SPATIAL TRENDS AND VARIABILITY OF POVERTY IN DELTA STATE, NIGERIA

Clement Ebizimor*

Stephen Enyinnaya Eluwa**

Abstract

Using a household national sample survey of 2,500 households by the National Bureau of Statistics (NBS), this study examines the spatial trends and variability of poverty among households in the three senatorial districts of Delta State, Nigeria. Findings showed that only 2 % of the respondents had access to personal computers while 40% owned mobile phones. In terms of access to basic infrastructure (clean water, waste disposal, electricity), the central and north senatorial districts were better off compared to the south district. This study suggests more investment by government in information and communication technology and improved sanitation especially in the south senatorial district.

Keywords: Poverty, Delta State, Spatial trends, household infrastructure

* Department of Geography, University of Ibadan, Nigeria

** Faculty of Built Environment, Universiti Teknologi, Malaysia

Introduction

Poverty is a multidimensional, dynamic, complex, gender and location specific phenomenon(World Bank 2000a).Abumere (1998) defines the poor as those with income below the poverty line, lack access to basic services, practical contacts and other forms of support, people in isolated rural areas and the marginal urban zones where essential infrastructures are lacking. According to Ravallion (1994, p. 3), "Poverty can be said to exist in a given society when one or more persons do not attain a level of economic well-being deemed to constitute a reasonable minimum by the standards of that society". The definition provided by Ravallion suggests that the concept of poverty is very much determined by the norms, values and circumstances of the society. The NBS (2011) report indicates that about 112.52 million Nigerians are living below the poverty line, this represents about 68.7 percent of the Nigerian population, despite the fact that the Nigerian economy is growing at 7 percent per annum, the proportion of Nigerians living in poverty is increasing every year and more severely aggravated, the sum of $2.00 per day or its local equivalent of about N300.00 is not enough to provide an escape route out of the poverty circle for a person living in Nigeria. Despite various governments' effort to reduce poverty incidence through poverty alleviation programmes and strategies and the quest to be one of the 20 largest economies by the year 2020, Nigeria continues to be one of the poorest countries in the world. The Nigerian poverty rate stood at 69 percent in 2010, while 93.9 percent Nigerians considered themselves to be poor in 2010 as against 75.5 percent recorded in 2004, NBS (2011).Between 1990 and 2011, according to the latest United Nations Reports, food prices are back on the rise, causing an increase in global poverty for the first time in nearly two decades.

One of the major challenges for targeting the poor lies in the spatial complexity of the problem, (the space effect on poverty transition and variation). Poverty variations are influenced by living in a place (geographical location, accessibility, availability of resources, and so on) and socio-cultural factors (changes in household composition, employment status, educational status, ownership of assets, human capability, remittances, health and disability status). Each of these parameters has a spatial dimension which can be explained; building our understanding of possible moderators of improving livelihoods and exit from poverty, have a better understanding of the spatial dynamics, effect, pattern, trend and duration of poverty transition experienced in both rural and urban areas. Investigating poverty dynamics necessarily begins with the

questions: How is poverty defined and what are the dynamics of poverty transition? The dynamic nature of poverty adds an important aspect to the analysis of poverty as some households experience poverty for long periods of time, while others only experience it on a temporary basis, there are considerable flows into and out of poverty pool (Baulch&Hoddinott, 2000). There is a popular perception that poverty in both developing and industrialized countries is a structural, long-term phenomenon (Baulch, 1998), but the literature indicates that poverty is a temporary phenomenon with a high percentage of households shown to have moved into poverty due to temporary shocks (such as illness, loss of job, loss of household head, and so on) which could be reversed. The "trigger events" or spatial and socio-cultural dynamics include geographic location, space effect on poverty transition, accessibility and availability of resources, changes in household composition, employment status, educational status, ownership of assets, human capability, remittances, health and disability status. Poverty dynamics enables a better understanding of the extent of poverty transition over space and time, and a knowledge of the factors associated with movements in and out of poverty among the vulnerable groups.

Over the years, different national poverty profiles have been constructed for example (World Bank 1996, NHDR 1996 and 1998, FOS 1999) telling who the poor are, how they are, where they live, why they are poor, what socioeconomic groups they belong and their characteristics, transition dynamics experienced, and the participation of the poor themselves in activities that would "push" or "pull" them out of poverty is the key to poverty transition particularly, exit from poverty.

