPPORT....6 GOT MARRIED....7 NEEDED TO LOOK AFTER OTHER SIBLINGS....8 TOO MANY OTHER DOMESTIC RESPONSIBILITIES....9 NEEDED ON FAMILY FARM OR BUSINESS....10 SCHOOL TOO FAR....11 FAMILY SEES NO ECONOMIC BENEFIT....12 COMPLETED PRIMARY, JSS OR SECONDARY [INTERVIEWER CHECK Q.365]....13 EXPELLED....14 POOR SCHOOL QUALITY....15 OTHER (SPECIFY)....16 DON'T KNOW....99	COULD NOT PAY SCHOOL FEES....1 PHYSICALLY OR MENTALLY DISABLED....2 TOO SICKLY....3 POOR PERFORMANCE....4 LACK OF INTEREST....5 PREGNANCY/CHILD SUPPORT....6 GOT MARRIED....7 NEEDED TO LOOK AFTER OTHER SIBLINGS....8 TOO MANY OTHER DOMESTIC RESPONSIBILITIES....9 NEEDED ON FAMILY FARM OR BUSINESS....10 SCHOOL TOO FAR....11 FAMILY SEES NO ECONOMIC BENEFIT....12 COMPLETED PRIMARY, JSS OR SECONDARY [INTERVIEWER CHECK Q.365]....13 EXPELLED....14 POOR SCHOOL QUALITY....15 OTHER (SPECIFY)....16 DON'T KNOW....99	COULD NOT PAY SCHOOL FEES....1 PHYSICALLY OR MENTALLY DISABLED....2 TOO SICKLY....3 POOR PERFORMANCE....4 LACK OF INTEREST....5 PREGNANCY/CHILD SUPPORT....6 GOT MARRIED....7 NEEDED TO LOOK AFTER OTHER SIBLINGS....8 TOO MANY OTHER DOMESTIC RESPONSIBILITIES....9 NEEDED ON FAMILY FARM OR BUSINESS....10 SCHOOL TOO FAR....11 FAMILY SEES NO ECONOMIC BENEFIT....12 COMPLETED PRIMARY, JSS OR SECONDARY [INTERVIEWER CHECK Q.365]....13 EXPELLED....14 POOR SCHOOL QUALITY....15 OTHER (SPECIFY)....16 DON'T KNOW....99
369 DURING THIS PAST SCHOOL YEAR OR THE LAST YEAR IN WHICH [NAME] WAS IN SCHOOL, DID NAME TAKE EXTRA CLASSES OR TUTORING OUTSIDE OF SCHOOL HOURS?	NO....0 [?GO TO Q.372] YES....1 DON'T KNOW....99 [?GO TO Q.372]	NO....0 [?GO TO Q.372] YES....1 DON'T KNOW....99 [?GO TO Q.372]	NO....0 [?GO TO Q.372] YES....1 DON'T KNOW....99 [?GO TO Q.372]	NO....0 [?GO TO Q.372] YES....1 DON'T KNOW....99 [?GO TO Q.372]	NO....0 [?GO TO Q.372] YES....1 DON'T KNOW....99 [?GO TO Q.372]
370. WERE THE EXTRA CLASSES ORGANISED BY THE SCHOOL?	NO....0 YES....1 DON'T KNOW....99	NO....0 YES....1 DON'T KNOW....99	NO....0 YES....1 DON'T KNOW....99	NO....0 YES....1 DON'T KNOW....99	NO....0 YES....1 DON'T KNOW....99
371. WHAT PAYMENT WAS	NO PAYMENT....0	NO PAYMENT....0	NO PAYMENT....0	NO PAYMENT....0	NO PAYMENT....0

QUESTIONS	CHILD 1	CHILD 2	CHILD 3	CHILD 4	CHILD 5
REQUIRED FOR THE EXTRA CLASSES OR TUTORING?	CEDIS [Total for all classes during that year] DON'T KNOW 999999	CEDIS [Total for all classes during that year] DON'T KNOW 999999	CEDIS [Total for all classes during that year] DON'T KNOW 999999	CEDIS [Total for all classes during that year] DON'T KNOW 999999	CEDIS [Total for all classes during that year] DON'T KNOW 999999
372 WHAT GRADE OS SCHOOLING DO YOU THINK IS ADEQUATE FOR [NAME]?	[SEE SCHOOLING CODES]	[SEE SCHOOLING CODES]	[SEE SCHOOLING CODES]	[SEE SCHOOLING CODES]	[SEE SCHOOLING CODES]
373 [INTERVIEWER: FOR CHILDREN OF SCHOOL AGE OR OLDER, CHECK Q.365. IF [NAME] HAS ALREADY REACHED THE SCHOOL LEVEL MENTIONED IN Q.372, GO TO NEXT CHILD] DO YOU THINK YOU WILL BE ABLE TO LOOK AFTER [NAME] TO THAT LEVEL?	NO..... 0 YES..... 1 DON'T KNOW..... 99	NO..... 0 YES..... 1 DON'T KNOW..... 99	NO..... 0 YES..... 1 DON'T KNOW..... 99	NO..... 0 YES..... 1 DON'T KNOW..... 99	NO..... 0 YES..... 1 DON'T KNOW..... 99
374. WHY DO YOU THINK SO?					

SECTION FOUR: FOSTERED AND OTHER CHILDREN IN THE HOUSEHOLD

400 APART FROM YOUR OWN NATURAL CHILDREN WHOM WE HAVE JUST TALKED ABOUT, DO YOU CARE FOR ANY OTHER CHILDREN WHO LIVE IN THIS HOUSEHOLD?

0 = NO |? END INTERVIEW
1 = YES

INTERVIEWER: COMPARE TO Q.227 AND Q229 AND RECONCILE

QUESTIONS	CHILD 1	CHILD 2	CHILD 3	CHILD 4	CHILD 5
401a. WHAT NAME WAS GIVEN TO YOUR (FIRST, NEXT BABY)? WHAT IS THE CHILD'S OFFICIAL NAME?	NAME OFFICIAL NAME	NAME OFFICIAL NAME	NAME OFFICIAL NAME	NAME OFFICIAL NAME	NAME OFFICIAL NAME
401. IS THE NATURAL FATHER OF [NAME] A CURRENT HUSBAND, A FORMER HUSBAND, ANOTHER RELATIVE, OR OTHER?	CURRENT HUSBAND.......1 FORMER HUSBAND.......2 ANOTHER RELATIVE.......3 OTHER.......4	CURRENT HUSBAND.......1 FORMER HUSBAND.......2 ANOTHER RELATIVE.......3 OTHER.......4	CURRENT HUSBAND.......1 FORMER HUSBAND.......2 ANOTHER RELATIVE.......3 OTHER.......4	CURRENT HUSBAND.......1 FORMER HUSBAND.......2 ANOTHER RELATIVE.......3 OTHER.......4	CURRENT HUSBAND.......1 FORMER HUSBAND.......2 ANOTHER RELATIVE.......3 OTHER.......4
402 IS [NAME] A BOY OF A GIRL?	BOY.......1 GIRL.......2	BOY.......1 GIRL.......2	BOY.......1 GIRL.......2	BOY.......1 GIRL.......2	BOY.......1 GIRL.......2
403 HOW OLD WAS [NAME] AT HIS OR HER LAST BIRTHDAY?	YEARS __ __	YEARS __ __	YEARS __ __	YEARS __ __	YEARS __ __
404 DID [NAME] EVER ATTEND NURSERY OR KINDERGARTEN?	NO.......0 YES.......1	NO.......0 YES.......1	NO.......0 YES.......1	NO.......0 YES.......1	NO.......0 YES.......1
405 APART FROM YOURSELF, WHO IS THE MOST IMPORTANT PERSON WHO EITHER TAKES DECISIONS ABOUT THE SCHOOLING OF [NAME] OR GIVES ASSISTANCE TO [NAME]?	NAME OF DECISION MAKER OR BENEFACTOR	NAME OF DECISION MAKER OR BENEFACTOR	NAME OF DECISION MAKER OR BENEFACTOR [IF NONE, ?GO TO Q.412]	NAME OF DECISION MAKER OR BENEFACTOR [IF NONE, ?GO TO Q.412]	NAME OF DECISION MAKER OR BENEFACTOR [IF NONE, ?GO TO Q.412]

