INCOME DISTRIBUTION AND ACCESSIBILTY TO PRIMARY AND SECONDARY SCHOOLS IN NIGERIA

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Zusammenfassung

Die Studie untersucht die Beziehungen zwischen Einkommen, Einkommensun gleichheit und dem Zugang zur Grund- und Oberschule in Nigeria. Sie stellt heraus, dass es einen ungleichen Zugang zur Grundausbildung zwischen armen und reichen Menschen in Nigeria gibt. Das Haushaltseinkommen ist eine wichtige Bestimmungs-größe für den Zugang zur Grundausbildung in Nigeria. Dabei kann eine Zunahme im Zugang zur Grundausbildung das Einkommen in Nigeria schneller umverteilen als eine Zunahme im Haushaltseinkommen. Die Wirkung der Einkommensumverteilung auf den Zugang zur Oberschule ist dabei größer als auf den Zugang zur Grundschule. Diese Studie schlussfolgert, dass eine Politik mit dem Ziel eines Ausgleiches beim Zugang zur Grund- und Oberschule helfen könnte, die Einkommensungleichheit in Nigeria zu reduzieren. Sie empfiehlt neben anderen Dingen Richtlinien und Pro-gramme, die den Zugang zur Grundausbildung in Nigeria erhöhen.

Abstract

This study estimated the relationship between income, income inequality and accessibility to primary and secondary schools in Nigeria. It establishes that there is an unequal access to basic education between the poor and non poor in Nigeria. Household income is an important determinant of access to basic education in Nige-ria. Increase in access to basic education can redistribute income in Nigeria faster than increase in household income. The income redistribution effect of accessibility to sec-ondary school is greater than primary school. This study concludes that a policy aim-ing at equalisation of access to primary and secondary school education might help in reducing income inequality in Nigeria. It recommends among other things, policies and programmes that will increase access to basic education in Nigeria.

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EA   ENUMERATION AREA
EFA   EDUCATION FOR ALL
CWIQ   CORE WELFARE INDICATOR
FCT   FEDERAL CAPITAL TERRITORY
HU   HOUSING UNIT
NAR   NET ENROLMENT RATE
NBS   NATIONAL BUREAU OF STATISTICS
UNECA   UNITED NATION ECONOMIC COMMISION FOR AFRICA
UNICEF   UNITED NATIONS CHILDREN'S FUND
UNESCO UNITED NATIONS EDUCATIONAL, SCIENTIFIC, AND
      CULTURAL ORGANISATION

1   INTRODUCTION

The importance of education to human beings cannot be over emphasized. Education is a human right that should be accorded to all human beings solely by reason of being human (Igbuzor, 2008). There are a lot of international human rights instruments that provide for education as a fundamental human right. These include the Universal Declaration of Human Rights (1948), the International Covenant on Economic, Social and Cultural Rights (1966) and the African Charter on Human and Peoples' Rights (1981). The relationship between education and development is well established such that education is a key index of development. It has been documented that schooling improves productivity, health and reduces negative features of life such as child labour as well as bringing about empowerment (EFA Global Monitoring Report, 2002). Interestingly, the role of education has also been recognised in the discourse on the causation of civil wars. Some empirical evidence shows that civil wars are concentrated in countries with little education and importantly a country with higher percentage of its youth in schools reduces considerably its risk of conflict (Collier, 2000). This is why there has been a lot of emphasis particularly in recent times for all citizens of the world to have access to basic education.

The importance and linkage of education to the development of any society is well known. It is in recognition of this importance that the international community and governments all over the world have made commitments for citizens to have access to education. Meanwhile, it has been documented that across the globe, there are inequalities in educational access and achievement as well as high levels of absolute educational deprivation of both children and adults (Subrahmanian, 2002). Despite the apparent recognition of the positive role of education in human development, improving access to education has been elusive across the globe particularly in the developing countries and specifically Sub-Sahara Africa. Equally, the 'right' to education that has recently been invoked in the lexicon of many development actors concerned with improving access to education is far from being realised and it remains a rhetoric rather than tangible reality(Deng,2003). In order to confront this challenge, the rights based approach, which emphasizes the participation of citizens, has been advocated. Meanwhile, the Declaration of the World Conference on Education for All (WCEFA) which was made in Jomtien, Thailand in 1990 stated clearly in Article 1 that every person – child, Youth and Adult – shall be able to benefit from educational opportunities designed to meet their basic needs. This declaration was reaffirmed at the World

Summit for Children also held in 1990, which stated that all children should have access to basic education by the year 2000. Similarly, the Millennium Developments Goals (MDGs) adopted in September 2000 at the United Nations Millennium Declaration has two of the eight goals devoted to education. They are goal 2 (to achieve universal primary education) and goal 3 (to promote gender equality and empower women).

Over the years, Nigeria has expressed a commitment to education, in the belief that overcoming illiteracy and ignorance will form a basis for accelerated national development. However, regardless of the incontrovertible evidence that education is crucial to the development of the community and the nation, there remain inequalities in access to education in Nigeria. This inaccessibility to basic education can be predicated on low income and high income inequality, which is growing in Nigeria. Location and regional disparities may also be pronounced in distribution of education resources in Nigeria. However, since generalization does not make sense, therefore is essential that the role of the income, income inequality, location and regional effects in explaining accessibility to education be investigated. Hence, this study will examine the effects of these variables in accessibility to primary and secondary education in Nigeria. The rest of the paper is divided in 9 sections. Following introduction is information on household income and schooling in section 2, section 3 examines household income and schooling investment, section 4 deals with education and income distribution, section 5 reviews recent evidence on relationship between income distribution and education, section 6 presents the research methodology, section 7 concentrates on discussion of descriptive results, section 8 presents and discusses econometric results, while section 9 concludes the paper.

2   HOUSEHOLD INCOME AND SCHOOLING

Schooling is widely seen as critical to the development process and poverty alleviation. Recent studies confirm that schooling is particularly important when complex new technologies and market options become available (Rosenzweig,1995). Recently, many countries have done considerable macroeconomic stabilization and market liberalization programs. The returns to schooling will probably increase following such programs. Therefore decisions about who is schooled now are likely to be critical in determining a country's future economic growth and distribution of income. A

rising concern for many in developing countries has been the possibility of greater inequality and reduced intergenerational social mobility under these economic reforms. Part of this concern is that family "dynasties" will be reinforced if children from higher-income households are more likely to receive more and better schooling, and thus reap greater gains from schooling in the future than children from lower-income households. Two different societies with the same income distribution at a point in time may be viewed as having different levels of social welfare if they have different degrees of social mobility. For example, Friedman (1962) argues that a given extent of income inequality that arises in a rigid system in which each family stays in the same position each period may be a cause for more concern than the same degree of income inequality that arises in a fluid system because of the great mobility and dynamic change associated with equality of opportunity. Because of the concern that schooling could perpetuate social immobility and inequality, the recent policy-related literature has considered targeting public school resources toward children from poorer families (van de Walle and Nead 1995 provide examples and references). The concerns in developing countries have been about whether family dynasties are becoming more powerful and whether schooling is targeted toward children from poorer households or if it is instead reinforcing the advantages of children from better-off households. Educational reforms have exacerbated these concerns (see World Bank 1996). The reforms are intended to make schools more efficient, but some of their components (such as the introduction of user charges) may affect children differently depending on their household income.

