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Does the Rural Poor Benefit from Government Spending on Health in Edo State, Nigeria?

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Abstract – **This study aimed at analyzing the incidence of government spending on health in rural areas of Edo State, Nigeria. The study made use of primary and secondary data. The primary data were obtained from 360 households in rural areas of Edo state through the use of well structured questionnaire and interview schedule. The relevant data were analyzed using Benefit Incidence Analysis. The Benefit Incidence Analysis result shows that the poor shared 32 percent, 37 percent and 27 percent of government spending on vaccination, prenatal and postnatal healthcares respectively. The share of the rich in government spending on vaccination, prenatal and postnatal healthcares are 33 percent, 32 percent and 38 percent respectively. This suggests that the rich benefited more than the poor in the share of government spending on vaccination and postnatal healthcares in rural areas of Edo State. However, vaccination programme should place more emphasis on Measles vaccination as the current rate of 42% for Measles is too low to achieve health target in the Millennium Development Goals by 2015. Government should mount a proper education campaign for the populace on the desirability of prenatal and post natal cares in the rural areas of the State. Building more health centers in rural communities where prenatal and postnatal healthcares can be administered is also important. All these are expected to increase the participation rates in prenatal and postnatal healthcare outcomes.**

Keywords – **Benefit Incidence Analysis, Inequality.**

I. Introduction

Health has been identified as an important component of human capital in the sense that investment in health has important direct positive impacts on industrial and agricultural productivity. Empirical evidence has shown that despite the huge oil wealth accrued to the government of Nigeria, the health indicators are very poor particularly in the rural areas where poverty is highest. The demands for immunization for children, pre natal and post natal services are important tools in the health portfolio of the agrarian populace and they help in explaining child and maternal health outcomes respectively. Advanced debate argues that young children, female folk especially those from poor rural households suffer more from ill health. Educated and employed mothers are not only healthy but also have healthier children. Policy concerns and health planning is expected to focus on child immunization as well as maternal health particularly in the rural areas.

It is interesting to note in the light of the rural concentration of absolute poverty that the largest share of most government expenditures over the immediate past century to date has been directed toward the urban area. This dichotomy on targeting the urban rich at the expense of the rural poor has helped to widen inequality between the well to do and the rural poor.

Evidence in the literature has shown that in Nigeria, more than 80 percent of the populace are poor, live in rural communities and are engaged in agriculture (NBS 2005). Majority of these poor lives in the rural areas where access to health facilities is beyond their reach. There is no doubt that rural area face specific problems not encountered in the towns. Many rural dwellers have low incomes and find it difficult to fund or maintain good health (Uzomah and Scholz, 2002).

Other common characteristics of rural areas include: low levels of living, characterized by low incomes, inequality, poor health, and inadequate education, low levels of labour productivity, rural dwellers are engaged in subsistence agricultural production due to lack of capacity for expansion, poor response to agricultural extension due to high rate of illiteracy, high rate of population growth and large families with attendant dependant burden and inaccessibility to health care.

II. History of Child and Maternal Health in Nigeria

The Expanded Programme on Immunization (EPI) was first initiated in 1979 in Nigeria. The evaluated performance of the programme in the early years of operation was very low. For the first five years, there was low national immunization coverage resulting in minimal impact on target diseases. Due to the high premium the Federal Government place on child health and survival, in 1999, a new drive to sustainably reinforce the immunization project began in synergy with the accelerated strategy on polio eradication. This led to the establishment of the National Programme on Immunization (NPI) with a mandate to effectively control vaccine preventable diseases through immunization and the provision of vaccines. Nigeria like many countries in the African region is making efforts to strengthen its health system in general and routine immunization services in particular to reduce disease burden from vaccine preventable diseases (VPDs).