QUESTIONS	CHILD 1 [IF NONE, ?GO TO Q.412]	CHILD 2 [IF NONE, ?GO TO Q.412]	CHILD 3	CHILD 4	CHILD 5
406 WHAT ID THE RELATIONSHIP OF THIS PERSON TO [NAME]?	[SEE RELATIONSHIP CODES]	[SEE RELATIONSHIP CODES]	[SEE RELATIONSHIP CODES]	[SEE RELATIONSHIP CODES]	[SEE RELATIONSHIP CODES]
407 SEX OF THIS PERSON	MALE .... 1 FEMALE 2	MALE .... 1 FEMALE 2	MALE .... 1 FEMALE 2	MALE .... 1 FEMALE 2	MALE .... 1 FEMALE 2
408 AGE OF THIS PERSON	YEARS __ __ DON'T KNOW 99	YEARS __ __ DON'T KNOW 99	YEARS __ __ - DON'T KNOW 99	YEARS __ __ - DON'T KNOW 99	YEARS __ __ - DON'T KNOW 99
409 SCHOOLING OF THIS PERSON	[SEE SCHOOLING CODES]	[SEE SCHOOLING CODES]	[SEE SCHOOLING CODES]	[SEE SCHOOLING CODES]	[SEE SCHOOLING CODES]
410 OCCUPATION OF THIS PERSON	[SEE OCCUPATION CODES]	[SEE OCCUPATION CODES]	[SEE OCCUPATION CODES]	[SEE OCCUPATION CODES]	[SEE OCCUPATION CODES]
411 DOES THIS PERSON TAKE DECISIONS, GIVE ASSISTANCE OR BOTH?	DECISIONS ONLY .... 1 ASSISTANCE ONLY .... 2 BOTH 3	DECISIONS ONLY .... 1 ASSISTANCE ONLY .... 2 BOTH 3	DECISIONS ONLY .... 1 ASSISTANCE ONLY .... 2 BOTH 3	DECISIONS ONLY .... 1 ASSISTANCE ONLY .... 2 BOTH 3	DECISIONS ONLY .... 1 ASSISTANCE ONLY .... 2 BOTH 3
412 DID CHILD, [NAME] EVER ATTEND PRIMARY SCHOOL?	NO .... 0 YES .... 1 [?GO TO Q414] DON'T KNOW .... 99 [?GO TO Q463]	NO .... 0 YES .... 1 [?GO TO Q414] DON'T KNOW .... 99 [?GO TO Q463]	NO .... 0 YES .... 1 [?GO TO Q414] DON'T KNOW .... 99 [?GO TO Q463]	NO .... 0 YES .... 1 [?GO TO Q414] DON'T KNOW .... 99 [?GO TO Q463]	NO .... 0 YES .... 1 [?GO TO Q414] DON'T KNOW .... 99 [?GO TO Q463]
413 WHAT ARE THE MAIN REASONS [NAME] NEVER ATTENDED SCHOOL?	NO MONEY FOR SCHOOL FEES .... 1 PHYSICALLY OR MENTALLY DISABLED .... 2 TOO SICKLY .... 3 NOT ACADEMICALLY SUITED FOR SCHOOL .... 4 NEEDED TO LOOK AFTER YOUNGER SIBLINGS .... 5 TOO MANY OTHER DOMESTIC RESPONSIBILITIES .... 6 NEEDED ON FAMILY FARM	NO MONEY FOR SCHOOL FEES .... 1 PHYSICALLY OR MENTALLY DISABLED .... 2 TOO SICKLY .... 3 NOT ACADEMICALLY SUITED FOR SCHOOL .... 4 NEEDED TO LOOK AFTER YOUNGER SIBLINGS .... 5 TOO MANY OTHER DOMESTIC RESPONSIBILITIES .... 6 NEEDED ON FAMILY FARM	NO MONEY FOR SCHOOL FEES .... 1 PHYSICALLY OR MENTALLY DISABLED .... 2 TOO SICKLY .... 3 NOT ACADEMICALLY SUITED FOR SCHOOL .... 4 NEEDED TO LOOK AFTER YOUNGER SIBLINGS .... 5 TOO MANY OTHER DOMESTIC RESPONSIBILITIES .... 6 NEEDED ON FAMILY FARM	NO MONEY FOR SCHOOL FEES .... 1 PHYSICALLY OR MENTALLY DISABLED .... 2 TOO SICKLY .... 3 NOT ACADEMICALLY SUITED FOR SCHOOL .... 4 NEEDED TO LOOK AFTER YOUNGER SIBLINGS .... 5 TOO MANY OTHER DOMESTIC RESPONSIBILITIES .... 6 NEEDED ON FAMILY FARM	NO MONEY FOR SCHOOL FEES .... 1 PHYSICALLY OR MENTALLY DISABLED .... 2 TOO SICKLY .... 3 NOT ACADEMICALLY SUITED FOR SCHOOL .... 4 NEEDED TO LOOK AFTER YOUNGER SIBLINGS .... 5 TOO MANY OTHER DOMESTIC RESPONSIBILITIES .... 6 NEEDED ON FAMILY FARM