Literature review

Spatial Distribution and Variability

The poverty mapping studies conducted in Kenya, Uganda, Vietnam, Sri Lanka and several other developing countries reported spatial variability of poverty across geographic domains (Baulch, 2002a,). The variability in spatial distribution of poverty is related to its geographic determinants such as differences in geographic and agro-climatic conditions, infrastructure, good road networks, access to market and public facilities, information technology, the presence or absence of natural resources such as forests, crude oil, natural gas, solid minerals or water bodies

and socio-cultural and historical factors.The World Bank reports focused mainly on national and regional levels with less attention on local level poverty dynamics (community, household, individual). There is lack of analysis at the micro level to fill the gap in knowledge on why and how spatial disparities exist and why people in certain places remain poor for periods of time (i.e. time and space).

Poverty Transition and Vulnerability

There is limited but growing literature on poverty transitions, most studies used longitudinal panel data and apply various methods of logit and probit regression (Dercon& Shapiro,2007; Baulch& McCulloch, 2002), multivariate analysis (Woolard& Klasen,2005),and multinomial logit model (Cappellari& Jenkins, 2004; Adepoju, 2012).Bhide and Mehta (2003) suggest that multinomial model is a good substitute for the logit and probitmodels, multinomial model permits multi-level analysis and identifies more than two categories when studying poverty dynamics. The dynamic nature of poverty adds an important aspect to the analysis of poverty as some households experience poverty for long periods of time, while others experience it on temporary basis due to the negative shocks that results into a sudden loss of welfare.

Bane and Ellwood (1986) and Stevens (1994; 1999) examined poverty exit rates. In general, their results suggest that the longer a person has been poor, the less likely it is that he or she will escape poverty. Poverty exit rates have been found to be quite different across population sub-groups and races. Analyses carried out separately by both authors show that poverty exit rates are higher for whites than for blacks and female headed households and children are groups most likely to enter poverty, (Eller 1996; Naifeh 1998; Stevens 1999).

Transitions from a female-headed household to a male-headed household were experienced by 10.1 percent of individuals who exited poverty. Moving from a one-parent to a two-parent family is also associated with transitions out of poverty, although gaining a parent is more important for transitions out of poverty for blacks than non-blacks (Duncan and Rodgers,1991).

Determinants of Transient Poverty

Iceland (1997b) uses a multivariate framework to examine "the effect of four structural characteristics on individual poverty exits: (1) economic restructuring, (2) skills mismatches, (3)

racial residential segregation, and (4) welfare benefit levels. Results showed that these factors play a role in explaining African-Americans' economic disadvantages, but they have a weaker and often contrary impact on whites' poverty exit (p. 429). Jalan and Ravallion (1998) investigated the determinants of chronic and transient poverty using the censored conditional quintile regression method, result of their analysis showed that while physical assets were more important determinants of transient poverty, chronic poverty was highly influenced by demographic characteristics of the household.

Adepoju (2012) investigated dynamics of poverty in rural southwest Nigeria using regional panel data, results revealed an overlap between the determinants of chronic poverty and transient poverty while 6.8 percent exited poverty a larger proportion 15.5 percent moved into poverty and the level of education of household heads had a strong positive influence on the likelihood of exiting poverty, and the findings of the 2006 Core Welfare Indicator Questionnaire (CWIQ) survey conducted by National Bureau of Statistics revealed that 67 percent or 2/3 of Nigeria's rural population were poor compared to 57.9 percent in urban areas. Haddad and Ahmed (2002) investigated poverty transition in Egypt using panel data and both poverty transition matrix and component approach, findings showed that poverty was largely chronic while those who moved into poverty were twice over those who exited poverty. Baulch and McCulloch (1998) in an attempt to study poverty status and its transitions in rural Pakistan used panel survey data of around 800 households on 52 villages conducted by International Food Policy Research Institute (IFPRI) between July 1986 and October 1991. The analysis shows that while the incidence of income poverty was high (between 21 and 29 percent), turnover among the poor were also rapid as in each year of the survey. Between 46 and 51 percent of the poor households exited poverty from one year to another.

Conceptual and Theoretical Framework

This section discusses a review of relevant conceptual and theoretical formulations about poverty dynamics and poverty transitions in a population. The theories could be broadly classified into spatial and non–spatial theories, which include: The Theory of Fractal Poverty Traps, Life Course Transition Model, Sustainable Livelihood Approach, Poverty Transition Matrix, Culture of Poverty Theory and Model of Poverty.

