



I Semestre de 2011

GEOTRÓPICO

5 (1)

ISSN 1692-0791

Artículo 2

<http://www.geotropico.org/>

Publicación electrónica arbitrada por pares
A peer-reviewed online journal

A spatial analysis of infrastructures and social services in rural Nigeria: Implications for public policy

Nkasiobi Silas Oguzor, PhD

Provost, Federal College of Education (Technical),
Omoku-Rivers State, Nigeria

Manuscrito recibido: Diciembre 22, 2010
Artículo aceptado: Febrero 28 2011

Abstract

There are observed inequalities in the distribution of socio-economic facilities in Nigeria. The paper examined the availability of some social infrastructural facilities in rural parts of Imo State. It equally examined the extent to which those facilities have promoted rural development in the State. Data were collected mainly from primary sources. A total number of 2,340 copies of questionnaire were administered in eighteen communities and all were retrieved for the analysis. Research findings revealed unevenness in the availability of potable water supply and telephone (analogue landline) facilities. However, the availability of electricity, educational and health facilities were largely indicated by respondents in the 18 study communities to be well spread across the State. The paper noted some rural development implications as the result of the Z-test of proportion statistics led to the rejection of the null hypothesis and the acceptance of the alternative, which is that, majority of rural areas in Imo State, have significant presence of social infrastructural facilities that enhance economic activities.

Keywords: *infrastructure, rural development, communities, services, Nigeria*

Introduction

The issue of infrastructure and the development of rural areas have continued to be topical in Nigeria. The observed internal disparities in socio-economic development in

Nigeria, as in other developing countries, are linked to the antecedents of development dating to the colonial era. According to Onimode (1988) given Nigeria's colonial and neo-colonial historical experiences which culminated in the rural-urban inequality in the distribution of socio-economic facilities, the majority of the rural populace are trapped and sub-merged in a sub-human culture of silence, misery and isolation. Many parts of rural Nigeria are characterized by unreliable access feeder roads, no light or epileptic power supply, no basic health facility, no decent housing, no major educational institution, no recreational facilities among others (Olayiwola & Adeleye 2005).

In any nation, growth and development, whether in urban or rural setting, are consequent on the availability of the infrastructure that provides the essential utilities and services necessary for improved standard of living. There is need for infrastructural development in urban and rural areas, especially with the latter being grossly neglected until more recently as exemplified by literature (Okali, et al. 2001). In many parts of rural Nigeria infrastructural facilities and services which form the central catalyst that induces population agglomeration and growth, the basic footing on which development activities stand as well as the principal ingredients for the development process are poorly developed. The inadequate provision of such services as electricity supply, pipe-borne water supply, health care services and more readily available modes of transport and communication in rural areas will militate against prospects for better living standards and prospects for employment and other forms of economic activities. The great importance the issue of rural infrastructure has assumed in recent times is indicative of the failure of past efforts. An awareness of their importance is a key to rural development.

This study focuses primarily on potable water supply, electricity, telephone services, schools and clinics as social infrastructural facilities. It aims to examine the availability of these social infrastructural facilities in rural parts of Imo State as well as the extent to which such facilities have promoted rural development in the state. Its central hypothesis is stated thus – Rural areas in Imo State do not have significant presence of social infrastructural facilities that enhance economic activities.

Theoretical perspective

The infrastructural approach to rural development is one method commonly used by most Third World countries. Abumere (2002) defined rural infrastructure to include the system of physical, human, and institutional forms of capital which enables rural residents to better perform their production, processing, and distribution activities, as well as help to improve the overall quality of life. Some of these infrastructures are roads communication network, irrigation, storage facilities, market facilities, research and extension institutions, schools and universities which train and turn out a variety of skilled agricultural workers.

Rural infrastructure can be better understood as those specialized “elements” in the development process that bring about improvements in the socio-economic welfare of the rural dwellers. They are catalysts of development, and at the same time their presence can be an indicator of the level of development. On the other hand, the presence of certain types of infrastructure such as electricity may not bring about significant improvements in the life of the people unless when combined with other variables. The following can be classified as social infrastructure; health (hospitals, dispensaries, maternities, health centers), education (all types of schools except universities) and utilities (water and electricity).