QUESTIONS	CHILD 1	CHILD 2	CHILD 3	CHILD 4	CHILD 5
	OR BUSINESS...7 SCHOOL TOO FAR...8 FAMILY SEES NO ECONOMIC BENEFIT...9 PARENTS DO NOT APPROVE OF SCHOOL...10 NO SCHOOL PLACES AVAILABLE...11 POOR SCHOOL QUALITY...12 KEPT AT HOME FOR BETHROTAL...13 OTHER (SPECIFY) ...14 DON'T KNOW...15 [ALL GO TO Q.372]	OR BUSINESS...7 SCHOOL TOO FAR...8 FAMILY SEES NO ECONOMIC BENEFIT...9 PARENTS DO NOT APPROVE OF SCHOOL...10 NO SCHOOL PLACES AVAILABLE...11 POOR SCHOOL QUALITY...12 KEPT AT HOME FOR BETHROTAL...13 OTHER (SPECIFY) ...14 DON'T KNOW...15 [ALL GO TO Q.372]	OR BUSINESS...7 SCHOOL TOO FAR...8 FAMILY SEES NO ECONOMIC BENEFIT...9 PARENTS DO NOT APPROVE OF SCHOOL...10 NO SCHOOL PLACES AVAILABLE...11 POOR SCHOOL QUALITY...12 KEPT AT HOME FOR BETHROTAL...13 OTHER (SPECIFY) ...14 DON'T KNOW...15 [ALL GO TO Q.372]	OR BUSINESS...7 SCHOOL TOO FAR...8 FAMILY SEES NO ECONOMIC BENEFIT...9 PARENTS DO NOT APPROVE OF SCHOOL...10 NO SCHOOL PLACES AVAILABLE...11 POOR SCHOOL QUALITY...12 KEPT AT HOME FOR BETHROTAL...13 OTHER (SPECIFY) ...14 DON'T KNOW...15 [ALL GO TO Q.372]	OR BUSINESS...7 SCHOOL TOO FAR...8 FAMILY SEES NO ECONOMIC BENEFIT...9 PARENTS DO NOT APPROVE OF SCHOOL...10 NO SCHOOL PLACES AVAILABLE...11 POOR SCHOOL QUALITY...12 KEPT AT HOME FOR BETHROTAL...13 OTHER (SPECIFY) ...14 DON'T KNOW...15 [ALL GO TO Q.372]
414 AT WHAT AGE DID [NAME] ATTEND PRIMARY SCHOOL FOR THE FIRST TIME?	AGE [IF AGE <7 GO TO Q416] DON'T KNOW...99 [? GO TO Q416]	AGE [IF AGE <7 GO TO Q416] DON'T KNOW...99 [? GO TO Q416]	AGE [IF AGE <7 GO TO Q416] DON'T KNOW...99 [? GO TO Q416]	AGE [IF AGE <7 GO TO Q416] DON'T KNOW...99 [? GO TO Q416]	AGE [IF AGE <7 GO TO Q416] DON'T KNOW...99 [? GO TO Q416]
415 WHY DID NAME NOT GO TO PRIMARY SCHOOL AT AGE 6?	TOO SMALL /NOT STRONG ENOUGH...1 NO SCHOOL VACANCIES...2 NEEDED TO LOOK AFTER YOUNG SIBLINGS...3 NEEDED FOR OTHER DOMESTIC RESPONSIBILITIES...4 NEEDED ON FAMILY FARM OR BUSINESS...5 SICKNESS...6 NO MONEY FOR SCHOOL FEES...7 TOO IMMATURE(discipline, intellectual development)...8 OTHER (SPECIFY) ...9 DON'T KNOW...99	TOO SMALL /NOT STRONG ENOUGH...1 NO SCHOOL VACANCIES...2 NEEDED TO LOOK AFTER YOUNG SIBLINGS...3 NEEDED FOR OTHER DOMESTIC RESPONSIBILITIES...4 NEEDED ON FAMILY FARM OR BUSINESS...5 SICKNESS...6 NO MONEY FOR SCHOOL FEES...7 TOO IMMATURE(discipline, intellectual development)...8 OTHER (SPECIFY) ...9 DON'T KNOW...99	TOO SMALL /NOT STRONG ENOUGH...1 NO SCHOOL VACANCIES...2 NEEDED TO LOOK AFTER YOUNG SIBLINGS...3 NEEDED FOR OTHER DOMESTIC RESPONSIBILITIES...4 NEEDED ON FAMILY FARM OR BUSINESS...5 SICKNESS...6 NO MONEY FOR SCHOOL FEES...7 TOO IMMATURE(discipline, intellectual development)...8 OTHER (SPECIFY) ...9 DON'T KNOW...99	TOO SMALL /NOT STRONG ENOUGH...1 NO SCHOOL VACANCIES...2 NEEDED TO LOOK AFTER YOUNG SIBLINGS...3 NEEDED FOR OTHER DOMESTIC RESPONSIBILITIES...4 NEEDED ON FAMILY FARM OR BUSINESS...5 SICKNESS...6 NO MONEY FOR SCHOOL FEES...7 TOO IMMATURE(discipline, intellectual development)...8 OTHER (SPECIFY) ...9 DON'T KNOW...99	TOO SMALL /NOT STRONG ENOUGH...1 NO SCHOOL VACANCIES...2 NEEDED TO LOOK AFTER YOUNG SIBLINGS...3 NEEDED FOR OTHER DOMESTIC RESPONSIBILITIES...4 NEEDED ON FAMILY FARM OR BUSINESS...5 SICKNESS...6 NO MONEY FOR SCHOOL FEES...7 TOO IMMATURE(discipline, intellectual development)...8 OTHER (SPECIFY) ...9 DON'T KNOW...99
416 DID [NAME REPEAT ANY PRIMARY GRADES?	NO...0 [?GO TO 419] YES...1 DON'T KNOW...99 [?GO TO 419]	NO...0 [?GO TO 419] YES...1 DON'T KNOW...99 [?GO TO 419]	NO...0 [?GO TO 419] YES...1 DON'T KNOW...99 [?GO TO 419]	NO...0 [?GO TO 419] YES...1 DON'T KNOW...99 [?GO TO 419]	NO...0 [?GO TO 419] YES...1 DON'T KNOW...99 [?GO TO 419]

QUESTIONS	CHILD 1	CHILD 2	CHILD 3	CHILD 4	CHILD 5
417 WHICH GRADES WERE REPEATED?	[SEE SCHOOLING CODES]	[SEE SCHOOLING CODES]	[SEE SCHOOLING CODES]	[SEE SCHOOLING CODES]	[SEE SCHOOLING CODES]
418 WHY DID [NAME] REPEAT THESE GRADES?	[SEE REPEATITION CODES]	[SEE REPEATITION CODES]	[SEE REPEATITION CODES]	[SEE REPEATITION CODES]	[SEE REPEATITION CODES]
419 DURING [NAME'S] PRIMARY SCHOOL YEARS, HOW MANY SCHOOLS DID NAME ATTEND?	ONE SCHOOL....1 [?GO TO Q.330] TWO SCHOOLS....2 THREE SCHOOLS....3 DON'T KNOW....99 [?GO TO Q.330]	ONE SCHOOL....1 [?GO TO Q.330] TWO SCHOOLS....2 THREE SCHOOLS....3 DON'T KNOW....99 [?GO TO Q.330]	ONE SCHOOL....1 [?GO TO Q.330] TWO SCHOOLS....2 THREE SCHOOLS....3 DON'T KNOW....99 [?GO TO Q.330]	ONE SCHOOL....1 [?GO TO Q.330] TWO SCHOOLS....2 THREE SCHOOLS....3 DON'T KNOW....99 [?GO TO Q.330]	ONE SCHOOL....1 [?GO TO Q.330] TWO SCHOOLS....2 THREE SCHOOLS....3 DON'T KNOW....99 [?GO TO Q.330]
420 WHY DID NAME ATTTEND MORE THAN ONE SCHOOL?	[SEE ATTENDANCE CODES]	[SEE ATTENDANCE CODES]	[SEE ATTENDANCE CODES]	[SEE ATTENDANCE CODES]	[SEE ATTENDANCE CODES]
421 WHAT IS THE NAME OF THE PRIMARY SCHOOL THAT [NAME] LAST ATTENDED?	NAME OF SCHOOL	NAME OF SCHOOL	NAME OF SCHOOL	NAME OF SCHOOL	NAME OF SCHOOL
422 WHEN NAME WAS IN PRIMARY S, DID [NAME] TAKE ANY EXTRA CLASSES OR TUITION OUTSIDE THE SCHOOL HOURS?	NO....0 YES....1 DON'T KNOW....99	NO....0 YES....1 DON'T KNOW....99	NO....0 YES....1 DON'T KNOW....99	NO....0 YES....1 DON'T KNOW....99	NO....0 YES....1 DON'T KNOW....99
423 DID [NAME'S] NATURAL FATHER TAKE DECISION ABOUT JSS/MIDDLE SCHOOL FOR [NAME]?	NO....0 YES....1 DON'T KNOW....99	NO....0 YES....1 DON'T KNOW....99	NO....0 YES....1 DON'T KNOW....99	NO....0 YES....1 DON'T KNOW....99	NO....0 YES....1 DON'T KNOW....99
424 APART FROM YOURSELF (AND [NAME'S] NATURAL FATHER), DID ANYONE ELSE TAKE DECISIONS ABOUT JSS/MIDDLE SCHOOL FOR [NAME]?	NO....0 [?GO TO Q.335] YES....1 DON'T KNOW....99 [?GO TO Q.335]	NO....0 [?GO TO Q.335] YES....1 DON'T KNOW....99 [?GO TO Q.335]	NO....0 [?GO TO Q.335] YES....1 DON'T KNOW....99 [?GO TO Q.335]	NO....0 [?GO TO Q.335] YES....1 DON'T KNOW....99 [?GO TO Q.335]	NO....0 [?GO TO Q.335] YES....1 DON'T KNOW....99 [?GO TO Q.335]
425 WHAT IS THE RELATIONSHIP OF THIS PERSON TO [NAME]?	[SEE RELATIONSHIP CODES]	[SEE RELATIONSHIP CODES]	[SEE RELATIONSHIP CODES]	[SEE RELATIONSHIP CODES]	[SEE RELATIONSHIP CODES]
426 DID [NAME] EVER ATTEND JSS OR MIDDLE SCHOOL?	NO....0 [?GO TO Q.456] YES....1 DON'T KNOW....99 [?GO TO Q.456]	NO....0 [?GO TO Q.456] YES....1 DON'T KNOW....99 [?GO TO Q.456]	NO....0 [?GO TO Q.456] YES....1 DON'T KNOW....99 [?GO TO Q.456]	NO....0 [?GO TO Q.456] YES....1 DON'T KNOW....99 [?GO TO Q.456]	NO....0 [?GO TO Q.456] YES....1 DON'T KNOW....99 [?GO TO Q.456]