Researchers have conducted numerous studies of associations between indicators of household income and schooling for other countries. Behrman and Knowles (1997) reviewed 42 studies, covering 21 countries. The studies that are related to African countries are summarized in Table 1. Of the cases for which they can estimate income elasticities, the median elasticity is 0.20. This number suggests that children from higher-income households do better in school than children from poorer households, although the magnitude of the effect is small. The estimates tend to be higher for samples with poorer households, and a number of the studies find small inverse associations between schooling and income. The largest elasticity estimates, those higher than 0.20-are for low-income regions (low-income during the period of the survey): Cote d'Ivoire and Ghana. But these are the only cases in which the estimates exceed 0.20.

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Table 1: Some Past Studies on Income Elasticity of Schooling

Country /Year	Schooling Indicator	Income Elasticity	Source
Cote d'Ivoire (1985-87)	Completed years/current enrolment	0.19	Montgomery and Kouame (1993)
Cote d'Ivoire (1985-87)	School attainment	0.14 to 0.42	Tansel (1997)
Egypt (1980)	Ever attended school/currently attending	-	Cochrane, Mehra and Osheba (1986)
Ghana(1988-89)	Grade attainment, reading, dropping out age	-	Glewwe and Jacoby (1994, 1995)
Ghana(1987)	Ever attended school/school attainment	-	Lavy (1996)
Ghana (1987-89)	School attainment	0.18 to 0.56	Tansel (1997)
Kenya(1994)	Enrolment, Student-teacher ratio	0.04	Deolalikar (1997)
Mali(1981-1982)	Enrolment	0.38	Birdsall and Orivel (1996)
South Africa(1993)	Years of schooling	-0.01 to 0.10	Jacoby (1994)

Source: Adapted from Behrman and Knowles (1999)

3 HOUSEHOLD INCOME AND SCHOOLING INVESTMENT

This discussion is based on how schooling investment might be associated with household income. This discussion points to a number of possible reasons, as well as to the difficulty of disentangling association and causality from cross- sectional data and of determining whether such associations may reflect underlying inefficiencies. If there were no unobserved differences between low- and high-income households, if schooling were purely an investment (with no current consumption as-

pects), if markets worked perfectly, and if the same prices prevailed in all markets, there would be no differences in schooling investments associated with income once controlling for any observed differences in household characteristics. Therefore it is useful to determine why there might be associations between household income and investments in schooling. The general reasons are that household income is proxying for correlated unobserved determinants of child schooling, such as innate ability, preferences, and family connections; household income is proxying for price variations in school inputs; and household income is playing a causal role in the presence of imperfect markets. In addition to the investment aspect of schooling, spending time in school may be a current consumption activity that is associated with household income. Schooling may also affect future consumption (for example, by enriching reading as an adult), but because these effects are obtained in the future, current schooling for such purposes is an investment. If the current consumption of schooling has aspects that are normal goods, ceteris paribus, more household income leads to more schooling for that reason alone.

The relationship between schooling as an investment and household income is multifaceted and more complicated than the relationship between schooling as current consumption and household income. Becker's (1967) lecture on the determinants of human capital investments is a useful starting point for thinking in more detail about possible associations between parental household income and schooling investments. Within this framework schooling investments are made until the private marginal benefits of the investment equal its private marginal costs. If all markets function perfectly, there are no government interventions, and schooling is only an investment, then everyone invests in schooling until the expected rate of return from schooling equals the expected rate of return on alternative investments, regardless of household income. In this case there are no or very few channels through which income may be associated with schooling. But given the range of real-world market imperfections and government interventions, there are many reasons why household income may be associated with schooling, even if schooling is purely an investment. To illustrate, consider what would happen in the presence of market imperfections. There are several explanations, originating in both policy and market failures (as well as reasons that would persist with perfect markets), why household income may be related to the marginal private benefits and costs of schooling investments and thus to schooling investments themselves. Current consumption effects could also generate associa-

tions between income and schooling (with the sign depending on the nature of the consumption effects). Some of these reasons reflect inefficiencies, such as those due to imperfect credit and information markets. Others reflect differing abilities that complement human capital investments or differing prices that are related to household income in different areas given positive transportation costs. Some reflect causal effects of income, such as current consumption demands. And some reflect associations with other variables, such as abilities that are correlated with income and transferred in part inter-generationally. With cross-sectional data of the types that are usually available, the relevance of many of these possibilities and the effect of causality compared with association cannot be sorted out conclusively. Why might marginal private benefits of schooling be associated with household income in the presence of government policies or market imperfections? There are several reasons. First, public policies may affect households with different incomes differently. Policies may favor higher-income households by offering them higher-quality (or more accessible) schooling in response to their greater economic and political power or because prices of some important school inputs may be lower in areas where incomes are higher (for example, teachers may prefer to live and teach in high-income areas and be willing to do so at lower salaries than they would require in low-income areas). However, policies may favor poorer households if programs are designed to reduce inequality or to alleviate poverty by allocating better schooling to poorer households or if prices of some school inputs are lower in low-income areas. Second, households may invest in children's education at home directly through tutoring or indirectly through improvements in their health and nutrition. If markets for these investments (or for financing these investments) are imperfect and the costs are lower for wealthier households, the marginal private benefits of schooling will be higher for wealthier households. For instance, the cost of helping with homework may be less for more-schooled parents than for less-schooled parents, and parental schooling is likely to be positively correlated with household income. Third, children's genetic endowments, for which there are no perfect markets (marriage markets probably serve indirectly as imperfect markets for such endowments), may interact with schooling investments and be correlated with parental endowments that, in turn, are correlated with household income. These relationships arise because such endowments affect income directly and indirectly through parents' human capital stock, including their education. Behrman et al (1996) present evidence, using data on twins, that schooling investments respond positively

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to children's genetic endowments in the United States. Behrman and Taubman (1989) present estimates that variations in such endowments are consistent with most of the variance in child schooling for young adults in the United States. The enormous literature on the associations between adults' schooling and their household earnings is surveyed in Psacharopoulos (1994) and Rosenzweig (1995). Fourth, households may make complementary investments in searching for a job and have contacts that affect their children's job search after completing schooling. If markets for financing such investments are imperfect and the costs are lower for higher-income households, in part because of more attractive possibilities for working in family enterprises and better connections for other employment opportunities, the marginal private benefits would again be higher for such households. Fifth, higher-income households may have better information (in part because of better family enterprise options and better connections), given imperfect markets for information. As a result, they face less uncertainty about schooling investment decisions and, assuming constant risk aversion, therefore have higher expected marginal private benefits than poorer households. Sixth, higher-income households may have lower risk aversion. Therefore in the presence of imperfect insurance markets or insurance with positive private costs, their private incentives would be to invest more in schooling than otherwise identical lower-income households. And lastly, higher-income households may be better able to deal with stochastic events. For example, through their connections (perhaps facilitated by income transfers, including bribes), they may be better able to offset their children's bad performance on admissions examinations than poorer households can. They therefore have private incentives to invest more in schooling than otherwise identical lower income households. The first possibility (involving public policies) relates to endogenous policy choices, which, depending on the mechanism, could favor either higher- or lower- income households (see, for example, Rosenzweig and Wolpin, 1986). In the other six cases, higher-income households have private incentives to invest more in the schooling of otherwise equal children because they cope better with market imperfections, or higher-income households have unobserved characteristics that increase schooling investments and are associated with household income. Why might marginal private costs for human capital investments be associated with household income in the presence of market imperfections? Because of capital market imperfections, particularly for human capital investments (in part because human capital is not recognized as collateral), the marginal private costs for such investments are particu-

larly high for individuals from poorer families who cannot as easily finance these investments themselves.