Be it physical, social or institutional infrastructure, the theoretical premise of the infrastructural approach to rural development is predicated on a modernization theory called the trickle-down theory of development. It is a general economic development model of the American economist A.O. Hirschman. According to Hirschman (1958) growth is supposed to trickle down from the core, which emerges through polarization. The forces of concentration were collectively referred to by Hirschman as polarization. The term polarization is actually the process of spatial concentration of resources into a core. He argued that polarization should be viewed as an inevitable characteristic of the early stages of economic development. According to him, the corollary of sectorally unbalanced growth is geographically uneven development, and he specifically cited Perroux's (1955) idea of natural growth pole. The crucial argument, however, was that eventually development in the core will lead to the "trickling down" of growth-inducing tendencies to backwash regions. The implication of his thesis is that government should not intervene to reduce inequalities. Hirschman's approach is therefore set in the traditional liberal model of letting the market decide.

Most of those who perceive development as a process whereby societies or social institutions change or more from tradition or less developed conditions to more complex and impersonal conditions are modernization scholars. Oyeleye (1987) conceived rural development as involving the process of trickling-down of modern infrastructural facilities and ideas from the more developed urban areas to rural areas, i.e. a process of the exportation of urbanization to rural communities. Abumere (2002) stresses that if rural development is defined as a strategy design to improve the economic, social, and cultural life of the poor rural dweller, then the definition connotes that the inputs of agents of development (good roads, potable water, electricity supply, etc) into the rural areas must be carefully thought out and delivered in a consistent manner. This is regardless of whether these agents of improvement physically move from the urban to the rural area, or vice-versa.

In the case of Imo State, under the 1982 Rural Electrification scheme, the 35 MVA power station at Amaraku in Isiala Mbano LGA served Aboh-Mbaise, Ahiazu-Mbaise, Ihitte Uboma, Isiala Mbano, Ehime Mbano, Mbaitoli, Ikeduru and Orlu LGAs, as well as Ohaji/Egbema/Oguta and Oru LGAs. Since the 1982 Power Plants were dismantled by the military regimes, no civilian government has built any power station. Imo State is on the National Grid. What Imo State government does is to buy transformers to step down electricity from National Grid (Anozie 1990). This made him to observe that in Nigeria, governments have often failed to recognize the need to treat the ruralites equally with their urban counterparts particularly in the provision of development-oriented facilities and services. The emphasis however should actually be on the promotion of all round rural development. The function of past Nigeria's infrastructural programs show that their premise may have been informed by the modernization theory rather than the promotion of all round/holistic rural development. The study by Akintola (2007), found fault with top-down development approach and the trickle-down theory and the tendency of the federal and state government to impose development policies on rural communities. They have argued in favor of a bottom-up approach whereby policies, programs (beyond that of infrastructural facilities provision) and priorities are shaped by the communities themselves. In this study, there is a consideration that conflicts with strict application of the trickle-down theory. It is the need to forestall creating a fertile ground for the support or promotion of development without the people's participation especially in proffering suggestions for policy formulation as seen in studies that so apply it.

Majority of the existing theories and models of rural development focus attention mainly on structural aspects of rural development rather than the spatial expression of the process of rural development. The theory of trickle-down growth and development is relatively similar to the growth pole / growth centre theory. However in studies such as this one, some scholars consider the growth pole theory or model to be more appropriate. This is largely because Perroux (1955, 1971) and Livingstone's (1971) growth pole concept and growth centre concept lie at the core of current regional planning and forms a large proportion of regional planning action. A fact strongly affirmed by Alden and Morgan (1974) as well as Friedmann and Weaver (1979). In the words of Perroux "growth does not appear everywhere at the same time; it manifests itself in points or poles of growth with variable intensities; it spreads by different channels and with variable terminal effects for the economy as a whole". Hence, a pole is recognized to be a point in abstract economic space to which centripetal forces are attracted and from which (in time) centrifugal forces emanate throughout the field of influence of the set of activities constituting the pole. One major factor influencing structural differentiation and so doing creating a pole is the key industry.