QUESTIONS	CHILD 1	CHILD 2	CHILD 3	CHILD 4	CHILD 5
427 DID [NAME'S] NATURAL PARENTS GIVE ASSISTANCE FOR JSS/MIDDLE SCHOOL ?	NO........0 YES........1 DON'T KNOW........99	NO........0 YES........1 DON'T KNOW........99	NO........0 YES........1 DON'T KNOW........99	NO........0 YES........1 DON'T KNOW........99	NO........0 YES........1 DON'T KNOW........99
428 APART FROM YOURSELF, (AND [NAME'S] NATURAL PARENTS), DID ANYONE ELSE TAKE GIVE ASSISTANCE FOR JSS/MIDDLE SCHOOL?	NO........0 [?GO TO Q.430] YES........1 DON'T KNOW........99 [?GO TO Q.430]	NO........0 [?GO TO Q.430] YES........1 DON'T KNOW........99 [?GO TO Q.430]	NO........0 [?GO TO Q.430] YES........1 DON'T KNOW........99 [?GO TO Q.430]	NO........0 [?GO TO Q.430] YES........1 DON'T KNOW........99 [?GO TO Q.430]	NO........0 [?GO TO Q.430] YES........1 DON'T KNOW........99 [?GO TO Q.430]
429 WHAT IS THE RELATIONSHIP OF THIS PERSON TO [NAME]?	[SEE RELATIONSHIP CODES]	[SEE RELATIONSHIP CODES]	[SEE RELATIONSHIP CODES]	[SEE RELATIONSHIP CODES]	[SEE RELATIONSHIP CODES]
430 DID [NAME REPEAT ANY GRADES OF JSS/MIDDLE SCHOOL?	NO........0 [?GO TO 433] YES........1 DON'T KNOW........99 [?GO TO 433]	NO........0 [?GO TO 433] YES........1 DON'T KNOW........99 [?GO TO 433]	NO........0 [?GO TO 433] YES........1 DON'T KNOW........99 [?GO TO 433]	NO........0 [?GO TO 433] YES........1 DON'T KNOW........99 [?GO TO 433]	NO........0 [?GO TO 433] YES........1 DON'T KNOW........99 [?GO TO 433]
431 WHICH GRADES WERE REPEATED?	[SEE SCHOOLING CODES]	[SEE SCHOOLING CODES]	[SEE SCHOOLING CODES]	[SEE SCHOOLING CODES]	[SEE SCHOOLING CODES]
432 WHY DID [NAME] REPEAT THESE GRADES?	[SEE REPEATITION CODES]	[SEE REPEATITION CODES]	[SEE REPEATITION CODES]	[SEE REPEATITION CODES]	[SEE REPEATITION CODES]
433 DURING [NAME'S] JSS/MIDDLE SCHOOL YEARS, HOW MANY SCHOOLS DID NAME ATTEND?	ONE SCHOOL........1 [?GO TO Q.435] TWO SCHOOLS........2 THREE SCHOOLS........3 DON'T KNOW........99 [?GO TO Q.435]	ONE SCHOOL........1 [?GO TO Q.435] TWO SCHOOLS........2 THREE SCHOOLS........3 DON'T KNOW........99 [?GO TO Q.435]	ONE SCHOOL........1 [?GO TO Q.435] TWO SCHOOLS........2 THREE SCHOOLS........3 DON'T KNOW........99 [?GO TO Q.435]	ONE SCHOOL........1 [?GO TO Q.435] TWO SCHOOLS........2 THREE SCHOOLS........3 DON'T KNOW........99 [?GO TO Q.435]	ONE SCHOOL........1 [?GO TO Q.435] TWO SCHOOLS........2 THREE SCHOOLS........3 DON'T KNOW........99 [?GO TO Q.435]
434 WHY DID NAME ATTTEND MORE THAN ONE SCHOOL?	[SEE ATTENDANCE CODES]	[SEE ATTENDANCE CODES]	[SEE ATTENDANCE CODES]	[SEE ATTENDANCE CODES]	[SEE ATTENDANCE CODES]
435 WHAT IS THE NAME OF THE JSS/MIDDLE SCHOOL THAT [NAME] LAST ATTENDED?	NAME OF SCHOOL	NAME OF SCHOOL	NAME OF SCHOOL	NAME OF SCHOOL	NAME OF SCHOOL