Theory of Fractal Poverty Traps

Our theory emphasizes the existence of a basic pattern that repeats itself at multiple scales of social-spatial aggregation. We therefore refer to this multi-scalar view of poverty as a theory of fractal poverty traps, drawing on the fractal geometric concept of self-similarity with independence of scale. The "fractal" reflects our observation that there exists a pattern to poverty traps that repeats itself at all scales of aggregation, from the most micro-scale of individuals to macro-scale of nation states and multinational regions and through important intermediate, or "meso" scales, the concept of fractal poverty traps implies a need to experience "shocks" – for if one could anticipate a shock severe enough to push one past such a threshold, one would avert it if at all possible, (Easterly 2001). Spatial poverty traps are further described as geographically remote areas or regions that may have low potential or may be marginal areas with poor industrial or agricultural potential; they may be less favored or weakly integrated into the nation state (see table 1).

Table1: Characteristics of Spatial Poverty Traps

Remote	Areas that are far from the centres of economic and political activity. Far is calculated in terms of not only distance, but also time taken to get there.
Low potential	Areas that have low agricultural or natural resources, often crudely equated with dry lands.
Less favored	Politically disadvantaged areas.
Weakly integrated	Areas that are not well-connected, both physically and in terms of communication networks.

Source: Adapted from Chronic Poverty Report, 2004-2005.

From table1, it is clear that exclusion is an underlying theme in the understanding of spatial poverty traps. People are not only excluded from opportunities that may contribute to the

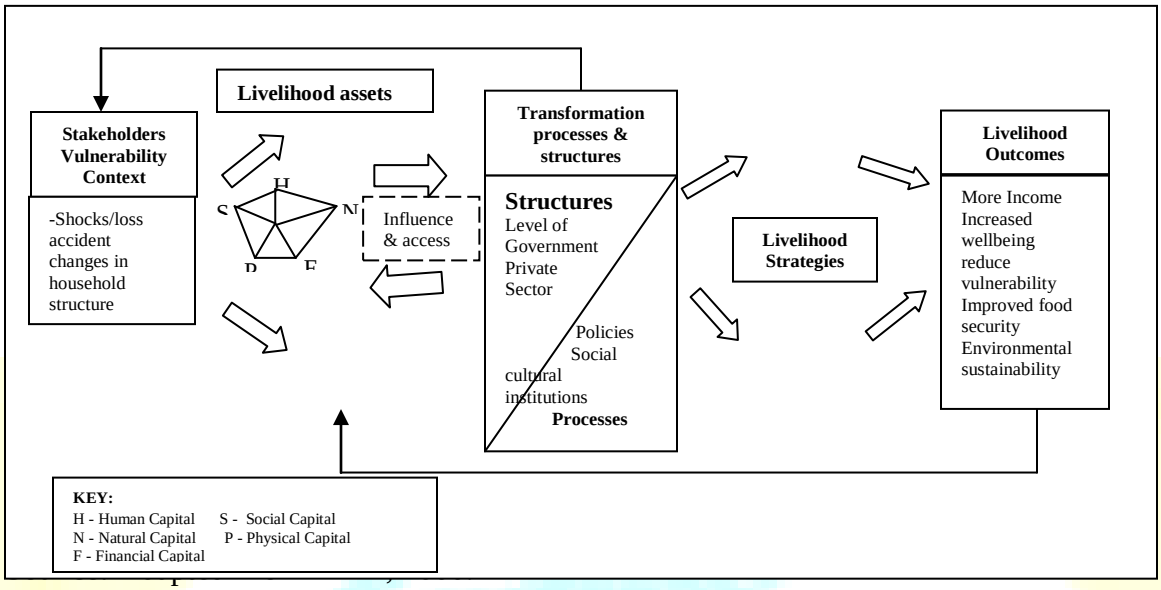
enhancement of various aspects of their lives, they are actively ignored and less favored. This social exclusion is strongly linked to both state and societal failures. Sources of exclusion include: physical isolation, ethnicity and religious discrimination, bureaucratic barriers and the nature of local politics.