Later, further modifications of the concept permitted a growth pole to mean simply the geographical clustering of economic activity in general. This implies that spatial concentration is more efficient and more growth inducing. According to Okafor and Onokerhoraye (1986) one of the main advantages of this model as a tool of spatial analysis and planning of rural development relates to its total coverage of the national space economy thus embracing both urban and rural development and actually seeing this in an integrated way. Such a system of spatial development within the space economy of any country will counteract the splintering of functions and prevent parasitic development (Ayeni 1980).

Methodology

The study adopted a field survey approach. Data for this study were collected through primary sources, which consisted of personal observation and questionnaire administration. On the whole, 2,340 copies of structured questionnaire were administered on the respondents in Amaraku, Dikenafai, Enyiogugu, Ifakala, Isiekenesi, Mgbidi, Nguru Nwenkwo, Nkwerre, Oguta, Okuku, Okwelle, Orodo, Orsu-Obodo, Otulu (Oru), Owerre Nkwoji, Umuguma, Umuna (Okigwe) and Umunkwo which were selected rural communities in Imo State (see Figure 1). Randomized systematic stratified sampling technique was applied in their selection. Since Imo State has twenty-seven Local Government Areas politically divided into three senatorial districts of Orlu, Owerri and Okigwe, each senatorial district was taken as a stratum in the stratified sampling frame. In each stratum, the Local Government Areas were arranged alphabetically and systematically selected at intervals of three. The result of the exercise was the selection of nine Local Government Areas out of the 27 for the purpose of administering the questionnaire. Within each sampled Local Government Area, two communities were randomly selected using the Table of random numbers. In all, 18 communities were covered by the survey. The questionnaire copies were administered on the basis of 130 to each rural community for the study. In a section of the questionnaire, respondents were asked to rate each proposition as it applies to the situation in their community with respect to availability of potable water supply, electricity, telephone services, schools, hospitals and health facilities, using a rating scale with four response clues which were later collapsed into two for purposes of analysis. The response clues indicated the degree of agreement on

TABLE 1: FREQUENCY DISTRIBUTION OF AVAILABILITY OF POTABLE WATER SUPPLY FACILITY IN PARTS OF IMO STATE.

Community	Water not avail.	%	Water avail.	%	Total	%
Amaraku	0	0	130	100	130	100
Dikenafai	120	92.3	10	7.7	130	100
Enyiogugu	130	100	0	0	130	100
Ifakala	110	84.6	20	15.4	130	100
Isiekenesi	130	100	0	0	130	100
Mgbidi	0	0	130	100	130	100
Nguru Nwenkwo	0	0	130	100	130	100
Nkwerre	0	0	130	100	130	100
Oguta	0	0	130	100	130	100
Okuku	0	0	130	100	130	100
Okwelle	100	76.9	30	23.1	130	100
Orodo	80	61.5	50	38.5	130	100
Orsu-Obodo	130	100	0	0	130	100
Otulu	130	100	0	0	130	100
Owerre Nkwoji	0	0	0	0	130	100
Umuguma	0	0	130	100	130	100
Umuna	90	69.2	40	30.8	130	100
Umunkwo	0	0	130	100	130	100
TOTAL	1020	43.6	1320	56.4	2340	100.0

Source: Author's fieldwork.

Results and Discussion

Contrary to the general belief of gross neglect of rural areas, it has been shown that some rural communities have benefited from government's efforts. Idachaba's (1982) survey of rural infrastructure in Nigeria is a typical example. In this study, a look at the locational distribution of the availability of potable water is predicated on the significance of water for drinking, sanitary, commercial, and manufacturing purposes. These functions do not assume a decreasing significance in the rural areas in Imo State or elsewhere. In Imo State, aside of potable water supply, other significant social infrastructural facilities for rural development include those dealing with electrification, telephone services, schools and clinics.