QUESTIONS	CHILD 1	CHILD 2	CHILD 3	CHILD 4	CHILD 5
436 WHY WAS THIS JSS/MIDDLE SCHOOL SSELECTED	NEARREST SCHOOL........1 GOOD PAST RESULTS ON BECE ....2 GOOD PREPARATION FOR SECONDARY ....3 FINANCIAL CONSIDERATIONS ....4 LACK OF ALTERNATIVE CHOICES ....5 CHILD'S OWN CHOICE........6 OTHER(SPECIFY) ....7 DON'T KNOW........99	NEARREST SCHOOL........1 GOOD PAST RESULTS ON BECE ....2 GOOD PREPARATION FOR SECONDARY ....3 FINANCIAL CONSIDERATIONS ....4 LACK OF ALTERNATIVE CHOICES........5 CHILD'S OWN CHOICE........6 OTHER(SPECIFY) ....7 DON'T KNOW........99	NEARREST SCHOOL........1 GOOD PAST RESULTS ON BECE ....2 GOOD PREPARATION FOR SECONDARY ....3 FINANCIAL CONSIDERATIONS........4 LACK OF ALTERNATIVE CHOICES ....5 CHILD'S OWN CHOICE........6 OTHER(SPECIFY) ....7 DON'T KNOW........99	NEARREST SCHOOL........1 GOOD PAST RESULTS ON BECE ....2 GOOD PREPARATION FOR SECONDARY ....3 FINANCIAL CONSIDERATIONS........4 LACK OF ALTERNATIVE CHOICES........5 CHILD'S OWN CHOICE........6 OTHER(SPECIFY) ....7 DON'T KNOW........99	NEARREST SCHOOL........1 GOOD PAST RESULTS ON BECE ....2 GOOD PREPARATION FOR SECONDARY ....3 FINANCIAL CONSIDERATIONS ....4 LACK OF ALTERNATIVE CHOICES ....5 CHILD'S OWN CHOICE........6 OTHER(SPECIFY) ....7 DON'T KNOW........99
437 WHEN NAME WAS IN JSS/MIDDLE, DID [NAME] TAKE ANY EXTRA CLASSES OR TUITION OUTSIDE THE SCHOOL HOURS?	NO........0 [?GO TO Q.439] YES........1 DON'T KNOW........99 [?GO TO Q.439]	NO........0 [?GO TO Q.439] YES........1 DON T KNOW........99 [?GO TO Q.439]	NO........0 [?GO TO Q.439] YES........1 DON'T KNOW........99 [?GO TO Q.439]	NO........0 [?GO TO Q.439] YES........1 DON'T KNOW........99 [?GO TO Q.439]	NO........0 [?GO TO Q.439] YES........1 DON'T KNOW........99 [?GO TO Q.439]
438 WHAT WERE THE SUBJESTS FOR THESE EXTRA CLASSES?	GENERAL SCIENCE........1 ENGLISH........2 MATHEMATICS........3 GHANAIAN LANGUAGE........4 FRENCH........5 SOCIAL STUDIES........6 CULTURAL STUDIES........7 LIFE SKILLS........8 VOCATIONAL SKILLS........9 TECHNICAL SKILLS........10 AGRICULTURAL SCIENCE........11 DON'T KNOW........99	GENERAL SCIENCE........1 ENGLISH........2 MATHEMATICS........3 GHANAIAN LANGUAGE........4 FRENCH........5 SOCIAL STUDIES........6 CULTURAL STUDIES........7 LIFE SKILLS........8 VOCATIONAL SKILLS........9 TECHNICAL SKILLS........10 AGRICULTURAL SCIENCE........11 DON'T KNOW........99	GENERAL SCIENCE........1 ENGLISH........2 MATHEMATICS........3 GHANAIAN LANGUAGE........4 FRENCH........5 SOCIAL STUDIES........6 CULTURAL STUDIES........7 LIFE SKILLS........8 VOCATIONAL SKILLS........9 TECHNICAL SKILLS........10 AGRICULTURAL SCIENCE........11 DON'T KNOW........99	GENERAL SCIENCE........1 ENGLISH........2 MATHEMATICS........3 GHANAIAN LANGUAGE........4 FRENCH........5 SOCIAL STUDIES........6 CULTURAL STUDIES........7 LIFE SKILLS........8 VOCATIONAL SKILLS........9 TECHNICAL SKILLS........10 AGRICULTURAL SCIENCE........11 DON'T KNOW........99	GENERAL SCIENCE........1 ENGLISH........2 MATHEMATICS........3 GHANAIAN LANGUAGE........4 FRENCH........5 SOCIAL STUDIES........6 CULTURAL STUDIES........7 LIFE SKILLS........8 VOCATIONAL SKILLS........9 TECHNICAL SKILLS........10 AGRICULTURAL SCIENCE........11 DON'T KNOW........99
439 DID [NAME'S] NATURAL PARENTS TAKE DECISION ABOUT [NAME'S] SSS/SECONDARY SCHOOLING?	NO........0 YES........1 DON'T KNOW........99	NO........0 YES........1 DON'T KNOW........99	NO........0 YES........1 DON'T KNOW........99	NO........0 YES........1 DON'T KNOW........99	NO........0 YES........1 DON'T KNOW........99
440 APART FROM YOURSELF (AND [NAME'S] NATURAL PARENTS), DID ANYONE ELSE TAKE DECISIONS ABOUT [NAME'S] SSS/SECONDARY SCHOOLING?	NO........0 [?GO TO Q.442] YES........1 DON'T KNOW........99 [?GO TO Q.442]	NO........0 [?GO TO Q.442] YES........1 DON'T KNOW........99 [?GO TO Q.442]	NO........0 [?GO TO Q.442] YES........1 DON'T KNOW........99 [?GO TO Q.442]	NO........0 [?GO TO Q.442] YES........1 DON'T KNOW........99 [?GO TO Q.442]	NO........0 [?GO TO Q.442] YES........1 DON'T KNOW........99 [?GO TO Q.442]

QUESTIONS	CHILD 1	CHILD 2	CHILD 3	CHILD 4	CHILD 5
441 WHAT IS THE RELATIONSHIP OF THIS PERSON TO [NAME]?	[SEE RELATIONSHIP CODES]	[SEE RELATIONSHIP CODES]	[SEE RELATIONSHIP CODES]	[SEE RELATIONSHIP CODES]	[SEE RELATIONSHIP CODES]
442 DID [NAME] EVER ATTEND SSS/SECONDARY SCHOOL?	NO....0 [?GO TO Q.365] YES....1	NO....0 [?GO TO Q.365] YES....1	NO....0 [?GO TO Q.365] YES....1	NO....0 [?GO TO Q.365] YES....1	NO....0 [?GO TO Q.365] YES....1
443 DID [NAME'S] NATURAL PARENTS GIVE ASSISTANCE FOR SSS/SECONDARY SCHOOL ?	NO....0 YES....1 DON'T KNOW....99	NO....0 YES....1 DON'T KNOW....99	NO....0 YES....1 DON'T KNOW....99	NO....0 YES....1 DON'T KNOW....99	NO....0 YES....1 DON'T KNOW....99
444 APART FROM YOURSELF (AND [NAME'S] NATURAL PARENTS), DID ANYONE ELSE TAKE GIVE ASSISTANCE FOR SSS/SECONDARY SCHOOL?	NO....0 [?GO TO Q.446] YES....1 DON'T KNOW....99 [?GO TO Q.446]	NO....0 [?GO TO Q.446] YES....1 DON'T KNOW....99 [?GO TO Q.446]	NO....0 [?GO TO Q.446] YES....1 DON'T KNOW....99 [?GO TO Q.446]	NO....0 [?GO TO Q.446] YES....1 DON'T KNOW....99 [?GO TO Q.446]	NO....0 [?GO TO Q.446] YES....1 DON'T KNOW....99 [?GO TO Q.446]
445 WHAT IS THE RELATIONSHIP OF THIS PERSON TO [NAME]?	[SEE RELATIONSHIP CODES]	[SEE RELATIONSHIP CODES]	[SEE RELATIONSHIP CODES]	[SEE RELATIONSHIP CODES]	[SEE RELATIONSHIP CODES]
446 DID [NAME REPEAT ANY GRADES OF SSS/SECONDARY SCHOOL?	NO....0 [?GO TO Q.449] YES....1 DON'T KNOW....99 [?GO TO Q.449]	NO....0 [?GO TO Q.449] YES....1 DON'T KNOW....99 [?GO TO Q.449]	NO....0 [?GO TO Q.449] YES....1 DON'T KNOW....99 [?GO TO Q.449]	NO....0 [?GO TO Q.449] YES....1 DON'T KNOW....99 [?GO TO Q.449]	NO....0 [?GO TO Q.449] YES....1 DON'T KNOW....99 [?GO TO Q.449]
447 WHICH GRADES WERE REPEATED?	[SEE SCHOOLING CODES]	[SEE SCHOOLING CODES]	[SEE SCHOOLING CODES]	[SEE SCHOOLING CODES]	[SEE SCHOOLING CODES]
448 WHY DID [NAME] REPEAT THESE GRADES?	[SEE REPETITION CODES]	[SEE REPETITION CODES]	[SEE REPETITION CODES]	[SEE REPETITION CODES]	[SEE REPETITION CODES]
449 DURING [NAME'S] SSS/SECONDARY SCHOOL YEARS, HOW MANY SCHOOLS DID NAME ATTEND?	ONE SCHOOL....1 [?GO TO Q.451] TWO SCHOOLS....2 THREE SCHOOLS....3 DON'T KNOW....99 [?GO TO Q.451]	ONE SCHOOL....1 [?GO TO Q.451] TWO SCHOOLS....2 THREE SCHOOLS....3 DON'T KNOW....99 [?GO TO Q.451]	ONE SCHOOL....1 [?GO TO Q.451] TWO SCHOOLS....2 THREE SCHOOLS....3 DON'T KNOW....99 [?GO TO Q.451]	ONE SCHOOL....1 [?GO TO Q.451] TWO SCHOOLS....2 THREE SCHOOLS....3 DON'T KNOW....99 [?GO TO Q.451]	ONE SCHOOL....1 [?GO TO Q.451] TWO SCHOOLS....2 THREE SCHOOLS....3 DON'T KNOW....99 [?GO TO Q.451]
450 WHY DID NAME ATTTEND MORE THAN ONE SCHOOL?					