4   EDUCATION AND INCOME DISTRIBUTION

Becker and Chiswick (1966) demonstrate (in the US) that income inequality is positively correlated with schooling inequality and negatively correlated with the average level of schooling as indicated in Zilcha and Viaene (2003). Later, based on cross-section data from nine countries, Chiswick (1971) shows that earnings inequality increases with educational inequality. Later studies, based on larger sample of countries, support this result showing as well that higher level of schooling reduces income inequality (Chenery and Syrquin, 1975). Though human capital formation is a complex process, economic models have assumed some particular mechanisms describing it. Due to tractability reasons, these processes concentrate on very few parameters (Hanushek, 2002). According to Zilcha and Viaene (2003), the production function framework for human capital exhibits two important properties. First, individuals from below-average human capital families have a greater return to investment in public schooling than those from above-average families. In addition, the effort, and therefore cost, of acquiring human capital for the younger generation is smaller for societies endowed with relatively higher levels of human capital (Fischer and Serra,1996). Second, the importance of parental human capital in forming the human capital of a child has been established (see, e.g., Hanushek, 1986). For example, Glaeser (1994) divides the education's positive effects on economic growth into parts, and concludes that children in families with educated parents obtain a better education than children without support. Also, Burnhill et al. (1990) find that parental education influences entry to higher education in Scotland over and above the influence of parental social class. Lee and Barro (2001) find that family characteristics, such as income and education of parents, enhance student's performance. A reason that is put forward is that parental education elicits more parental involvement (including related private investment) at home.

Gundlach et al. (2001) find that a higher stock of human capital increases the income of the poor, not only through its effect on average income, but also through its effect on the distribution of income. They interpret their findings as suggesting that effective education policies would be a first-best poverty reduction strategy. Ram

(1989) reviews several theoretical frameworks linking the level of schooling and its dispersion with income inequality, such as human capital or dual-economy type models. He finds that these models do not generate any clear theoretical hypotheses about the effect of education on income inequality or absolute poverty. For instance, traditional human capital models of earnings provide two opposing insights with regard to the relationships between education and income distribution. First, holding other things equal, these models imply a partial positive relation between the mean level of schooling and earnings inequality, such that if the mean level of schooling rises, wage of educated workers group relative to wages earned by non-educated worker will rise. But these models also feature a partial positive relation between schooling inequality and earning inequality in that a more equal distribution of schooling leads to a more equal distribution of earnings.

Knight and Sabot (1983) show these effects in a dual economy version of the human capital model. Educational expansion has gain two different effects on the distribution of earnings and thus on overall income inequality as it raised the supply of educated labour. On the one hand, the composition effect (or Kuznets effect) increases the relative size of the group with higher education (and higher earnings) and thus tend to increase inequality. On the other hand the wage compression effect resulting from the relatively greater supply of educated labour reduces inequality, which effect dominates is again unclear and will ultimately depend on the country's level of development, the relative size of the different educational groups, the degree of substitutability between workers with different levels of education, and the wider social, political and economic aspects that affect the structure of relative wages for different educational groups and the demand for labour.

To the extent that formal schooling is a significant component of human capital investment, the recent endogenous growth literature might provide a more conclusive theoretical framework regarding the relationship between educational expansion and income distribution. Tamura (1991) explains income convergence in the developed world by an endogenous growth model with human capital spillovers and heterogeneous agents. In his model, human capital convergence results in income convergence. Human capital convergence can be induced by educational expansion and the promotion of research activity, and because for a given stock of existing knowledge, agents with below average human capital have a higher rate of return to human capital investment. With a more explicit focus on the formal schooling component of

human capital investment, Glomm and Ravikumar (1992) construct an overlapping generations model with heterogeneous agents that provides similar results. The human capital possessed by each individual agent is a function of the parents stock of human capital, the level of schooling acquired, and the quality of education provided, which is modelled as an increasing function of tax revenue and determined endogenously by majority-voting. Further, they assume that the learning technology exhibits at least constant returns to the quality of schools and the parents stock of human capital. While they are mainly interested in comparing the effects of public and private investment in human capital on growth and the distribution of income, they also show that income inequality unambiguously declines over time in an economy with a public education sector where the quality of schooling is homogeneous. Since the growth rate of any agent's income is inversely related to his initial level, income convergence results in their model. By contrast, the endogenous growth model suggested by Luca (1988) does not predict income convergence. In this model, the human capitals supposed to generate internal and external effects. Where the latter means that the average level of education also contributes to the productivity of all other factors of production. However, the recent paper by Gunther (2002) shows that public education, its finances and the way it is undertaken are important determinants of income inequality and growth. In the model human capital simultaneously determines growth and income inequality. In this framework the paper identifies two redistribution mechanisms. On the one hand redistribution occurs by means of direct fiscal redistribution from the well-off to the not so well-off. On the other hand there is redistribution through taxes used for expenditure on public education, which redistributes income by changing the relative wages.

The centrality of education in poverty-reduction policies stems from the belief that education is a powerful equalizer. Human capital is supposed to generate internal and external effects, where the latter means that the average level of education also contributes to the productivity of all other factors of production. Gundlach et al (2001) estimates suggest that a 10% increase in the stock of quality adjusted human capital per worker would increase the average income of the poor by an additional 3.2%. Education seems to improve the income distribution and thus may allow the poor to benefit from growth to the great extent. Accordingly, a focus of economic policies on education in order to reduce poverty and to speed up development appears to be justified (Gundlach et al, 2001). The empirical findings indicate that improving the quality

of education rather than merely expanding access to education should play a crucial role in development strategies. According to Okojie (2002), the important strategy for reducing female poverty is great educational human capital investment in women. This will increase their access to higher paying and higher status job, thereby reducing household as well as female poverty, in addition to other non-market benefit of education. It is widely recognized today that human capital, in particular that acquired through schooling, is a key factor for development. The link is clearly established at the micro-economic level. Individuals with more education receive on average more income (Schultz, 1999). This implies that a more equalitarian distribution of education may constitute an efficient means of reducing irregularity of income distribution (Glomm and Ravikurmar, 1992). Likewise, in the Millennium Development Goals, education is seen as a powerful instrument not only 'for reducing poverty and inequality but also for improving health and social well-being, laying the basis for sustained economic growth, and being essential for building democratic societies and dynamic, globally competitive economies' (United Nations, 2000).

According to Gordon and Catherine (2001), there are several processes that reinforce the effect of education on incomes. Education increases skill levels, which are required for some activities, or contribute to increased productivity, or may be an employment rationing device. Education can set in train processes that increase confidence, establish useful networks or contribute to productive investment (exposure outside the home village, migration, using improved earnings to educate other family members or invest in rural enterprise). Education tends to be closely correlated with other variables that also improve access to higher income employment (pre-existing wealth, useful social networks and confidence). Better educated individuals are more likely to migrate to take up employment opportunities in other areas, as they have greater chances of success than their less-educated or uneducated counterparts. Islam (1997) argues that primary education enhances the productivity of the workforce, whilst secondary education stimulates entrepreneurial activity.

5   RECENT EVIDENCE ON INCOME DISRIBUTION AND EDUCATION

Education is a process through which mankind transmit experience, new findings, and values accumulated over time with the aim of enabling individuals and so-

cieties to make all rounded participation in the development process. In this regard, education plays a key role in enhancing economic progress, improving individual welfare and social development (Hannum and Buchmann, 2005). Available evidence shows that there are several channels through which such effects may arise. For instance education raises labor productivity, increases technological innovation and adaptation, contributes to better health (World Bank, 1993) and gives greater ability to deal with shocks . As a result, education is to date a basic ingredient for creating a competitive and knowledge based economy (Abebaw et al, 2007). Cogneau and Mesple-Somps (2008) have demonstrated that Ghana and Guinea have a lower income inequality compared with Ivory Coast, Ghana, Madagascar and Uganda because of the combination of widespread secondary schooling, low returns to education and low income dualism against agriculture. Nevertheless, it displays marked regional inequality insofar as being born in the Northern part of this country produces a significant restriction of income opportunities. Table 2 indicates that the mean income difference between non farmers with low education and those with high education is 96.