Table 1 reveals that all the respondents in Amaraku, Mgbidi, Nguru Nwenkwo, Nkwerre, Oguta, Okuku, Owerre Nkwoji, Umuguma and Umunkwo communities indicated the availability of potable water in their communities. All respondents i.e. 100% in Enyiogugu, Isiekenesi, Orsu Obodo and Otulu (Oru) indicated the absence of potable water supply. This shows that pipe-borne water or potable water is available in rural areas to a limited extent. The locational distribution of modern water supply facilities in the state in general is characterized by the proliferation of private boreholes and a few surface water treatment plants in some L.G.As under the various regional water schemes, namely the revived Okigwe regional water scheme, the new Orlu regional water scheme and the old Owerri water scheme. Remarkably, most of these schemes do not function fully due to operation

and maintenance problems. Consequently, they do not supply water on a steady basis and the supply is often times erratic. There are equally some non-operational government boreholes in rural Imo State, especially those provided under the Directorate for Food, Roads and Rural Infrastructures (DFRRI) and some other failed programmes, while Imo State Water Development Agency (IWADA) and Imo State Rural Water and Sanitation Agency (RUWASSAN) are currently making efforts to provide boreholes with hand pumps in the state (Ugoanyanwu 2009).

The number of rural people served by each source of water supply indicates a wide disparity among the communities. The disparity is likely to further widen if one considers the functional sources of water supply to the projected population. In those cases where it is anticipated that the population being served is large, the existing facilities will be put under intensive pressure. Field observation revealed that while some areas do meet the Federal Government recommended minimum standard of 115 liters per head, there are others that do not. Umuguma, Oguta, and Nkwerre are some of the communities that meet the afore-mentioned standard, while Orsu-Obodo, Isiekenesi and Otulu are some of those that do not.

Just like rural water supply, rural electrification is quite a basic institution in rural development. It helps to arrest emigration of the youths, men and even the rural women.

TABLE 2: FREQUENCY DISTRIBUTION OF AVAILABILITY OF ELECTRICITY FACILITY IN PARTS OF IMO STATE.

COMMUNITY	Elec.not available	%	Elec. available	%	Total	%
Amaraku	0	0	130	100	130	100
Dikenafai	0	0	130	100	130	100
Enyiogugu	0	0	130	100	130	100
Ifakala	0	0	130	100	130	100
Isiekenesi	0	0	130	100	130	100
Mgbidi	0	0	130	100	130	100
Nguru Nwenkwo	0	0	130	100	130	100
Nkwerre	0	0	130	100	130	100
Oguta	0	0	130	100	130	100
Okuku	0	0	130	100	130	100
Okwelle	0	0	130	100	130	100
Orodo	70	53.8	60	46.2	130	100
Orsu-Obodo	0	0	130	100	130	100
Otulu	0	0	130	100	130	100
Owerre Nkwoji	0	0	130	100	130	100
Umuguma	0	0	130	100	130	100
Umuna	0	0	130	100	130	100
Umunkwo	0	0	130	100	130	100
TOTAL	70	3.0	2270	97.0	2340	100.0

Source: Author's fieldwork.

From the responses obtained, there is availability of electricity facility in nearly all the study communities. However, of the 130 respondents in Orodo, 70 indicated no to availability of electricity facility while only 60 indicated yes (see Table 2). Orodo happens to be the only community with that exception, a finding corroborated by Onyenechere (2003). This increased provision of electricity facility is as a result of increased demand for electricity due to Nigeria's bid to achieve economic development in the country. Several factors are responsible for this demand, namely rapid rate of urbanization, gradual industrial development and increased magnitude and intensity of rural growth and development. Actually, power supply in Imo State comes from the Power Holding Corporation of Nigeria (PHCN) which originated from Afam power station. Much of the success recorded today is against the background of the Rural Electrification scheme in 1982 embarked on by the state government.