The Life Course Transition Model

Several fundamental principles characterize the life course approach, they include: socio-historical and geographical location; timing of lives; heterogeneity or variability; "linked lives" and social ties to others; human agency and personal control; and how one's past shapes the future. In the life course perspective, space, time and transition have dominant influences on individuals' life. In the past, poverty was conceptualized and empirically investigated in absolute or static terms. However, life course theory challenges this approach and introduced the concepts of individual life histories, life cycle as well as life transitions. The turning point is a change in direction in one's life course with respect to previously established condition or situation (Clausen 1995), the cited turning points were not dramatic or major events but instead subtly evolving changes in the roles or organization of life that have greater effect with time and over space (McDonough &Berglund 2003).

Concept of Sustainable Livelihood Approach

According to Chambers and Conway (1992:9) "a livelihood comprises the capabilities, assets and activities required for a means of living". The approach serves as an instrument for the investigation of poor people's livelihoods, whilst visualizing the main factors of influence which can be understood by qualitative and participatory analysis at the local or communal level, regardless of where (i.e. which sector or geographical space) these occur. (See figure2)



In its simplest form, the frame work depicts stakeholders operating in a context of vulnerability which influences the access they have to certain assets (Finance, Human capital, Social capital. etc) which influences the actualization of the self– defined goals of transformation or existing poverty resulting into a positive livelihood outcome. The most straight forward approach to this is to examine the poverty transition matrices. A poverty transition matrix shows the number of households in and out of poverty in a particular period, broken down by their poverty status in the previous period. Thus, it is easy to see the numbers of households who have been poor or non-poor in both periods along with the number who have escaped poverty and those who have entered poverty.

Culture of Poverty

These theories highlight the role that character and opportunity play in poverty dynamics and variability.

The Flawed Character and restricted opportunity Theory

The flawed character theory assumes that the poor have ample opportunities for improving their economic status, but lack the initiative and diligence necessary to take advantage of them (Duncan 1984). Oscar Lewis' "culture of poverty" theory (1968) is an example of a flawed character theory. This theory maintains that a culture of poverty forms among a significant

minority of the poor such that people are not psychologically geared to take advantage of opportunities that may come their way. The restricted opportunity theory on the order hand contend that the poor lack sufficient access to economic opportunities and cannot avoid poverty unless their economic opportunities improve (Duncan 1984).

Methodology and Materials

This study examines the spatial trends of poverty and variability among households in Delta State, Nigeria. The research design employed was based on the 2006 National Sample Survey for monitoring poverty in the country, a total of 2,500 households were sampled, and 1,900households lived in rural areas, while 600 lived in urban areas. Some of the key indicators used in the questionnaire (information and communication technology, clean water, sanitation, education, medical facilities, employment status, electricity) were used in assessing the spatial variation of poverty in the study. The analysis was cross sectional and descriptive. Although, the household was used as the unit of measurement, poverty dynamics experienced by individuals' specifically household heads was examined and analyzed.

Geography of Delta State

Delta state is one of the major oil producing states in Nigeria named after the delta of the river Niger and is situated in the region known as the Niger-Delta. It is generally low-lying and has three seaports namely, Warri, Sapele and Koko. The state lies approximately between Longitude $5^{0}00$ and $6^{0}\ 45^{1}$ East and Latitude $5^{0}00$ and $6^{0}\ 30^{1}$ North, it is bounded in the North by Edo State, the East by Anambra State, South East by Bayelsa State and on the Southern flank is the Bight of Benin which covers about 160 kilometers of the State's coastline. The State has wide coastal belt inter – lace with rivulets and streams and the state is grouped into three senatorial districts namely Delta North, Delta South and Delta Central for easy administrative purposes. The state has a total land area of 16,842 km^2. Why Delta State? Delta State is ethnically diverse and heterogeneous, a replica of Nigeria with high cost of living and high incidence of poverty, environmental degradation, and deprivation. Based on self-classified poverty situation, 74.8 percent of households in the south are classified poor, 64.3 percent of

households in the north and 51.4 percent of households in the central district were also classified poor, NBS (2006), with a population of 4,098,291 (Males: 2,674,306 Females: 2,024,085 (see Federal Republic of Nigeria, Official Gazette, No. 24, vol. 94, 2009) .

Discussion of Findings and Results

Poverty indicators

I. Information technology and telecommunication

Some core indicators adopted in the NBS questionnaire survey were used in assessing the spatial variation of poverty across the three senatorial districts of the study area. The breakdown of the results in fig. 2 shows that the level of access to information technology and telecommunication is still below average. As could be seen from the results, less than 40% of all the respondents owned a handset phone while only 2 % or less had access to personal computer. However, there are variations across the senatorial districts. In terms of ownership of handset phone,central senatorial district has more respondents (38.4 %) as compared to north (34.2 %) and south (27.2 %). Similarly, more respondents from central have access to personal computer as compared to south (0.9 %) and north (0.8 %) respectively.