Table 2: Income Differences According to the Level of Education in Selected African Countries [2]

Group	Ivory Coast	Ghana	Guinea	Madagascar	Uganda	Mean
Non Farmer with Low education	158	138	236	173	200	181
Non Farmer with High education	321	199	268	314	285	277
Difference	163	61	32	141	85	96

Source: Computed from Cogneau and Mesple Somps (2008).

In relating education with income distribution, Dercon et al. (2005) indicated that in Ethiopia, public sector workers were generally the best educated. They showed that far more secondary and university graduates were employed there than any other. They also showed that, while wages were increasing by education, the high variance in wages meant that only at the highest level of education were wages demonstrably

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[2] Income is in Purchasing Power Parity terms.

(statistically) different. These findings suggest low or zero returns to education at lower levels of education and higher returns at higher levels. They revealed that wage dispersion between levels of education is far larger in the private sector. In Ethiopia, education seems to have had a substantial effect on allocation between sectors. For example, having completed primary education increases the probability of entering the public sector by 3 to 6 percent relative to having no education. Education is clearly linked with an intention to work in Ethiopia: having at least secondary education strongly reduced the probability of being out of the labour force. Similar evidence is obtained by Cockburn and Dostie (2007) who finds that child time allocation decision among schooling, and work in rural Ethiopia is strongly determined by a combination of household income and wealth, family composition and asset ownership.

Recently Abebaw et al. (2007) demonstrated that the major demand side factors determining schooling progress in rural Ethiopia include poverty, parental education, land and non-land asset ownership, village fixed effects and a child's demographic characteristics. On the supply side, differences in (accessibility) availability of primary and junior schools in the village significantly explain variation in children's primary education achievement. Previous other recent studies (Gitter and Barham, 2007; Gitter and Barham, 2007; Lire, 2005) find several explanations for the inadequate schooling and educational attainments of children particularly in developing countries of Africa, Asia, and Latin America. A common thread running through these studies is that child schooling experience in rural areas is related negatively with household poverty, and child age. Regarding gender effect, most studies just mentioned above find that girls are more likely to get less schooling than boys and that parental education has a positive and significant influence on enrolment and level of educational attainment.

Using a panel data from Tanzania, Burke and Beegle (2004), show that child school attendance is determined by a host of factors including household, child, and community characteristics. But they also noted that there are important gender differences in the factors influencing child schooling attendance and participation. In their analysis of the determinants of primary enrolment in Kenya, Bedi et al. (2004) have shown the key role played by child age, parental education, household wealth and school inputs on   parents' decision to enrol their children.

The recent literature addressing the African growth problems stresses,

amongst other things, that the suboptimal level of public investments in education hampers growth and a more equitable distribution of income (Frankema and Bolt, 2006). The ruling elites face little incentives to direct public resources to education, since education can function as an important vehicle for people to organise themselves and become politically involved. Underinvestment in public education may be part of an intentional strategy to repress political opposition (Frankema and Bolt, 2006). Studies investigating the development of education in Africa indeed report that attainment levels are comparatively low, even when controlled for GDP per capita. It is also reported that the extent of educational inequality in Africa is extraordinary high. Sahn and Stifel (2004) further point out that the extent of educational inequality is significantly greater and that attainment levels are significantly lower in rural areas than in urban areas. Lloyd and Hewett (2004) find that African countries have the lowest primary completion rates of any region in the world. Regarding the levels of primary school completion they argue that "*the poor are the least likely to send their children to school and their children, when enrolled, are most likely to perform poorly and drop out*" Lloyd and Hewett (2004:14). Lloyd and Hewett emphasize that there is a strong interdependence between income levels and educational performance: there is a reciprocal causal relation between educational inequality and income inequality. Frankema and Bolt (2006) agree there is a negative relationship between educational attainment and educational inequality in Africa, but when they distinguish between attainment and distribution they find that attainment levels are much more important in explaining income inequality. Apparently the low levels of attainment in Africa influence income inequality mainly because of the barriers it poses to political and social reforms inhibiting the redistribution of income and resources. The impact of educational inequality on the distribution of direct income-generating capacities (i.e. human capital) only plays a modest role.

6 RESEARCH METHODOLOGY

6.1 Data Source and Collection

The data for this study is generated from Nigeria. Nigeria lies between 4^016^1 and 13^053^1 North Latitude and between 2^040^1 and 14^041^1 East Longitude. It is located in the West Africa bordered on the West by the Republic of Benin, on the north by the Republic of Niger and on the east by the Republic of Cameroon. To the South, Nige-

ria is bordered by approximately 800 kilometres of the Atlantic Ocean, stretching from Badagry in the West to the Rio del Rey in the east. The country also occupies a land area of 923,768 kilometres and the vegetation ranges from mangrove forest on the coast to desert in the far north. The map of Nigeria is presented in Figure 1.

Administration-wise, Nigeria consists of 36 states and a Federal Capital Territory. Each state is further divided into Local Government Areas (LGAs). These are 774 LGAs in the country. Nigeria returned into democratic rule in May 1999 under presidential system of government at federal, state and local government area levels. The federal government comprises of an Executive arm, a bicameral legislative arm and the judiciary. Each state has her own executive arm and house of assembly while each local government has a chairman and a council. The total population of Nigeria according to 2005 census was about 140 million.

The relevant data that are related to income and education are extracted from database obtained from the Nigeria Bureau of Statistics (NBS) Core Welfare Indicator Questionnaire (CWIQ) Survey of 2006. The Surveys ware conducted with assistance from European Union, World Bank, Department for International Development and United Nations Development Programme to ensure good quality of the data generation. The surveys had a national coverage, that is, all the 36 states of the Federation including the Federal Capital Territory of Abuja were covered. The sample design for the survey was a two stage stratified sample design. The first stage was the division of each state into clusters called Enumeration Areas (EA), while the second stage was the division of enumeration areas into housing units. One hundred and twenty (120) EAs were created for each state and 60 EAs for the Federal Capital Territory for the twelve months survey duration. Ten EAs for each state and five EAs for the FCT were covered per month (The survey was conducted through the twelve months period).The Core Welfare Indicator Questionnaire Survey (CWIQ) is designed to collect household data useful in quantitatively and quantitatively profiling the well-being of the population. The 2006 Nigerian CWIQ was a nationwide sample survey conducted to produce welfare indicators for the population at national and sub-national levels, particularly Zones, States and Senatorial Districts. The Survey complements 2004 Nigerian Living Standards Survey (NLSS) by NBS which profiled poverty in the country. Both surveys succinctly provide information for evidence-based policy actions as well as monitoring and evaluation of poverty alleviation projects along the dictates of the MDGs. CWIQ was conducted using the National Integrated Survey of Households

(NISH) design run by the NBS. A representative sample of urban and rural was se-
lected in each of the 36 States and Federal Capital Territory (FCT). A total of 7,740
Enumeration Areas (EAs) were selected with an estimated 77,400 housing units (HU)
nationwide. The education information in the surveys are accessibility to schools,
educational attainment, adult literacy, primary school and secondary school enrol-
ment, types of school attended(private or public), scholarship award, school drop out
and interruption, satisfaction with school, reasons for school dropout and interruption,
education expenditure(tuition fees, cost of book, boarding fees, cost of transportation
to schools.