TABLE 3: FREQUENCY DISTRIBUTION OF AVAILABILITY OF LAND-LINE TELEPHONE FACILITY IN PARTS OF IMO STATE.

COMMUNITY	Tel. not avail.		Tel. avail.		Total	%
		%		%		
Amaraku	130	100	0	0	130	100
Dikenafai	130	100	0	0	130	100
Enyiogugu	130	100	0	0	130	100
Ifakala	130	100	0	0	130	100
Isiekenesi	130	100	0	0	130	100
Mgbidi	130	100	0	0	130	100
Nguru Nwenkwo	130	100	0	0	130	100
Nkwerre	0	0	130	100	130	100
Oguta	0	0	130	100	130	100
Okuku	130	100	0	0	130	100
Okwelle	130	100	0	0	130	100
Orodo	130	100	0	0	130	100
Orsu-Obodo	130	100	0	0	130	100
Otulu	130	100	0	0	130	100
Owerre Nkwoji	130	100	0	0	130	100
Umuguma	130	100	0	0	130	100
Umuna	130	100	0	0	130	100
Umunkwo	130	100	0	0	130	100
TOTAL	2080	88.9	260	11.1	2340	100.0

Source: Author's fieldwork.

On availability of telephone facility in Imo State, the data in Table 3 reveal that only Nkwerre and Oguta are communities that have Nigerian Telecommunication's (NITEL) telephone services, widely known as land line analog phone and maybe the Global System for Mobile Communication (GSM) which is recent and widespread due to privatization in the telecommunication sector. This study, recognizing the ubiquitous nature of the GSM, chose to use the nation's telecommunication's land line analog phone which is

conventional for indicating availability of telephone facilities. Of the respondents that indicated yes to availability of telephone facilities, 50 per cent are from Nkwere and another 50 per cent from Oguta.

There is a 100 per cent response on availability of educational and health facilities by respondents. Of this, Amaraku, Dikenafai, Enyogugu, Oguta, Okuku, Okwelle, Orodo, Orsu-Obodo, Otulu (Oru), Owerre Nkwoji, Umuguma, Umuna (Okigwe) and Umunkwo account for 5.56 per cent each. This is evident in Table 4. The management of education in Imo State operates under the Ministry of Education through the Education Board. Primary school education is provided for all children in the state between six and twelve years of age, in keeping with the Universal Basic Education Scheme (UBE). Each community in the state, according to its population size is served by one or more primary institutions. The average home-to-school walking distance ranges from 0.4 kilometres to 2.3 kilometres. The Local Government Areas with semi urban centres or urbanizing rural areas generally have the most diversified range of secondary institutions. The state health care facilities include 19 general hospitals with about 15 of them dotting the rural landscape. There are also voluntary agency hospitals owned by the missions and private clinics run by individuals in the rural parts of Imo State.

TABLE 4: FREQUENCY DISTRIBUTION OF AVAILABILITY OF EDUCATIONAL AND HEALTH FACILITIES IN PARTS OF IMO STATE.

COMMUNITY	EDUCATIONAL FACILITY			HEALTH FACILITY		
	Available	%	Total	Available	%	Total
Amaraku	130	5.56	130	130	5.56	130
Dikenafai	130	5.56	130	130	5.56	130
Enyogugu	130	5.56	130	130	5.56	130
Ifakala	130	5.56	130	130	5.56	130
Isiekenesi	130	5.56	130	130	5.56	130
Mgbidi	130	5.56	130	130	5.56	130
Nguru Nwenkwo	130	5.56	130	130	5.56	130
Nkwere	130	5.56	130	130	5.56	130
Oguta	130	5.56	130	130	5.56	130
Okuku	130	5.56	130	130	5.56	130
Okwelle	130	5.56	130	130	5.56	130
Orodo	130	5.56	130	130	5.56	130
Orsu-Obodo	130	5.56	130	130	5.56	130
Otulu	130	5.56	130	130	5.56	130
Owerre Nkwoji	130	5.56	130	130	5.56	130
Umuguma	130	5.56	130	130	5.56	130
Umuna	130	5.56	130	130	5.56	130
Umunkwo	130	5.56	130	130	5.56	130
Total	2340	100	2340	2340	100	2340

Source: Author's fieldwork.