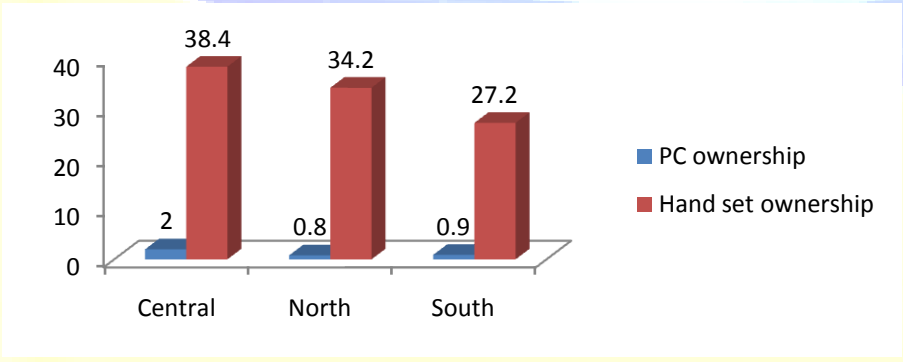


Fig 2: Access to information technology and telecommunication

Source: CWIQ Survey 2006

II. Household infrastructure

The household access to infrastructure such as clean water, waste disposal and electricity is another indicator that has been used in this study to examine the poverty level in the study area. More than 80 % of the respondents across the three senatorial districts in the study area had

access to water. However, the situation is different when looking at access to clean and safe water, less than 60 % had access to safe water in central and north senatorial districts as compared to 32.1% from south senatorial district. The level of sanitation is far below average in north and south senatorial districts. As could be seen from the breakdown of the results in fig 3, 21.4 % and 25.5% respondents sampled during the survey in north and south senatorial districts respectively had access to safe sanitation as compared to 52.4 % from the central district .The situation became worse when looking at improved waste disposal in the study area. Less than 20 % of respondents across the three districts had access to improved waste disposal system .Even at that, variations existed across the districts, as 7.3 % from north had access to improved waste disposal compared to central and south districts with above 16 %. More than 60 % of respondents sampled in the survey had access to electricity. Majority of respondents (88%) from the central district had access to electricity as compared to 69.1 % and 60 % respectively from north and south districts.

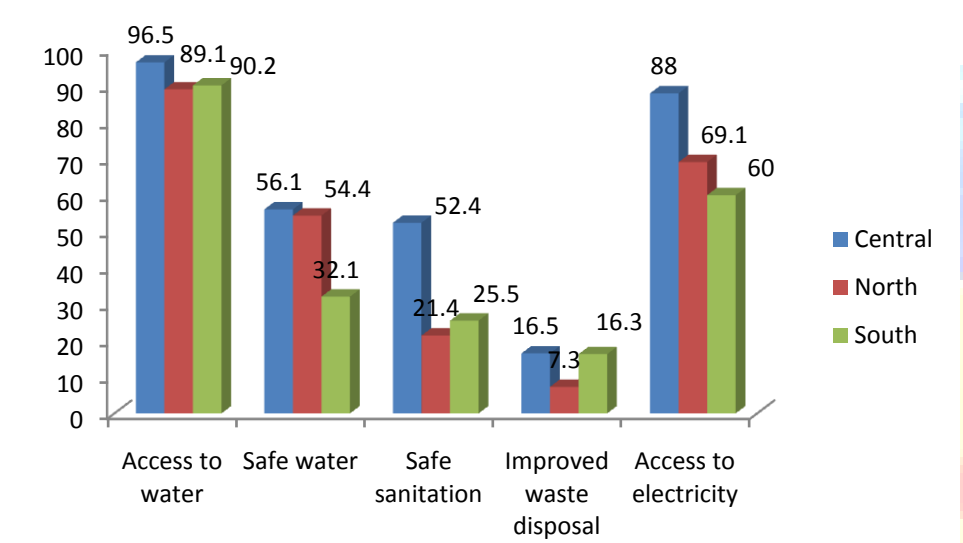


Fig 3: Households' head access to infrastructure

Source: CWIQ Survey 2006

III. Education

Access to education is another indicator adopted in this study for examining the spatial variation in poverty across the districts. The level of access to primary education could be said to be above average as shown in fig. 4. In all the three districts, more than 50% of respondents had

access to primary education. However, there are variations across the districts, 78.5 and 77.9 respondents from central and north have access to primary education in comparison to 57.8 % from the south. The situation is quite different when looking at secondary education, less than 50 % of respondents from north and south districts respectively had primary education in comparison to 60.6% from central.