QUESTIONS	CHILD 1	CHILD 2	CHILD 3	CHILD 4	CHILD 5
	[SEE ATTENDANCE CODES]	[SEE ATTENDANCE CODES]	[SEE ATTENDANCE CODES]	[SEE ATTENDANCE CODES]	[SEE ATTENDANCE CODES]
451. WHAT IS THE NAME OF THE SSS/SECONDARY SCHOOL THAT [NAME] LAST ATTENDED?	NAME OF SCHOOL	NAME OF SCHOOL	NAME OF SCHOOL	NAME OF SCHOOL	NAME OF SCHOOL
452. WHY WAS THIS SECONDARY SCHOOL SELECTED?	NEARREST SCHOOL....1 GOOD PAST RESULTS ON SSCE ....2 GOOD PREPARATION FOR TERTIARY....3 GOOD PREPARATION FOR OCCUPATION....4 CHILD'S BECE RESULTS....5 FINANCIAL CONSIDERATIONS....6 CHILD'S OWN CHOICE....7 OTHER(SPECIFY) ....8 DON'T KNOW....99	NEARREST SCHOOL....1 GOOD PAST RESULTS ON SSCE ....2 GOOD PREPARATION FOR TERTIARY....3 GOOD PREPARATION FOR OCCUPATION....4 CHILD'S BECE RESULTS....5 FINANCIAL CONSIDERATIONS....6 CHILD'S OWN CHOICE....7 OTHER(SPECIFY) ....8 DON'T KNOW....99	NEARREST SCHOOL....1 GOOD PAST RESULTS ON SSCE ....2 GOOD PREPARATION FOR TERTIARY....3 GOOD PREPARATION FOR OCCUPATION....4 CHILD'S BECE RESULTS....5 FINANCIAL CONSIDERATIONS....6 CHILD'S OWN CHOICE....7 OTHER(SPECIFY) ....8 DON'T KNOW....99	NEARREST SCHOOL....1 GOOD PAST RESULTS ON SSCE ....2 GOOD PREPARATION FOR TERTIARY....3 GOOD PREPARATION FOR OCCUPATION....4 CHILD'S BECE RESULTS....5 FINANCIAL CONSIDERATIONS....6 CHILD'S OWN CHOICE....7 OTHER(SPECIFY) ....8 DON'T KNOW....99	NEARREST SCHOOL....1 GOOD PAST RESULTS ON SSCE ....2 GOOD PREPARATION FOR TERTIARY....3 GOOD PREPARATION FOR OCCUPATION....4 CHILD'S BECE RESULTS....5 FINANCIAL CONSIDERATIONS....6 CHILD'S OWN CHOICE....7 OTHER(SPECIFY) ....8 DON'T KNOW....99
453. WHEN NAME WAS IN SSS/SECONDARY, DID [NAME] TAKE ANY EXTRA CLASSES OR TUITION OUTSIDE THE SCHOOL HOURS?	NO....0 [?GO TO Q.456] YES....1 DON'T KNOW....99 [?GO TO Q.456]	NO....0 [?GO TO Q.456] YES....1 DON'T KNOW....99 [?GO TO Q.456]	NO....0 [?GO TO Q.456] YES....1 DON'T KNOW....99 [?GO TO Q.456]	NO....0 [?GO TO Q.456] YES....1 DON'T KNOW....99 [?GO TO Q.456]	NO....0 [?GO TO Q.456] YES....1 DON'T KNOW....99 [?GO TO Q.456]
454. AT WHAT SECONDARY SCHOOL LEVEL(S) DID THESE EXTRAA CLASSES TAKE PLACE	[SEE SCHOOLING CODES]	[SEE SCHOOLING CODES]	[SEE SCHOOLING CODES]	[SEE SCHOOLING CODES]	[SEE SCHOOLING CODES]
455. WERE THE CLASSES GIVEN DURING THE TERM, DURING VACATION OR BOTH?	DURING TERM....1 DURING VACATION....2 BOTH....3 DON'T KNOW....99	DURING TERM....1 DURING VACATION....2 BOTH....3 DON'T KNOW....99	DURING TERM....1 DURING VACATION....2 BOTH....3 DON'T KNOW....99	DURING TERM....1 DURING VACATION....2 BOTH....3 DON'T KNOW....99	DURING TERM....1 DURING VACATION....2 BOTH....3 DON'T KNOW....99
456. WHAT IS THE HIGHEST GRADE OF SCHOOLING THAT [NAME] HAS COMPLETED?	[SEE SCHOOLING CODES]	[SEE SCHOOLING CODES]	[SEE SCHOOLING CODES]	[SEE SCHOOLING CODES]	[SEE SCHOOLING CODES]
457. IS [NAME] CURRENTLY ENROLLED?	NO....0 YES....1 [?GO TO Q.460]	NO....0 YES....1 [?GO TO Q.460]	NO....0 YES....1 [?GO TO Q.460]	NO....0 YES....1 [?GO TO Q.460]	NO....0 YES....1 [?GO TO Q.460]
458. AT WHAT AGE DID [NAME] LEAVE SCHOOL?	AGE __ __ DON'T KNOW....99	AGE __ __ DON'T KNOW....99	AGE __ __ DON'T KNOW....99	AGE __ __ DON'T KNOW....99	AGE __ __ DON'T KNOW....99