From the findings of the study, education and health facilities are not grossly lacking in rural parts of Imo State. When these available education and health facilities and others are improved upon, they will be a panacea to sustainable rural development. According to Nwaru (1997) rural development is an integrated process involving several components which include agricultural development, industrialization, improvement in social and physical infrastructural facilities in sectors such as health, education, transportation, water, electricity, etc. Thus social infrastructures are critical variables in rural development. They are recognized for their ability to provide many prospects for employment and income generation among rural dwellers, stemming of rural-urban migration, modernizing of agricultural production and fostering of even spread of development. They are known to develop rural market economies and promote greater rural input into the economic affairs of the state.

TABLE 5: ANALYSIS OF Z-TEST OF PRESENCE OF SOCIAL INFRASTRUCTURAL FACILITIES IN THE RURAL AREAS OF IMO STATE

Presence of Social Infrastructural Facilities	Proportion	Z- Statistic	Pr > Z	Critical Value (Z- Tabulated)
Yes	0.6325	4.05	< .0001	1.645

Source: Result of computer analysis

Effect of available social infrastructural facilities on rural development

That there is an effect of available social infrastructural facilities on rural development is certainly an assumption that can be tested. The hypothesis (Ho) that rural areas in Imo State do not have significant presence of social infrastructural facilities that enhance economic activities, as well as its alternative (Hi) that rural areas in Imo State have significant presence of social infrastructural facilities that enhance economic activities, was tested in this study. In testing this hypothesis, we used an analysis of two major responses (Yes, No) as it related to the number of respondents for the study (totaling 2,340).

Table 5 is a summary of the result of the analysis. The above summary shows that the Z-calculated is 4.05. Since this value is greater than the critical (Z-tabulated) value of 1.645, we reject the null hypothesis (Ho) and accept the alternative (Hi). This means that majority of rural areas in Imo State have significant presence of social infrastructural facilities that enhance economic activities.

The importance of infrastructure as basic needs for rural development and economic growth has been recognized for long. For example, the First National Development Plan (1962-1968) contained provisions for the dispersal of infrastructural facilities to rural areas-a need which was further stressed in the subsequent plans. Mc Neil (1993) enthused that the importance of rural infrastructural facilities had won due recognition so much so that many states created institutions for their provision and expansion.

It is the availability of these facilities in most parts of the state that has led to settlement points from Okigwe L.G.A to Mbaitoli L.G.A along the Owerri-Okigwe highway providing

thriving economic environment for petty traders and craftspersons. This particular route has several rural periodic and daily markets such as Eke Atta, Orié Amaraku, Eke Ezeala, and Afor Umuna. The craftspeople of Umuna known for their mat weaving, market their products at Afor Umuna (located on the highway). The same can be said of rural communities that constitute settlement points along the Owerri-Onitsha expressway, along Owerri-Orlu highway, along Owerri-Aba highway and along Owerri-Port Harcourt highway. Petty traders are also found at the intersection of major pedestrian flows.

Extending electricity services to rural areas has added a new dimension to the quality of rural life by increasing the productive potentials of the rural areas and creating jobs for more people. There are barbers, tailors, commercial typists, hairdressers, operators of sawmills, welders, printers and radio repairers who use electricity to carry out their services in almost all the study communities. This situation has led to reduced migration from the rural areas to urban centres in Imo State. Cassava/garri processing, fish processing and palm oil processing are facets of agro-processing in rural Imo State. The several garri grinding mills in Owerri-West L.G.A utilize electricity in their operations. Some of the oil mills in the study communities are electricity operated too. Those in fish production in Oguta community, at times availing themselves of electricity supply, use refrigeration for the preservation of unsold and newly caught fresh fishes. These economic activities help to reduce the dependence of rural economy on agriculture. Rural electrification has, therefore, provided an alternative to urban life; an alternative which tends to make the rural sectors of the economy reciprocal partners of their urban counterparts. Observable reduced migrations have led to a boost in subsistence agriculture as most of the returnees turn to one or more forms of agro-activity in their homestead.