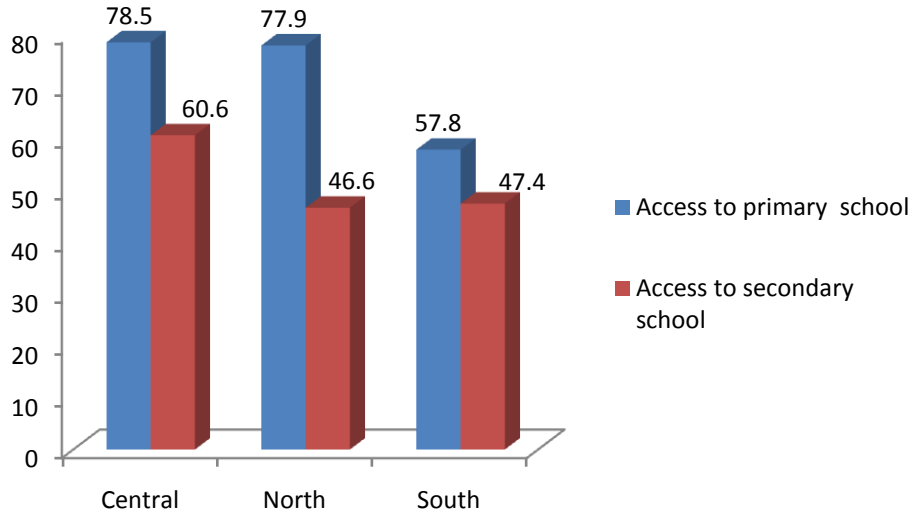


Fig 4: Education attainment of household head

Source: CWIQ Survey 2006

IV. Medical facilities

The level of accessibility of respondents from south senatorial district as revealed in fig. 5 is below average in comparison to the other two districts central and north. About 33.6 % from the south had access to medical facilities as compared to 55.5 % and 52.4 % from north and central respectively.

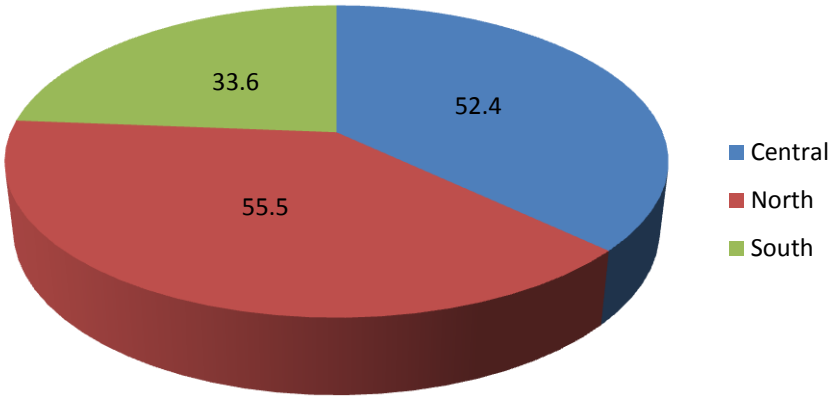


Fig 5: Household heads' access to medical facilities

Source: CWIQ Survey 2006

V. Employment status

This another indicator adopted in the study to examine the poverty level across the study area. The results in fig. 6 show that less than 10% of respondents aged 15-24 were unemployed in the last 7 days of the time of survey. The north (6.6%) and central (5.9%) districts recorded more level of unemployed youths compared to the south (5%). In a similar vein, the number of unemployed respondents aged 15 & above in the south (7.3%) and central (6.5%) were more when compared to north (5 %).