Figure 1: Map of Nigeria.

6.2   Data analysis

Descriptive statistics and econometric analyses were applied to relevant data
on education from Nigeria. Descriptive statistics such as mean and percentage distri-
bution were employed in the analysis. In econometric analysis, I drew from the
framework of Behrman and Knowles (1999) in relating income with schooling. Their
framework can be stated as

$$S = f(Y) - - - (1)$$

Where S is schooling indicator and Y is mean household income. In their study they used age when starting school, grade passed per year of school, last completed grade and exam score in the last completed grade as measure of schooling indicator. However, these indicators of schooling can be biased by child innate ability. I then used accessibility to primary and secondary school as schooling indicator in the model. As Table 1 has shown different scholars have used various measure of school indicator, but many of these indicators can be biased by child innate ability as pointed out by Behrman and Knowles (1999). Moreover, in order to avoid omitted variable bias, I introduced regional dummy variable into equation (1) to capture regional disparity in accessibility to school in Nigeria, which researchers assume can affect accessibility to education in Nigeria (Aluede, 2006). This regional dummy can also capture the effect of differences in educational policies between the regions. Hence, equation (1) is modified as

$$S = f(Y, R) \quad - \ - \ - \quad (2)$$

Where S is accessibility to school, measured as number of minutes it takes a student to reach the nearest school. The benchmark is 25 minutes[3]. Student that can get to school within this period is said to have access to school, the proportion those students in percentage is taken as school accessibility, the proportion of those that spend more than 25 minutes gives the idea of students without access(CWIQ, 2006)[4]. Y is household mean income measured in Naira, R is region dummy, where southern states are given 1, and zero otherwise. Equation 2 is then estimated for primary and secondary schools.

In estimating the relationship between income distribution and accessibility to schools, i employed Psacharopoulos (1977) approach. He stated his econometric model as

$$GINI = f(EDINEQ, Y_p) - \ - \ - \quad (3)$$

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[3] The mean time of getting to nearest primary and secondary school in Nigeria is 25 minutes (CWIQ, 2006)

[4] It should be noted that there are different measure of accessibility by different scholar as long as it represents the interest of the study. Sackey (2007) used distance that take 30 minutes to student house as measure of accessibility to education in Ghana. Students that spend less than 30 minutes to get to their schools are said to have access. Mainardi (2007) used also physical distance to health facility as measure of accessibility to health care.

Where GINI is Gini coefficient describing income distribution, EDINEQ is educational inequality, as measured by the coefficient of variation of enrolment by school level. In modifying this approach I used Gini for household income for each state. I then constructed accessibility to education for each state. In order to avoid the problem of multicollinearity[5], I have replaced mean income in equation 3 with regional dummy, to have

$$GINI= f(ACCESS, R) - - - (4)$$

While GINI is the Gini coefficient, describing income distribution in each state in Nigeria, ACCESS is the mean of percentage of students with access to school in each state in Nigeria. R is regional dummy as defined previously.

In order to examine the effect of change in mean income on income distribution which Psacharopoulos (1977) was able to estimate with his equation 3, I then estimated a separate equation that relates mean household income with income distribution. This is stated as

$$GINI= f(Yp, R) - - -(5)$$

Where GINI and R are as defined previously. Yp is mean disposable income for each state.

In deciding the equation of best fit, I tried Linear, Power, Semi-log and Exponential functional forms. Econometric, economic and statistical criteria were used to select the equation of best fit.

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[5] The correlation between mean income and accessibility to school is greater than 0.80, they are in fact 0.911 and 0.960 for primary and secondary school respectively. Therefore, the inclusion of these highly positively correlated variables may lead to problem of multicollinearity. However, the correlation between accessibility to school and regional dummy is low, being 0.153 and -0.310 for primary and secondary school respectively. The fact that there is regional disparity in income distribution in Nigeria is a popular knowledge (Oyekale et al., 2006). All these may justify the inclusion of regional dummy in equation 4.

7 RESULTS AND DISCUSSIONS OF DESCRIPTIVE ANALYSIS

7.1 Accessibility to Primary and secondary Education in Nigeria on Regional Basis

The result of analysis of the data indicates that 76% of children in Nigeria had access to primary school education. South-West zone recorded the highest figure of 88.0 per cent, followed by North-Central, 79.7 per cent, while the South-East recorded the lowest rate (60.6 per cent) as presented in Table 3. However, about 47 per cent of Nigerian children had access to secondary school education. The South-West zone recorded the highest figure of 69.4 per cent, followed by South-South with 48.0 per cent access, while the South-East recorded the lowest rate with 32.3 per cent. The fact that there are more accessibility to primary and secondary education in South-West zone in Nigeria can be predicated on the fact that the spread of education start from South-West Zone through missionary (Imahe and Alabi, 2005). Aluede (2006) traced this disparity in education in Nigeria to the history of educational development in the country. He said that the history of educational development in an environment can as well explain the cause of educational disparity in that particular environment. He demonstrated that Western form of education came into Nigeria through the activities of the missionaries. This greatly determined which area was to have early taste of western education and the areas that were not to experience early missionary activities. Thus, Kosemani (1993) observed that the British had set up the colony of Sierra Leone in 1784 as a haven for freed slaves. Later many New World bound slaves who were rescued by British Squadrons were resettled in Sierra Leone. As it turned out, many of those captured were Nigerians mostly Yorubas from the Southwest zone of Nigeria. By 1870, many of them have been converted to Christianity and have become wealthy enough to plan a return to their father land. The effect of this movement back home on Christianity and western education in Nigeria was tremendous. As slave settlers in Sierra Leone, they had received religious, academic and some technical education and a taste of European ways of life. This accident of history brought along with the returnee Nigerians Christianity. This in turn led the early ex-slave settlers in Abeokuta (South West zone) and other areas in West Africa to request for Christian evangelists to come over and 'civilize' the indigenous Africans. The arrival of the missionaries brought with it western education and civilization.

Moreover, in Nigeria, politics brought about disparity in educational development. The political activities of the 1950s to 1960 brought about changes in educational development. The Macpherson Constitution of 1951 sowed the seed of disparity in terms of educational development. It among other things, gave powers to the regional governments to pass laws on education. The result of this was the presentation of a comprehensive proposal for the introduction of free universal and compulsory primary education other wise known as universal Primary Education (UPE) to the Western (South West) House of Assembly by chief Awolowo. The implementation of the programme took effect in the Western Region in January, 1955. Since then the government in South-western Nigeria gives more priority to education than any other zones in the country. The government in South West Nigeria implemented Free Education Policy between 1979 and 1984 and since then the incoming government has been subsiding education in one form or the other (Aluede, 2006).