The Primary Health Care Plan (PHC) was launched by the Federal Government of Nigeria in August, 1987. The main objectives of the PHC are: accelerated health care personnel development; improved collection and monitoring of health data; ensured availability of essential drugs in all areas of the country; implementation of an Expanded Programme on Immunization (EPI); improved

nutrition throughout the country; promotion of health awareness; development of a national family health program; and widespread promotion of oral dehydration therapy for treatment of diarrhoea disease in infants and children. Implementation of these programmes was intended to take place mainly through collaboration between the Ministry of Health and participating local government councils, which received direct grants from the Federal Government.

In Nigeria, and indeed other Low Income Countries, maternal mortality is a major cause of death and disability among women of reproductive age. Health information has suggested that as many as 500,000 to 600,000 women die every year from complications related to childbearing. In rural countryside, a lot more of women are injured, some severely, from childbirth complications. Maternal mortality and morbidity adversely affect the health and welfare of children, families, and communities. The major identified causes of maternal mortality include: sepsis, obstructed labor, hemorrhage and abortion

III. Problem Statement

The devastating effects of poor health on child mortality are clear enough. But do poor health conditions in developing countries also harm the productivity of adults? The answer appears to be yes. Studies show that healthier people earn higher wages. For example, daily wage rates in Cote d'Ivoire have been estimated to be about 19 percent lower among men whose health status makes them likely to lose a day of work per month because of illness than daily wage rates of healthier men (Alabi and Adams 2010). Careful statistical methods have shown that a large part of the effect of health on improving family earning is due to productivity differences: it is not just the reverse causality that higher wages are used in part to purchase better health. The crux of the matter is that the children of the rural poor farmers in Edo State, Nigeria are tactically eliminated from having proportionate share of public spending on health mainly due to financial and other causes. Evidence from the literature has shown a lot of work on benefit analysis with respect to the urban areas while very little information is available for the rural sector. This research sets out to make the relevant contributions that might close the gap.

IV. Structure and Access to Health Care in Rural Areas of Edo State, Nigeria

In Nigeria, all three levels of government, the Federal, State and Local Government (LGs), have responsibilities for the provision of health care. The 36 States and 774 LG's are responsible for all financial aspects of Secondary Health Care (SHC) and Primary Health Care (PHC) departments. The National Primary Health Care Development Agency (NPHCDA) provides a source of technical knowledge and expertise on the provision of PHC and monitors PHC delivery. PHC services are the direct responsibility of LGAs which sets out majorly in providing immunization, pre natal and post natal services. Complications are referred to the secondary health care facilities. However the synergy between the two, especially in referral circumstances is weak and undeveloped thus making quality health provision unattainable by the rural dwellers. Although many of the health problems that the rural populace faces could be reduced through improvements at the primary care level, but there are many constraints. Inadequate financing ($2-3 per capita) for the health sector appears to be a major problem. Inaccessibility to health care services is another challenge in rural areas of Edo State, Nigeria. The consequences of low response to measles vaccination, pre natal and post natal consultations are visible in remote areas of the state. The fact that the health conditions of Nigerians are poor and the view that government investment on health is comparably low has led to high incidence of out of pocket expenditure on health care services.

V. A Review of the Literature

5.1 Government spending on health and targeting

Equity issues have always played a significant role in measuring the success or otherwise of basic health delivery. Targeting is here defined as a deliberate attempt to shift the benefits of public expenditures to the poor by means which aim to screen them as the direct beneficiaries. Policies which attempt to identify the poor and target benefits to them can serve important redistributive and safety net roles in market economy (World Bank, 1990; Ravaillon, 2004).

Although government in many instances both in the past and more recently continue to invest in the health sector, incidence analysis suggests that public spending in health and education benefits the non poor disproportionately. For example, Nigeria Demographic and Health Survey (NDHS) reported that only 4.8 percent of children living in households in the poorest quintile are fully vaccinated, while 52.7 percent of children living in households in the richest quintile have received all recommended vaccinations (Alabi and Adams 2010). The national Core Welfare Indicator Questionnaire survey carried out in 2006 reveals that 55.1 percent of the population (2.3 million for Edo State) sampled had access to health services and with marked difference in accessibility across rural and urban areas (NBS, 2006).