We summarize this section by stating that indeed many of the study communities have some level of presence of social infrastructural facilities namely; supply of potable water, presence of good schools, hospitals and health facilities, but despite their presence some of the rural dwellers still suffer. Some suffer from water/light inadequacy plus their erratic and irregular supply, electricity bills and water rates/costs that are hardly affordable and/or government health services that can rarely be obtained at affordable charges, broken down and ill maintained transformers and boreholes. This implies that availability does not necessarily translate to accessibility or utility in rural infrastructural provision.

Conclusion/ Recommendation

This paper is a preliminary study that has examined the availability of social infrastructural facilities in rural parts of Imo State, and the linkage between existing social infrastructure and some aspects of rural development. It found out that though majority of rural areas in Imo State have significant presence of social infrastructural facilities that enhance economic activities, they are not equitably distributed. It suggests that a comprehensive strategy that will eliminate disparities that exist within L.G.As and between L.G.As be instituted. It also suggests that an articulated and integrated plan for social infrastructural provision indicating priority areas using acceptable criteria is needed for costs to be minimized. Of equal importance is the modification of the self-help approach, the provision of minimum infrastructure for those areas that cannot mobilize fund for projects and the protection of the rural environment from harmful effects that may arise from infrastructural provision.

Since social infrastructural availability does not necessarily translate to accessibility or utility, to achieve genuine rural development, rural infrastructural provision in the study area needs an excellent institutional framework. There is need to gradually dismantle over dependence on government and foreign loans in infrastructural provision and to install a

self-reliant system to avoid drafting and implementing unproductive and crisis ridden development plans at both the national and local government levels. To avoid the claim by Yohanna (2002) that existing policies are based on trial and error because of our problem of “regime policy” which comes and goes with governments, the government needs to carry out a pre-policy study, in which a theoretical model made by the rural people, based on the problems of the rural people and for the rural people will emerge.

References

- Abumere, S.I. 2002. Rural infrastructure and the development process in rural Nigeria. Research Report No. 36, Development Policy Centre, Ibadan, Nigeria.
- Akintola, S.R. 2007. Coping with infrastructural deprivation through collective action among rural people in Nigeria. *Nordic Journal of African Studies*, 16 (1): 30-46.
- Alden, J. and Morgan, R.1974. *Regional Planning: A Comprehensive View*. London, Leonard Hill Books.
- Anozie, U.C. 1990. Town unions and rural development: The case of Mbanjo. In *Empiricism in Rural Development*, U.M. Igbozurike,; E.E., Okpara, and U.A. Awuzie, eds. (Owerri, Karto Press).
- Ayeni, B. 1980. Models of integrated rural development: Facts and falacies. Paper presented at the Conference on Integrated Rural Development and Women in Development, University of Benin.
- Friedmann, J. and Weaver, C. 1979. *Territory and function: The evolution of regional planning*. London, Edward Arnold.
- Hirschman, A. O. 1958. *The strategy of economic development*. New Haven, Conn., Yale University Press.
- Idachaba, F.S. 1982. *Rural infrastructure in Nigeria*. Ibadan, University of Ibadan Press.
- Livingstone, I., ed. 1971. *Economic policy for development*. Harmondsworth, Eng., Penguin Books.
- Mc Neil, M. 1993. The changing nature of infrastructure. *The Urban Age*, 1 (3): 1-5.
- Nwaru, N.M. 1997. Linkages in agriculture and industry and community development in Nigeria. In *Local government and community development*, A.E.C.Ogunna, and U. Uchegbu, eds., (Owerri, Great Versatile Publishers).
- Okafor, F.C and Onokerhoraye, A.G. 1986. *Rural systems and planning*, The Geography and Planning Series of Study Notes. Benin, Eguavoen Printers.
- Okali, D.U., Okpara, E.E., and Olawoye, J. 2001. The case of Aba and its region, South East Nigeria. Working Paper 4, Rural-Urban Interaction and Livelihood Series, Institute for Environment and Development, Human Settlement Programme, London.
- Olayiwola, L.M., and Adeleye, O.A. 2005. Rural infrastructural development in Nigeria between 1960-1990- Problems and Challenges. *Journal of Social Science*, 11 (2): 91-96.
- Onimode, B. 1988. *A political economy of the African crisis*. London, Zed Books.
- Onyenechere, E.C. 2003. *Spatial analysis of rural women informal economic activities in the development process of rural areas: A case study of Imo State*. PhD dissertation, Department of Geography and Environmental Management, University of Port Harcourt, Port-Harcourt.
- Oyeleye, D.A. 1987. Towards a policy of rural development in the Third World with special reference to Nigeria. In *Integrated Rural Development in Nigeria and Women's Role*, F.I.A. Omu, and P.K. Makinwa, eds. (Ibadan, Heinemann Educational Books).