Other causes of educational disparities apart from history in some countries that experienced colonization are the fact that early development of schooling in specific areas was due to proximity to the coast, to the existence of climatic conditions conducive to missionary settlement and or to the presence of particular local rulers or forms of political authority that were hospitable (for whatever reasons) to the spread of western type of schools (Foster, 1980). The important thing is that the coastal towns, that had European settlements, had early contact with western education and civilization while others who settled in the interior could not have early contact with neither the missionaries nor the colonial masters. This may explain high accessibility to education in coastal South Western Nigeria. The fact is that early centres of educational development have proved to maintain their initial advantages over relatively long periods. That perhaps may explain why Abeokuta and Ondo areas in Yoruba land (South West) tend to maintain their educational lead in Nigeria. This initial disparity in level of educational development has continued to expand since more advanced regions are able to capitalise on their earlier educational traditions (Aluede, 2006). Various authors have isolated ethnicity, economic, cultural factors as factors that are also responsible for disparity in distribution of educational resources in Nigeria (Kosemani, 1992; 1996; Okwonko, 1988)

The lowest accessibility to education in South East poses a challenge to the government of South East zone in increasing accessibility to basic education in the zone. Although there is general opinion that many of the children in the zone take to

business and commerce instead of going to school, it is possible that they are not going to school because they don't have access to them. Alabi (2008) has demonstrated that the relationship between accessibility to basic education and school enrolment is positive, especially for secondary school education in Nigeria, suggesting that the enrolment in schools by children in South East in Nigeria can be lower when compared with the other zones. The lower accessibility to education in South Eastern Nigeria is also an indication of lower priority given by the succeeding government in South eastern zone. This is because the educational opportunities in the South east zone were closed to that of South West before independence (Aluede, 2006).

The consequence of disparity in accessibility to education in Nigeria is a big challenge to balanced growth and development. The economic implication of this disparity is that it has been observed to be bringing about inequality in economic, political and social development as well. It has also been observed that this disparity in educational development can cause disintegration in nations in the course of struggles for positions and power. Alabi and Abu (2008) have attributed pronounced crisis in Niger-Delta to low educational status of the indigenes of the region. Deng (2003) also reported that the war in Southern Sudan can be associated with the way the education opportunities are distributed in the country.

Further analysis indicates that the accessibility to and the satisfaction with basic education in Nigeria are factors that are positively correlated (see table 3). About 58 per cent of the children of primary school age (6 to 11 years old)[6] expressed satisfaction with primary education service. Majority of the children in the South-West (76.8 per cent) were satisfied with their education, while a little over half the number of children in the North-West (58.0 per cent), South-South (54.8 per cent) and North-Central (50.3 per cent) were satisfied. The least satisfaction rate was recorded in the North-East (37.2 per cent). More than half (56.6 per cent) the number of children in secondary schools expressed satisfaction with their secondary education. The level of satisfaction was highest in the South-West (74.8 per cent), followed by North-West (58.2 per cent), while the least satisfaction rate was in the North-East (42.1 per cent). Available data on education in Nigeria indicated that satisfaction with education and enrolment rate are positively related. The correlation coefficients are 0.63 and 0.45 for

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[6] More than 22 million children are 6 to 11 years old in Nigeria, the official primary school age in Nigeria (Huebler, 2005). The official secondary school age in Nigeria is 12 to 17 years.

primary and secondary education (CWIQ, 2006). This implies that satisfaction increases with school enrolment. The trend of satisfaction will affect the attendance in school. Table 3 reveals that the national net enrolment in primary and secondary schools in Nigeria are 61.5% and 45.6% respectively. This is not significantly different from the estimate of Huebler (2005). He reported that only 60.1% of all children of primary school age were attending primary school in Nigeria. He indicated that boys had a higher net attendance rate (NAR) than girls, with 63.7% compared to 56.5% for girls in primary school. For secondary school he estimated that 35.1% of the children were in secondary school. His disaggregated result indicated that the boys' secondary school net attendance rate (NAR) was 37.5% and for girls it was 32.6%. The UNICEF also indicated low enrolment in Nigerian schools. It reported in 2008 that more than 10 million Nigerian children are out of school (Punch, 2008). Out of the 10 million, 4.7 million and 5.3 million are of primary and secondary school age respectively. The report says further that sixty-two per cent of the children out of school are girls. This is one of the reasons for UNICEF to make Nigeria one of the priority countries for girls' education (Huebler, 2005).

Table 3: Accessibility to Primary and Secondary Schools on Regional Basis in Nigeria (%)

Schooling Indicators	North East	North West	North Central	South East	South West	South South	National
Accessibility to Primary School	71.9	76.4	79.7	60.6	88.0	71.7	75.9
Accessibility to Secondary	36.3	44	47.7	32.3	69.4	48.0	47.3
Satisfaction with Primary School	37.2	58.0	50.3	65.1	76.8	54.8	58.3
Satisfaction with Secondary School	42.1	58.2	48.5	53.4	74.8	49.1	56.6
Net Enrolment Primary School	43.7	42.2	72.5	81.6	82.3	76.8	61.5
Net Enrolment Secondary School	25.8	25.4	46.1	59.7	64.9	58.7	45.6

Source: Computed from CWIQ, 2006

7.2   Accessibility to Basic Education in Nigeria on Location Basis

The growth of industries brought about urban and rural settlements in Nigeria. The companies attracted educated men and women as workers in the industries. These workers on their parts struggled to ensure that their children received good education. This brought about a situation where schools in urban areas were well staffed, equipped and financed while rural schools experienced poor staffing, furnishing and financing. In some cases, teachers refused transfer to rural areas (Aluede, 1998). This created gap in schooling in rural and urban areas in Nigeria. The result of analysis of accessibility to primary and secondary education in rural and urban areas in Nigeria indicates that accessibility to primary school education in urban areas is 86.7 per cent, while the rural areas recorded 71.9 per cent (see table 4). The urban-rural gap to secondary education in Nigeria is wider, about 32% gap. The accessibility to secondary education in urban areas is 69.3 per cent, while the accessibility in rural areas is 37.5 per cent. The disparity in satisfaction with education in rural and urban follows the same trend with disparity in satisfaction with primary and secondary education in Nigeria. In the rural areas, 54.5 per cent of primary school children were satisfied with their schools, when compared with 66.7 per cent in the urban areas. Among the students that were satisfied with their secondary schools, 51.6 per cent in the rural are satisfied while 64.9 per cent in the urban areas are satisfied with their secondary schools. Table 4 indicates that the gap between enrolment in primary school in rural and urban areas in Nigeria is 18%, while the gap between enrolment in secondary school in rural and urban areas is about 20% all in favour of urban areas.

This disparity in education system in rural and urban areas has been noted by other scholars. Huebler (2005) also noted that children in urban areas had a higher primary NAR (69.5%) than children in rural areas (55.7%) in Nigeria. The secondary school NAR in urban areas was 46.3% and in rural areas it was 28.7%. A study to determine whether educational discrepancies exist between urban and rural sections of Liberia revealed that only 40% or fewer of rural schools followed the prescribed curricula. They demonstrated that level of teacher qualification was low, a greater problem in rural schools, half of whose teachers had a high school education or less (Coleman and Clark, 1983). Other major findings were that all school facilities were below standards required for effective school programs; a general lack of funding for education existed, and ministry reports verified an imbalance in the central educa-

tional administration, to the detriment of rural schools, primarily because of problems of transportation and communication. Hazans and Trapeznikora (2008) reported that rural location can be an obstacle to accessibility to secondary school education. They showed that the distance between the student and the nearest school location on the average was 2.41km in urban area and that it was 5.87km in rural area. They also indicated that the percentage of secondary school teachers with higher education in rural area was lower than in urban area.

However, the disparity in schooling based on location is contrary to the tenet of philosophy of education in Nigeria. According to the Nigerian Education Policy Document Section 1(4), subsection c 'Every Nigerian child shall have right to equal educational opportunities irrespective of any real or imagined disabilities each according to his or her ability' (National Policy on Education, 2004: 7). The Policy states that 'The philosophy of education therefore is based on the provision of equal access to educational opportunities for citizens of the country at the primary, secondary and tertiary levels both inside and outside the formal school system'. Section 1(7), subsection e also state that 'Universal Basic Education in a variety of forms, depending on needs and possibilities, shall be provided for all citizens' (National Policy on Education, 2004: 9).