As government play a key role in the provision of certain public services, which are increasingly seen to be of critical importance to developing countries, notably, inputs to human capital development such as health care, there is the need to investigate whether the rural poor get a fair share of the distribution of spending on these social services. The government of Nigeria is quite aware that investment on human capital is a sure way to accelerate the current transformation agenda aimed at the development of all the sectors of the economy including agriculture which is the occupation of the rural poor.

Public investment in rural health will potentially lead to higher productivity and subsequently increases in the income of the rural poor. Globally, there is wide

recognition of the importance of health in socioeconomic development of countries in general and those in the developing world in particular (Alabi *et al* 2008). Equity concerns arise in the finance of health services partly because it is commonly assumed that finance equity may be related to equity in access to services which may be related to equity in health capabilities. Therefore, how the expenditure to health sector is allocated to the different groups in the society can determine its impact in reducing rural poverty and increasing agricultural outputs. Moreover, the knowledge of distributional impact of this spending on the rural poor especially the farmers is necessary as the latter form a core of the vulnerable group in Nigeria.

VI. METHODOLOGY

The design of this study is to capture the distribution of benefit of spending on vaccination (concentration index of vaccination) and determine the share of the poor in rural areas of Edo State, Nigeria. It is also expected to reveal the distribution of benefit of spending on prenatal and postnatal (concentration index of prenatal and postnatal) and show the share of the poor in the distribution of this social service in the study area.

6.1 Data collection and procedure

The data for this study was generated from primary and secondary sources. The primary data was obtained from a cross section of households made up of the rich and rural poor who were expected to benefit from public spending. Experienced Enumeration Agents assisted in the distribution and collection of the questionnaires based on predetermined Enumeration Areas by the National Bureau of Statistics. The secondary data were obtained from relevant journals, government publications such as bulletins, annual reports, budgetary estimates and the National Bureau of Statistics (NBS). Two separate instruments, a questionnaire and an interview schedule designed to obtain data from the respondents were used in the survey. The questionnaire was designed to capture household income, expenditure on health (out of pocket payments), government actual expenditure on health geographically disaggregated (urban-rural).

A multistage sampling technique was used in the selection of the respondents for the study. This was based on the geo-political division of the state. Accordingly, three senatorial districts are discernable, viz: Edo South, Edo Central, and Edo North. Edo South is made up of seven (7) local government areas, Edo Central comprises 5 local government areas, while in Edo north we have, 6 LGAs. This gives a total of 18 LGAs.

The first stage was the purposive selection of two (2) LGAs from each senatorial district to give a total of six (6) LGAs. The second stage was the purposive selection of three (3) communities from each of the LGAs giving a total of eighteen (18) communities, excluding the LGA headquarters which were assumed to be urban. This is done in order to concentrate research efforts on rural areas which most of the time are neglected in the distribution of social services. Finally, twenty (20) respondents were randomly selected from each community to make a total of three hundred and sixty (360) respondents.

6.2 Analytical Technique

6The major tool used to determine who benefits from government spending on health in rural areas of Edo State, Nigeria was the Benefit Incidence Analysis.

Benefit Incidence Analysis: The concept of Benefit Incidence Analysis (BIA) is better understood in relation to the concepts of targeting and progressivity of social spending. Since expenditures on health is expected to have a redistributive impact, BIA is centered on assessing whether public spending is progressive, that is, whether it improves the distribution of welfare, proxied by household income or expenditure (Cuenca, 2008). Likewise, BIA shows how the initial "pre-intervention" position of an individual is altered by public spending or how well public spending serves to redistribute resources to the poor (Van de Walle, 1995). Put differently, it estimates how much the income of a household would have to be raised if the household would fully pay for the subsidized public services (Sabir, 2003).