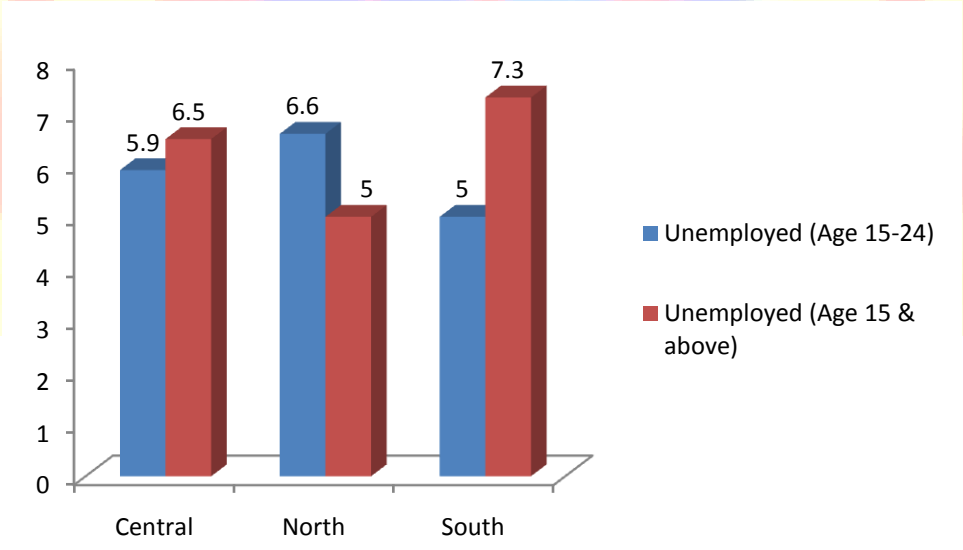


Fig 6: Youth employment

Source: CWIQ Survey 2006

Conclusion

The level of poverty across the three senatorial districts of the study area has been examined using some selected indicators. Findings revealed that the level of information technology and telecommunication access is below average especially as it relates to personal computer; only 2 % of the respondents have access to computer while 40 % owned mobile phones. With this low level, it obvious that majority of the respondents are not empowered to compete favorably in this era of information and communication technology (ICT). In terms of access to safe and clean water, some variations existed across the three senatorial districts. The level of access to safe and clean water in the central and north senatorial districts was better compared to south district where only about 32.1 % of respondents had access to clean and safe water. Also the number of households having access to good sanitation in the north and south districts was found to be very low in comparison to the central district where more than half (52.4%) had access to good sanitation. On educational attainment, more than half of the respondents in each of the district had primary education. For those that attained secondary education, only the central district recorded more than half. What this suggests therefore is that the level of education attainment is quite higher in the central. Households' head access to medical facilities as shown by the results was better in the central and north senatorial districts in comparison to south where the level is very low. Youth empowerment through employment is one of the strategies that are used to tackle poverty in any given society. This is based on the fact that youths form the productive base of any economy. In this study, the level of unemployment for those aged 15-24 is very high. This high level of unemployment as seen from this study is one of the developmental challenges facing the Niger Delta region. In fact, the region is battling with youth restiveness and other violent crimes due to high unemployment rate. Although poverty is somewhat difficult to measure due to variations in indicators used by different societies, this study has been able to examine spatial trends of poverty in the study area using some selected core welfare indicators. Government at various levels should address the infrastructural challenges being faced in the study area in order to empower the citizenry thereby reducing the level of poverty.

REFERENCES

Abdullahi M.U. (1993). "The Design and Management of Poverty Alleviation Projects in Africa." Economic Development Institute (EDI) of the World Bank, Washington, D.C.

Abler, R, Adams, J.U.S. Gould, P. (1972) "Spatial Organization: The Geographer's view of theWorld." New York: Prentice – Hall International Incorporated.

Abumere S.I. (1998b) "Jurisdictional Partitioning and the poverty gap in Nigeria: Ibadan Working Paper" Development Policy Centre.

Adepoju A.O.(2012) " Poverty Transition in Rural SouthWest Nigeria" Global Journal of Science Frontier Research USA, Volume 2.

AdepojuA.O.,Yusuf S.A.,OmononaB.T.andOkunmadewa F.Y.(2011) "Vulnerability Profile of RuralHouseholds in South West Nigeria". Journal of Agricultural Science Vol.3,No1:pp 128-139.

Appleton, S. (1998) "Changes in Poverty in Uganda 1992 – 1996" Centre for the Study of AfricanEconomics Working Paper Series 98-150.

Areola .O. &Okafor .S.(1998) "50 years of Geography in Nigeria", Ibadan University Press.

Bane, Mary Jo and David Ellwood, (1986) "Slipping Into and Out of Poverty: The Dynamics of Spells," Journal of Human Resources, Volume 21, No.1, inter, 1-23.