Table 4: Accessibility to Basic education in Urban and Rural Areas in Nigeria (%)

	Urban	Rural	Difference
Accessibility to Primary School	86.7	71.9	14.8
Accessibility to Secondary School	69.3	37.5	31.8
Satisfaction with Primary school	66.7	54.5	12.2
Satisfaction with Secondary school	64.9	51.6	13.3
Enrolment in Primary school	74.6	56.6	18.0
Enrolment in secondary school	59.3	39.6	19.7

Source: Computed from CWIQ, 2006

7.3   Accessibility to Basic Education and Income Distribution in Nigeria

Table 5 indicates that the disparity in school enrolment between children from the richest and poorest households is great. In the richest 20% of all households, 82.9% of all children of primary school age attended primary school. In the poorest

20% of all households only two out of five children were in school (primary NAR 40.4%). The table also shows that 63.8% of children from the richest 20% of all households were in secondary school, compared to only 14.6% of children from the poorest 20% of all households. The differences between the accessibility to primary and secondary schools in richest and poorest households are about 43% and 49% respectively in favour of the richest households as indicated in Table 5. This suggests that the school attendance rate is strongly linked to household wealth. The fact that children from the poor households are left out of educational opportunities may pose a great danger to poverty reduction and income inequality in Nigeria. This suggests that that income distribution in favour of rich households will lead to reduction in school enrolment in Nigeria. Since educational inequality is positively related to earning (Chiswick, 1971), the educational inequality in Nigeria may prevent the children of the poor to have access to income earning opportunities that will take them out of poverty.

Some other studies have also shown that there are wealth differences in school enrollment and attainment in most developing countries, but the gaps vary widely across countries. It is argued that that the differences between rich and poor are particularly large (more than 45 percentage points) in several West African countries –Benin, Burkina Faso, Mali, and Senegal. In contrast, small differences are seen in Kenya and Malawi. Why are enrollment rates lower and educational outcomes worse among the poor? Because it is harder for poor children to reach school: the latter tend to be concentrated in cities and areas where the wealthier households reside (UNECA, 2003). For example, in Guinea, the average travel time to the nearest primary school is 47 minutes in rural areas but only 19 minutes in urban areas (Ministère de l'éducation pré-universitaire et de l'éducation civique, 2001). It is also observed that in many African countries, the widespread use of child labour (particularly in rural areas) very often interferes with children's attendance at school. Hence, in these areas, school enrolment and drop-out rates are much worse. In multi-ethnic countries, the drop-out rates among ethnic minorities is also higher than that of dominant groups. Evidence also shows that in many countries, children from the low classes lag behind in educational achievement (UNECA, 2003). There is a high likelihood that access to public goods is skewed towards higher income brackets. For example children not completing primary education in Mali and Morocco are over 30% for the lowest 40% income group, while the top 20% income bracket had a much lower drop out rate, approxi-

mately 10% for Mali and less than 5% for Morocco (UNECA, 2003).

Table 5: Accessibility to primary and secondary education and income distribution in Nigeria

	Richest 20%	Poorest 20%	Difference
Access to Primary School	85.1	42.4	42.7
Access to Secondary School	66.2	17.0	49.2
Enrolment in Primary school	82.9	40.1	42.8
Enrolment in secondary school	63.8	14.6	49.2

Sources: Computed from CWIQ, 2006 and Huebler (2005)

Table 6 goes further to establish the fact that the children from the poor in rural and urban areas have different access to educational opportunities in favour of the poor in urban areas. The Table shows that accessibility to primary education among the urban and rural poor are about 68% and 41% respectively, while accessibility to secondary school among the urban and rural poor are about 45% and 29% respectively. If it is understood that most of the farmers are located in rural areas in Nigeria, the fact that there will continuing cycle of poverty among these poor who are feeding Nigerian teeming population cannot be far-fetched. This confirms that accessibility to basic education is compounded when you are poor and located in the rural area in Nigeria.

In accounting for low educational level of rural dwellers in Nigeria, Abidogun (2008) indicated that many teachers in Nigeria reject posting into the rural areas while those that do not reject the posting treat their presence in such areas as a 'part time assignment'. Yet, effectively educating the rural population that make up over 60% of the country is a necessary precondition for national development. Education is one of the key strategies for rural development since it propels the development of desirable attitudes that are favourable to change and for technical progress. Anyaegbu et al. (2004) thus opined that rural education is the key to rural development and an essential building block of national development; that poverty cannot be eradicated without eliminating illiteracy among the rural populace and without finding a systematic way to raise their level of knowledge. According to Abidogun (2008: 4) there is the 'general consensus that the rate of agricultural development and rural transformation is

directly related to the educational standard of the rural communities'. Such rural education programme will widen rural populace's horizon and predispose them to greater receptivity of new ideas.

Table 6: Accessibility to primary and secondary education among the poor in rural and urban areas in Nigeria

	Urban Poor	Rural Poor
Access to Primary School	68.4	41.2
Access to Secondary School	44.8	29.4
Satisfaction with Primary school	58.2	44.7
Satisfaction with Secondary school	55.9	39.0
Enrolment in Primary school	64.3	49.9
Enrolment in secondary school	44.8	29.4

Source: Computed from CWIQ, 2006

8   RESULTS AND DISCUSSIONS OF ECONOMETRIC ANALYSES

8.1   The Effect of Household Income and Accessibility to Basic Education

In assessing the effect of income on accessibility to education in Nigeria, exponential functional form is selected as lead equation and presented in Table 7. Table 6 indicates that mean household income and regional dummy can explain 73% influence of income on accessibility to primary and secondary education in Nigeria. The F-values are significant at 10%. The regional dummy is not significant, indicating that the difference in accessibility to primary and secondary education in Nigeria on regional basis is not significant. Mean household income is a positive and significant determinant of accessibility to basic education in Nigeria. The coefficients of mean income for primary and secondary school equations are 0.92 and 0.88 respectively, suggesting that increase in mean household income will increase accessibility to primary school more significantly than secondary school. The positive effect of income and accessibility to education estimated in Table 7 has also been reported by Tansel

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(1977) and Montgomery and Kouame (1993) for Cote d d'Ivoire, Deolalikar (1997) for Kenya, and Birdsall and Orivel (1996) for Mali. However, the marginal effects of 0.92 and 0.88 estimated in this study are greater than the average of about 0.20 elasticity estimated for other African countries. The differences in my estimates and other African countries can be predicated on the differences in measure of schooling. This study is based on the accessibility to school, whereas other studies were based on school attendance, student teacher ratio, school attainment etc as indicated in Table 1. Moreover, Behrman and Knowles (1999) pointed out that income elasticity estimate of schooling depends on the mean income of a country.

It is interesting to note that income and regional dummy explain only 73% variation in accessibility to basic education and that constant coefficient is significant in the equation. The economic implication of this is that there are other variables that influence accessibility to basic education that are not included in this model. The case of rural and urban disparity has been discussed in this context on Table 4. The other effect can be from policy perspective. Alabi (2008) has demonstrated that favourable education policy in 1990 resulted in building more primary schools than in 2006 in Nigeria. He also shows that while Nigeria has 116101 classrooms in secondary schools in 2000, this was reduced to 98734 in 2006, due to the fact that the government did not build new classroom and nor repaired the collapsed ones. The concomitant effects of these may be low accessibility and low enrolment in basic education in Nigeria.