6.3 Measurement of Benefit Incidence Analysis

The challenge of this study was to compare public spending equity on health in randomly selected rural areas of Edo State, Nigeria at different levels of service provision using the approach designed by Shoghik. According to Shoghik (2006), the Benefit Incidence Analysis technique involves a three step methodology aimed to identify the share of government expenditures spent on each quintile. The first step involves aggregating households into quintiles of the population in order to compare how public expenditures are distributed across such groups. Although the most common grouping is by income, households may be classified by consumption because of the high level of shadow economy. Second, the subsidy is then imputed to household quintiles using utilization rates in particular services per quintile. Thirdly, individuals who use public services in effect gain an in kind transfer and benefit incidence analysis measures the distribution of this transfer across the quintile. The mathematical denotation is as follows:

$$X(ij) = E(ij)/E(J)*S(J)$$

Where,

X(ij) is a benefit incidence for (i) income quintile in (j) service (education or health)

E(ij) is a number of people in (i) income quintile using the (j) public service(education or health), E(j) is a total number of beneficiaries in (j) service (education or health), S(j) is the share of the sub sector expenditure in the (j) service(education or health).

The measurement of Benefit Incidence was undertaken using Data Analysis Stata Package (DASP 2.1). The Data Analysis Stata Package is one of the recent methods of measuring benefit incidence. It was developed by Araar Abdelkrim and Jean Yves Duclos in 2007. Among the features of this package is its ability to estimate the most popular statistics (indices, curves) used for the analysis of poverty, inequality social welfare and equity, estimate the differences in such statistics, estimate standard errors and confidence intervals by taking full account of survey

design, support distributive analysis on more than one data base, perform the most popular distributive composition procedures, check for the ethical robustness of distributive comparisons, unify syntax and parameters used across various estimation procedures for distributive analysis.

VII. Results and Discussions

Table 1 reveals that the combined vaccination rate in rural areas of Edo State, Nigeria is 89 percent which upon disaggregation gives vaccination against tuberculosis (BCG), Polio and measles as 67 percent, 63 percent and 42 percent respectively. Although, the national survey from Edo State did not disaggregate the vaccination in the State based on specific vaccines, it however, indicates that the vaccination rate in the state is 85.5 percent, with rural and urban areas having the vaccination rates of 79.6 percent and 92.4 percent respectively (NBS, 2006). This national survey data supports the reported result of 89 percent vaccination rate estimated in Table 1. However, the vaccination rate for measles of 42 percent may have health implication. This implies that less than 50% of children that ought to be vaccinated against measles did so. The low measles vaccination rate among the children in the rural areas of Edo State may account for the frequent outbreak of this disease in recent time.

The share of benefit of the poor from the government spending in vaccination generally in rural areas of Edo State is 31.85 percent, while the middle income group and rich shared 34.82 percent and 33.33 percent respectively. On the specific cases of the vaccines, the poor shared 36.30 percent, 29.65 percent, 42.20 percent from government expenditure on BCG, polio, and measles respectively. The middle income group shared 28.76 percent, 38.61 percent and 26.69 percent from government expenditure on BCG, polio and measles respectively.
The rich shared 34.93 percent, 31.74 percent and 31.11 percent from government expenditure on BCG, polio and measles respectively.

Generally, the poor tend to benefit more than the rich in the share of public spending on vaccination against BCG and measles. This may not be unconnected with the fact that the poor are likely to have more children than the rich. The households with large number of children will definitely need more vaccination.