QUESTIONS	CHILD 1	CHILD 2	CHILD 3	CHILD 4	CHILD 5
459. WHAT ARE THE MAIN REASONS [NEME] IS NO LONGERENROLLED IN SCHOOL?	COULD NOT PAY SCHOOL FEES...1 PHYSICALLY OR MENTALLY DISABLED...2 TOO SICKLY...3 POOR PERFORMANCE...4 LACK OF INTEREST...5 PREGNANCY/CHILD SUPPORT...6 GOT MARRIED...7 NEEDED TO LOOK AFTER OTHER SIBLINGS...8 TOO MANY OTHER DOMESTIC RESPONSIBILITIES...9 NEEDED ON FAMILY FARM OR BUSINESS...10 SCHOOL TOO FAR...11 FAMILY SEES NO ECONOMIC BENEFIT...12 COMPLETED PRIMARY, JSS OR SECONDARY [INTERVIEWER CHECK Q.365]...13 EXPELLED...14 POOR SCHOOL QUALITY...15 OTHER (SPECIFY) ...16 DON'T KNOW...99	COULD NOT PAY SCHOOL FEES...1 PHYSICALLY OR MENTALLY DISABLED...2 TOO SICKLY...3 POOR PERFORMANCE...4 LACK OF INTEREST...5 PREGNANCY/CHILD SUPPORT...6 GOT MARRIED...7 NEEDED TO LOOK AFTER OTHER SIBLINGS...8 TOO MANY OTHER DOMESTIC RESPONSIBILITIES...9 NEEDED ON FAMILY FARM OR BUSINESS...10 SCHOOL TOO FAR...11 FAMILY SEES NO ECONOMIC BENEFIT...12 COMPLETED PRIMARY, JSS OR SECONDARY [INTERVIEWER CHECK Q.365]...13 EXPELLED...14 POOR SCHOOL QUALITY...15 OTHER (SPECIFY) ...16 DON'T KNOW...99	COULD NOT PAY SCHOOL FEES...1 PHYSICALLY OR MENTALLY DISABLED...2 TOO SICKLY...3 POOR PERFORMANCE...4 LACK OF INTEREST...5 PREGNANCY/CHILD SUPPORT...6 GOT MARRIED...7 NEEDED TO LOOK AFTER OTHER SIBLINGS...8 TOO MANY OTHER DOMESTIC RESPONSIBILITIES...9 NEEDED ON FAMILY FARM OR BUSINESS...10 SCHOOL TOO FAR...11 FAMILY SEES NO ECONOMIC BENEFIT...12 COMPLETED PRIMARY, JSS OR SECONDARY [INTERVIEWER CHECK Q.365]...13 EXPELLED...14 POOR SCHOOL QUALITY...15 OTHER (SPECIFY) ...16 DON'T KNOW...99	COULD NOT PAY SCHOOL FEES...1 PHYSICALLY OR MENTALLY DISABLED...2 TOO SICKLY...3 POOR PERFORMANCE...4 LACK OF INTEREST...5 PREGNANCY/CHILD SUPPORT...6 GOT MARRIED...7 NEEDED TO LOOK AFTER OTHER SIBLINGS...8 TOO MANY OTHER DOMESTIC RESPONSIBILITIES...9 NEEDED ON FAMILY FARM OR BUSINESS...10 SCHOOL TOO FAR...11 FAMILY SEES NO ECONOMIC BENEFIT...12 COMPLETED PRIMARY, JSS OR SECONDARY [INTERVIEWER CHECK Q.365]...13 EXPELLED...14 POOR SCHOOL QUALITY...15 OTHER (SPECIFY) ...16 DON'T KNOW...99	COULD NOT PAY SCHOOL FEES...1 PHYSICALLY OR MENTALLY DISABLED...2 TOO SICKLY...3 POOR PERFORMANCE...4 LACK OF INTEREST...5 PREGNANCY/CHILD SUPPORT...6 GOT MARRIED...7 NEEDED TO LOOK AFTER OTHER SIBLINGS...8 TOO MANY OTHER DOMESTIC RESPONSIBILITIES...9 NEEDED ON FAMILY FARM OR BUSINESS...10 SCHOOL TOO FAR...11 FAMILY SEES NO ECONOMIC BENEFIT...12 COMPLETED PRIMARY, JSS OR SECONDARY [INTERVIEWER CHECK Q.365]...13 EXPELLED...14 POOR SCHOOL QUALITY...15 OTHER (SPECIFY) ...16 DON'T KNOW...99
460 DURING THIS PAST SCHOOL YEAR OR THE LAST YEAR IN WHICH [NAME] WAS IN SCHOOL, DID NAME TAKE EXTRA CLASSES OR TUTORING OUTSIDE OF SCHOOL HOURS?	NO...0 [?GO TO Q.463] YES...1 DON'T KNOW...99 [?GO TO Q.463]	NO...0 [?GO TO Q.463] YES...1 DON'T KNOW...99 [?GO TO Q.463]	NO...0 [?GO TO Q.463] YES...1 DON'T KNOW...99 [?GO TO Q.463]	NO...0 [?GO TO Q.463] YES...1 DON'T KNOW...99 [?GO TO Q.463]	NO...0 [?GO TO Q.463] YES...1 DON'T KNOW...99 [?GO TO Q.463]
461 WERE THE EXTRA CLASSES ORGANISED BY THE SCHOOL?	NO...0 YES...1 DON'T KNOW...99	NO...0 YES...1 DON'T KNOW...99	NO...0 YES...1 DON'T KNOW...99	NO...0 YES...1 DON'T KNOW...99	NO...0 YES...1 DON'T KNOW...99
462 WHAT PAYMENT WAS REQUIRED FOR THE EXTRA CLASSES OR TUTORING?	NO PAYMENT...0 CEDIS ____ [Total for all classes during that year] DON'T KNOW...999999	NO PAYMENT...0 CEDIS ____ [Total for all classes during that year] DON'T KNOW...999999	NO PAYMENT...0 CEDIS ____ [Total for all classes during that year] DON'T KNOW...999999	NO PAYMENT...0 CEDIS ____ [Total for all classes during that year] DON'T KNOW...999999	NO PAYMENT...0 CEDIS ____ [Total for all classes during that year] DON'T KNOW...999999
463 WHAT GRADE OS SCHOOLING DO YOU THINK IS ADEQUATE FOR [NAME]?	[SEE SCHOOLING CODES]	[SEE SCHOOLING CODES]	[SEE SCHOOLING CODES]	[SEE SCHOOLING CODES]	[SEE SCHOOLING CODES]

QUESTIONS	CHILD 1	CHILD 2	CHILD 3	CHILD 4	CHILD 5
464 [INTERVIEWER: FOR CHILDREN OF SCHOOL AGE OR OLDER, CHECK Q.456 IF [NAME] HAS ALREADY REACHED THE SCHOOL LEVEL MENTIONED IN Q.463, GO TO NEXT CHILD] DO YOU THINK YOU WILL BE ABLE TO LOOK AFTER [NAME] TO THAT LEVEL?	NO.....0 YES.....1 DON'T KNOW.....99	NO.....0 YES.....1 DON'T KNOW.....99	NO.....0 YES.....1 DON'T KNOW.....99	NO.....0 YES.....1 DON'T KNOW.....99	NO.....0 YES.....1 DON'T KNOW.....99
465. WHY DO YOU THINK SO?					

SCHOOLING CODES						
Pre -1987 Reform Era						
No Schooling	NS					
Primary School	P1	P2	P3	P4	P5	P6
Middle School	M1	M2	M3	M4		
Secondary- Ordinary Level	S1	S2	S3	S4	S5	
Teacher Training College	T1	T2	T3	T4		
Commercial/Vocational/Tech	VT1	VT2	VT3	VT4		
Secondary-Advanced level	A1	A2				
Post-Sec. Teacher Training	PS1	PS2	PS3			
Polytechnic	PT1	PT2	PT3			
Specialist Teacher Training	ST1	ST2	ST3			
University	U1	U2	U3	U4	U5	U6
Post -1987 Reform Era						
No Schooling	NS					
Primary School	P1	P2	P3	P4	P5	P6
Junior Secondary School	JS1	JS2	JS3			
Senior Secondary School	SS1	SS2	SS3			
Commercial/Vocational/Tech	VT1	VT2	VT3	VT4		
Post-Sec. Teacher Training	PS1	PS2	PS3			
Polytechnic	PT1	PT2	PT3			
University	U1	U2	U3	U4	U5	U6

Attendance Codes	Repetition Codes
1=Guardian was transferred	1=Guardian was transferred
2=Could not pay School fees	2=Could not pay School fees
3=Poor performance	3=Poor performance
4=poor school attendance	4=poor school attendance
5=pregnancy	5=pregnancy
6=got married	6=got married
7=was needed to look after younger siblings	7=too sickly
8=school too far away	8=lack of interest in schooling
9=was expelled	9=other (specify)
10=poor school quality	99=Don't know
99=don't know	

Relationship Codes	Occupation Codes
1=Father	1=Farming
2=Mother	2=Fishing/Hunting
3=Spouse	3=Trading/Selling
4=Brother	4=Teaching
5=Sister	5=Dress Making
6=Son	6=Hair Dressing
7=Daughter	7=Craftsmanship(e.g., Basketry, Goldsmith, Etc.
8=Uncle	8=Driving
9=Aunt	9=Construction Business(e.g., Masonry, Carpentry)
10=Male, Other Relation	10=Apprentice
11=Female, Other Relation	11=Other (Specify)
12=Male Friend	99=Don't Know
13=Female Friend	
14=Male Other (e.g., Pastor, Teacher, etc.)	
15=Female Other (e.g., Pastor, Teacher, etc.)	