Table 7: Effect of Household Income on Accessibility to Basic Education in Nigeria

	Primary	School	Secondary	School
Variable	Coefficient	t-ratio	Coefficient	t-ratio
Constant	337.53	3.23*	502.70	3.35*
Household Income	0.92	3.92*	0.88	3.68*
Region	0.35	1.46	0.128	0.54
F	7.90**		7.67**	
Adjusted R Square	0.73		0.73	

Dependent Variable: Accessibility to Primary and Secondary School (%)

(Exponential Functional Form) * Significant at 5%** Significant at 10%

Source: Author Estimates

8.2 Effect of Accessibility to Basic Education on Income Distribution on in Nigeria

Table 8 shows that accessibility to basic school and regional dummy can explain 99% variation in income inequality in Nigeria. The F-values indicates that the equations are significant at 5%. The regional dummy is negative and significant at 5%. This suggests that income redistribution in favour of Northern region will reduce income inequality in Nigeria. Accessibility to primary and secondary school coefficients are negative and significant, implying that increase in access to primary and secondary schools in Nigeria will reduce income inequality in Nigeria. This finding is in consonance with report of Psacharopolous (1977) that a policy aiming at equalization of access to different level of education might help in reducing income inequality. Becker and Chiswick (1966) also demonstrate (in the US) that income inequality is positively correlated with schooling inequality. Chiswick (1971) study shows that earnings inequality increases with educational inequality. The Chenery and Syrquin (1975) finding supports the fact that higher level of schooling reduces income inequality.

Since accessibility coefficient for secondary school (-1.04) is greater than that of primary school (-1.00), it implies that income inequality in Nigeria can be equalized faster by increasing access to secondary school than by increasing access to primary school. This may be due to the fact that the return to secondary school education in Nigeria is greater that of primary school (Okuwa, 2004).

Table 8: Effect of Accessibility to Basic Education on Income Inequality in Nigeria.

	Primary	School	Secondary	School
Variable	Coefficient	t-ratio	Coefficient	t-ratio
Constant	0.88	109.29*	.72	95.40*
Accessibility	-1.00	-39.91*	-1.04	-21.99*
Region	-0.31	-12.35*	-0.17	3.51*
F	816.39*		247.84*	
Adjusted R Square	0.99		0.99	

Dependent Variable: Income Inequality (GINI Coefficient)

(Linear Functional Form) * Significant at 5%

Source: Author Estimates

8.3   Effect of Mean Household Income on Income Distribution

In Table 9 I estimated the relationship between mean income and income inequality in Nigeria. This done to demonstrate that accessibility to basic education has greater influence in reducing income inequality in Nigeria than mean household income. Table 8 indicates that regional dummy and mean income can explain 85% change in income inequality in Nigeria. The F-value suggests that the equation is significant at 5%. The regional dummy is not significant. The mean income is significant and negatively related to income inequality. This indicates that increase in household income in Nigeria will reduce income inequality in Nigeria. However, this increase has to be in favour of low income households. The economic implication is that economic growth in Nigeria that will lead to increase in disposable income is still desirable in Nigeria. More importantly, when the coefficient of accessibility to basic education (-1.00 for primary and -1.04 for secondary) in Table 7 is compared with the coefficient of mean income in Table 9, the coefficients of accessibility to basic education are greater than the coefficient of mean income. This is in conformity with finding of Psacharopolous (1977). He indicated that while the coefficient of education inequality was 0.18, that of mean income was 0.11.This implies that policy that increase accessibility to basic education will redistribute income faster than policy that increase mean household income

Table 9: Effect of Mean Household Income on Income Inequality in Nigeria

Variable	Coefficient	t-ratio
Constant	0.73	22.14*
Mean Household Income	-0.98	-5.33*
Region	-0.125	-0.68
F	14.59*	
Adjusted R Square	0.85	

Dependent Variable: Income Inequality (GINI Coefficient)

(Linear Functional Form)* Significant at 5%

9   CONCLUSIONS AND RECOMMENDATIONS

This study establishes that there is unequal access to basic education between the poor and non poor in Nigeria. Household income is an important determinant of access to basic education in Nigeria. Increase in access to basic education can redistribute income in Nigeria faster than increase in household income. The income redistribution effect of accessibility to secondary school is greater than primary school. This study concludes that a policy aiming at equalisation of access to primary and secondary school education might help in reducing income inequality in Nigeria.

I can therefore recommend pro-poor growth in Nigeria that will lead to increase income in favour of the poor. This is type of growth that will be beneficial to the poor segment in the society. Poverty alleviation strategies that target mainly the poor can be in this category. The economic intervention agencies should encourage the formation of cooperative societies, through which poor can pull their funds together to increase their scale of their income generation operations.

Policy that will increase access to basic education school should be implemented in Nigeria. This can be in form of free basic education, given of scholarship to the brilliant but indigent students, school subsidy etc. There is need to build more schools and classrooms and rehabilitate the existing ones[7]. There should be a policy and programmes to build more schools in rural areas and closer to where people live, his where the assistance of federal government will be highly needed. Since, the federal government collects more than 50% of revenue in Nigeria; it has to assist the state and local government in building primary and secondary schools. Notwithstanding, as pointed out (World Bank, 2004), even though expanding access is important it is not a sufficient condition to ensure that all children from different backgrounds are enrolled and progress is made in the education system. This means that apart from physical expansion of school infrastructure, context specific policy measures are required to create effective demand for education among poor households and individuals by federal, state and local government.

School buses can be provided at subsidized price for the student by NGOs, Private organisations and philanthropic initiatives. A situation where about 88% and

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[7] About 71% of students in basic schools claim that there was no new building construction in their school in the past five years, while and 61% of the students claim that there was no rehabilitation in their schools in the past five years (CWIQ, 2006).

65% of students of primary and secondary schools respectively trek to their school, for average of about 25 minutes in Nigeria[8] (CWIQ, 2006), may not be conducive for optimum academic performance and retention. A virile Parent Teacher Association (PTA) association can be of help in the provision of some of there basic education resources.

There is also need to stem up allocation to education sector in Nigeria. The present 0.76% of GNP allocated to education sector may not be enough to increase accessibility to education in Nigeria. Moreover, this is far lower than average of about 4.5% of GNP allocated to education sector in Sub-Sahara African countries (Abidogun, 2008)[9], and lower still when compared with average of 6 % of GDP allocated to education sector by OECD countries(Robert et al, 2002). The annual budgetary allocation of about 10% to education sector between 1995 and 2008 is too low when compared with 26%, 21% and 21% in Ghana, Botswana and Kenya respectively (Dike, 2008). In fact, UNESCO recommended 26% budgetary allocation to education sector in order to increase accessibility and enrolment in schools (Abidogun, 2008).

Finally, in promoting basic education in Nigeria, the tuition fees should be moderated to be affordable by the people. Books can be supplied free through Education Trust Fund of the Federal Government (ETF), United Nations agencies, NGO and other donor agencies. The Parent Teachers' Association (PTA), Rotary Club, Lion Clubs and other philanthropic organizations can assist in reducing the cost education in the state by providing scholarship, books and vehicle to the needy schools and students. UNICEF and UNESCO can come to aid of Nigeria in funding school building and rehabilitation. They should also assist in carrying out an updated survey of Nigerian education system. The most recent survey on education in Nigeria was conducted in 2006; this is even part of poverty and welfare survey. A separate survey on education system is urgently needed in Nigeria.

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[8] The available data indicates that about 9% and 26% of students in Nigeria primary and secondary school respectively spend more than one hour to get to their schools

[9] Countries such as South Africa, Kenya and Cote d Ivoire allocate 7.9%, 6.5% and 5.0% of their GNP respectively to their education sector (Dike, 2008). It is also far below the 15% recommended by UNICEF (Abidogun, 2008).

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