Baulch .B. and Hoddinott .J (2000,2002) "Economic Mobility and Poverty Dynamics in Developing Countries," Journal of Development Studies 36-6:p.1-24.

Baulch B and McCulloch, N. (1998) "Being Poor and Becoming Poor: Poverty Status and PovertyTransitions in Rural Pakistan" IDS Working Paper 79.

Canto .O. (2002) 'Climbing out of Poverty and Falling In, Low income stability in Spain' Applied Economics, 34: 1903-1916.

Carter M.R. and May. J. (2001) "One kind of freedom: The Dynamics of Poverty in Post – Apartheid South Africa," World Development 29:1987-2006.

Clausen, John. A.(1995) "Gender, Context and Turning Points in the Ecology of Human Development",edited by Glen. H., Elder Phyliss Moen, Jr. and Kurt Luscher, AmericanPsychology Association, Washington, D.C.

Coulombe, H. and Mckay, A. (1996) "Modeling Determinants of Poverty in Mauritania" World Development Vol. 24,No.5, Pp. 1015 – 1031.

Duncan, Greg J.(1984) "Years of Poverty, Years of Plenty". (Ann Arbor: Institute for Social

Research, The University of Michigan) .

Duncan, Greg J. and Willard Rodgers (1991) "Has Children's Poverty Become More Persistent?"American Sociological Review. Vol. 56, No. 4, 538-550.

Federal Republic of Nigeria (2009). Official Gazette, No. 24, vol. 94,

FOS (1999a). "Poverty Profile for Nigeria 1980 – 1996." Federal Office of Statistics, Abuja, Nigeria.

Grooteart, C. and Kanbur, R. (1995) "The Lucky Few Amidst Economic Decline: Distributional change in Cote d Ivoire As seen through panel data sets (1985-1988)" Journal of Development Studies Vol. 31, pp. 603 - 619.

Haddad.L and Ahmed .A. (2003) "Chronic and Transitory Poverty Evidence From Egypt(1997-1999)".

Iceland, John (2003) "Dynamics of Economic Wellbeing 1996-1999"In current Population Reports Washington D.C.:U.S. Census Bureau.

I.L.O. (1976b) "Meeting Basic Needs: Strategy for Eradicating Mass Poverty and Unemployment" Conclusion of the World Employment Conference, Geneva.

Jalan, J. and Ravallion, M.(1998) "Transient Poverty in Postreform Rural China." Journal of Comparative Economics, Vol.26,No.2, pp.338-357.

Lewis, Oscar, La Vida (1968) London: Panther Books.

McKernan, Signe-Mary, Caroline Ratcliffe, and Stephanie Riegg. (2001). "Transition Events in the Dynamics of Poverty: A Review of Issues and Results," The Urban Institute. Washington, D.C.

McKernan, Signe-Mary,and Caroline Ratcliffe, (2002) "Transition Events in the Dynamics ofPoverty" The Urban Institute. Washington, D.C.

Nigeria Bureau of Statistics (2011) "Poverty Profile for Nigeria" NBS Office, Abuja, Nigeria.

Phipps, Shelley (2003) The impact of poverty on Health, scan of Research Literature" In Poverty and Health, CPHI Collected Papers. Ottawa, Canada: Canadian Institute for Health Information.

Rank, Mark and Thomas Hirschl, (1999a) "Estimating the Proportion of Americans Ever Experiencing Poverty During their Elderly Years" The Journals of Gerontology, Vol. 54B, Issue 4, S184-194 .

Rank, Mark and Thomas Hirschl, (1999b) "The Likelihood of Poverty across the American

Adult Life Span." Social Work, Vol. 44, No. 3, 201-216 .

Rank. M. R. (2001) "The effect of Poverty on American Families Assessing our research knowledge" Journal of family issues 22: 882-903.

Stevens and Ann Huff (1994) "The Dynamics of Poverty Spells:" Updating Bane and Ellwood's AEA Papers and Proceedings, Volume 84, No. 2, May 1994,34-37.

Tunde .O. (2006) "Poverty: Causes and Solutions in the Nigerian context."

UNDP, (1998). Human Development Report – New York: Oxford University Press.

U.S. Census Bureau, Historical Poverty Tables, (2000). http://www.census.gov/.

Woolard,I. and Klasen,S.(2005) "Determinants of Income Mobility and household poverty Dynamics inSouth Africa" Journal of Development Studies. Vol.41,N0.5, pp.865-897.