Appendix B: Tobit Results for Determinants of School Attainment

```
. tobit ed_ch hh_sz hh_res ed_wom mar_wom ed_hus cur_husb
      fa_in_hh sex_ch age_ch ch_in_hh dum_1 dum_2 dum_3,
      ll(0) level(95);

Tobit estimates                          Number of obs=     995
                                         LR chi2(13)   =1221.93
                                         Prob > chi2   = 0.0000
Log likelihood = -2022.6828              Pseudo R2     = 0.2320
------------------------------------------------------------------
       ed_ch |      Coef.   Std. Err.      t    P>|t|
-------------+----------------------------------------------------
       hh_sz |  -.0209573   .0633274    -0.33   0.741
      hh_res |   .3182619   .0776817     4.10   0.000
      ed_wom |   .1077619   .0223165     4.83   0.000
     mar_wom |    .09198    .4044271     0.23   0.820
      ed_hus |   .0012936   .0242129     0.05   0.957
     cur_husb |  -.3971487   .5714106    -0.70   0.487
     fa_in_hh |    .414493    .527589     0.79   0.432
      sex_ch |  -.0467725   .1963591    -0.24   0.812
      age_ch |   .5682608    .01509    37.66   0.000
     ch_in_hh |   .3284672    .270088     1.22   0.224
       dum_1 |  -.2689849   .2794686    -0.96   0.336
       dum_2 |   .5783486   .2850352     2.03   0.043
       dum_3 |   .3675402    .3004      1.22   0.221
       _cons |  -5.203282   .5318327    -9.78   0.000
-------------+----------------------------------------------------
         _se |    2.90232    .075728   (Ancillary parameter)
------------------------------------------------------------------
  Obs. summary: 235  left-censored observations at ed_ch<=0
                760     uncensored observations
```

Appendix C: Marginal Effects of Tobit Regression School Attainment

```
. mfx compute;

Marginal effects after tobit
      y  = Fitted values (predict)
         =  4.4722363
------------------------------------------------------------------
variable |      dy/dx    Std. Err.      z    P>|z|        X
---------+--------------------------------------------------------
   hh_sz |  -.0209573      .06333   -0.33   0.741    5.3819
  hh_res |   .3182619      .07768    4.10   0.000    2.6804
  ed_wom |   .1077619      .02232    4.83   0.000    7.0392
 mar_wom*|     .09198      .40443    0.23   0.820   .759799
  ed_hus |   .0012936      .02421    0.05   0.957   7.98995
cur_husb*|  -.3971487      .57141   -0.70   0.487    .60603
fa_in_hh*|   .414493      .52759    0.79   0.432   .567839
  sex_ch*|  -.0467725      .19636   -0.24   0.812   .517588
  age_ch |   .5682608      .01509   37.66   0.000   13.5819
ch_in_hh*|   .3284672      .27009    1.22   0.224   .764824
   dum_1*|  -.2689849      .27947   -0.96   0.336   .245226
   dum_2*|   .5783486      .28504    2.03   0.042   .236181
   dum_3*|   .3675402       .3004    1.22   0.221   .234171
------------------------------------------------------------------
(*) dy/dx is for discrete change of dummy variable from 0 to 1
```

Appendix D: OLS Regression Results for Desired School Attainment

```
. regress ed_ch_exp hh_sz hh_res ed_wom mar_wom ed_hus
cur_husb fa_in_hh sex_ch age_ch ch_in_hh dum_1 dum_2 dum_3 ;

Number of obs =     911
F( 13,   897) =   41.12
Prob > F      =  0.0000
R-squared     =  0.3734
Adj R-squared =  0.3643
Root MSE      =  3.5308
```

ed_ch_exp	Coef.	Std. Err.	t	P>|t|
hh_sz	-.3656853	.0756705	-4.83	0.000
hh_res	.3664426	.0928844	3.95	0.000
ed_wom	.0665848	.0269529	2.47	0.014
mar_wom	-.458395	.4909373	-0.93	0.351
ed_hus	.072039	.0293657	2.45	0.014
cur_husb	-.4931718	.6701861	-0.74	0.462
fa_in_hh	.9090029	.6093452	1.49	0.136
sex_ch	.5564753	.2357746	2.36	0.018
age_ch	-.0563341	.0175565	-3.21	0.001
ch_in_hh	-.4153813	.3232368	-1.29	0.199
dum_1	.5757868	.3400195	1.69	0.091
dum_2	4.909937	.3450254	14.23	0.000
dum_3	2.983937	.3648278	8.18	0.000
_cons	14.91688	.6274964	23.77	0.000

```
end of do-file

. exit, clear
```

Appendix E: Ordered Probit Results for Schooling Achievement

Ordered probit regression

Number of obs = 61

Wald chi2(20) = 85.01

Prob > chi2 = 0.0000

Pseudo R2 = 0.1784

Log pseudolikelihood = -155.12974

waec1	Coef.	Robust Std. Err.	z	P>|z|
hh_sz	-.1250938	.1144839	-1.09	0.275
ed_wom	-.1848317	.1820963	-1.02	0.310
hh_res	-.1256917	.1850784	-0.68	0.497
mar_wom	-.5813727	.8650211	-0.67	0.502
sex_ch	.5679152	.3220798	1.76	0.078
cur_husb	3.279787	.805535	4.07	0.000
ed_hus	-.2205698	.1636647	-1.35	0.178
ch_in_hh	-.5394099	.3833982	-1.41	0.159
fa_in_hh	-2.640388	1.11557	-2.37	0.018
fa_benf_jss	.2848647	.6457937	0.44	0.659
ot_benf_jss	-.9016339	.6244075	-1.44	0.149
jss_ex_class	.3951289	.3719486	1.06	0.288
ch_rep_jss	-.2216454	.5204372	-0.43	0.670
ch_rep_pri	-1.461258	.46421	-3.15	0.002
no_prim_sc	.0478206	.292909	0.16	0.870
no_jss_sc	1.981282	.5727695	3.46	0.001
ent_age	-.0882283	.2929447	-0.30	0.763
dum_1	1.628333	.4801798	3.39	0.001
dum_2	1.777958	.4858097	3.66	0.000
dum_3	3.098003	.6813566	4.55	0.000

/cut1	-2.110923	2.351725
/cut2	-1.400198	2.243846
/cut3	-1.003783	2.249679
/cut4	-.7372316	2.324189
/cut5	-.3935311	2.336902
/cut6	-.0434105	2.323894
/cut7	.4830751	2.293954
/cut8	.9015804	2.285636
/cut9	.9976653	2.30308
/cut10	1.193895	2.308404
/cut11	1.646217	2.318812
/cut12	1.908626	2.303813
/cut13	2.079863	2.292621
/cut14	2.227753	2.291415
/cut15	2.2997	2.293202
/cut16	2.513496	2.300562
/cut17	2.977192	2.290409
/cut18	3.418657	2.305388
/cut19	3.717103	2.307679
/cut20	3.825856	2.312149
/cut21	3.93811	2.318495
/cut22	4.167106	2.324315
/cut23	4.295754	2.289355
/cut24	4.665591	2.28234
/cut25	4.921139	2.314391
/cut26	5.249588	2.321544