Table 1: Benefit Incidence of Spending on Vaccination in Edo State

Income Group	Vaccination	BCG	Polio	Measles
Poor	0.3185	0.3630	0.2965	0.42201
Average	0.3482	0.2876	0.3861	0.2669
Rich	0.3333	0.34932	0.3174	0.3111
Total	1.0000	1.0000	1.0000	1.0000
Vaccination rate	0.89	0.67	0.63	0.42

Source: Field Survey, 2010

Table 2 shows the distributional impact of government spending on prenatal and postnatal services in the study area. Only 67 percent and 55 percent of the respondents participated in pre natal and post natal consultation respectively. According to NBS (2005), the reasons for low participation in prenatal consultation cannot be attributed solely to the cost of consultation in Nigeria, because only 55% of them that went for prenatal and postnatal consultation paid, the other reasons given by the women in the survey are that they did not know it was necessary (41%), unavailability of prenatal consultation in their area (18%), long distance to prenatal consultation centre (16%), they cannot afford it (10%) and other reasons (15%) as documented by NBS (2005). The same thing can be said for post natal consultation. The low rate of prenatal and postnatal consultations also have implication for under-five, infant and maternal mortalities in rural areas of Edo State, Nigeria.

The table 2 shows further that the poor enjoyed 36.93 percent of the spending on prenatal care while the share due to the average and the rich were each 31.53 percent respectively. This showed that the poor benefited more than the rich from government spending on prenatal care in the study area. This can be explained with the knowledge that poor households tend to have more number of children than that of the rich. However, in the case of postnatal service, the poor shared less (26.9 percent) than the rich (38.12 percent) in the share of government spending on postnatal care in the study area. Empirical evidence persuaded us to believe that because the rich are more educated than the poor, they are likely to know the importance of childhood health and dangers associated with neglect of attention to the child and the mother (maternal and child health) after birth, which uneducated mother may not take as a serious matter. Other scholars have also reported that the richest benefited more than the poorest on public spending on health in Africa (Demery, 2000; Djindil et al, 2007). Alabi *et al* (2011) have also reported the social selectivity based on income in the use of prenatal and postnatal health care in Nigeria.

Table 2: Benefit Incidence of Spending on Prenatal and Postnatal Consultations in rural areas of Edo State

Income Group	**Prenatal**	**Postnatal**
Poor	0.3693	0.2690
Average	0.3153	0.3498
Rich	0.3153	0.3812
Participation Rate (%)	67%	55%

Source: Field Survey, 2010

VIII. CONCLUSION

This study aimed at analyzing the incidence of government spending on health in rural areas of Edo State. The study shows that the vaccination rates in rural areas of Edo State are 89 percent for general vaccination and 67 percent, 63 percent and 42 percent for BCG, Polio and Measles respectively. Only 67 percent and 55 percent of the respondents participated in pre natal and post natal healthcare respectively in the study area.

The analysis of incidence of benefit from government spending on health indicates that the children from poor households shared 31.85 percent, while the middle income group and rich shared 34.82 percent and 33.33 percent respectively. On the specific cases of the vaccines, the poor shared 36.30 percent, 29.65 percent, 42.20 percent from government expenditure on BCG, polio, and measles respectively. The middle income group shared 28.76 percent, 38.61 percent and 26.69 percent from government expenditure on BCG, polio and measles respectively. The rich shared 34.93 percent, 31.74 percent and 31.11 percent from government expenditure on BCG, polio and measles respectively. The poor enjoyed 36.93 percent of the spending on prenatal care while the share due to the average and the rich are each 31.53 percent respectively. However, in the case of postnatal service, the poor shared less (26.9 percent) than the rich (38.12 percent) in the share of government spending on postnatal care in the study area.

RECOMMENDATIONS

The vaccination rate of 42 percent for Measles is too low to achieve health target in the Millennium Development Goals by 2015. Government may make Measles vaccination as condition for getting further benefit from government. This is called Conditional Cash Transfer. Government should mount a proper education campaign for the rural populace on the desirability of prenatal and post natal care in the rural areas of the State. Building more rural health centers where prenatal and postnatal health cares can be administered will bring the service closer to the rural dwellers and save additional expenses on transportation to urban centres for health consultations.

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