- Perroux, F. 1955. Note sur la notion de la pole de croissance. *Economie Alliquée*, 1 & 2: 307-320.
- Perroux, F. 1971. Notes on the concept of growth poles. In *Economic policy for development*, I. Livingstone, ed. (Harmondsworth, Eng., Penguin Books): 279-89. [English translation of the 1955 Perroux paper.]
- Ugoanyanwu, E.C. 2009. Rural water supply in the context of the Millennium Development Goals (MDGs) in Imo State of Nigeria. Paper presented at the National Seminar on Rural Water Supply, Imo State University, Owerri.
- Yohanna, J.K. 2002. Role of agricultural extension in alleviating/ eradicating poverty in Nassarawa State of Nigeria. Agriculture: A basis for poverty eradication and conflict resolution. *Proceedings of 36th Annual Conference of Agricultural Society of Nigeria*, Federal University of Technology, Owerri, Nigeria, October, 2002.

Resumen

En Nigeria son evidentes las desigualdades en la distribución de servicios socio-económicos. En este artículo se examina la disponibilidad de algunos servicios de infraestructura social en sectores rurales del Estado Imo. También se exploró la magnitud con la que tales servicios han estimulado el desarrollo rural del Estado. Los datos se obtuvieron principalmente de fuentes primarias. Se administraron en total 2.340 cuestionarios en 18 comunidades, todos los cuales se tuvieron en cuenta en el análisis. Los hallazgos de la investigación revelan inequidades en la disponibilidad de servicios de agua potable y teléfono (de línea terrestre analógica). No obstante, es evidente la disponibilidad de electricidad y servicios de educación y salud, cuya existencia es detectada en la mayoría de las respuestas obtenidas en las 18 comunidades estudiadas, como servicios bien distribuidos a través del Estado. El artículo destaca algunas implicaciones del desarrollo rural como resultado del Z-test de estadística proporcional, lo cual lleva al rechazo de la hipótesis nula y a la aceptación de la alternativa, o sea que la mayoría de las áreas rurales del Estado Imo tienen una significativa presencia de servicios de infraestructura social que fortalece las actividades económicas.

Palabras clave: infraestructura, desarrollo rural, comunidades, servicios, Nigeria

Forma de citar este artículo:

Suggested citation

Oguzor, Nkasiobi Silas. 2011. A spatial analysis of infrastructures and social services in rural Nigeria: Implications for public policy. *GeoTrópico*, NS 5 (1), Artículo 2: 25-38. Online, acceso [insertar fecha de acceso o descarga]: http://www.geotropico.org/NS_5_1_Oguzor.pdf

Correspondencia:

Nkasiobi Silas Oguzor, Ph.D.
Provost
Federal College of Education (Technical),
Omoku-Rivers State
Nigeria
nkasiobisilasoguzor@yahoo.com



GRUPO GEOLAT – BOGOTÁ

Editor
HÉCTOR F. RUCINQUE, Ph.D.



Licenciado para uso personal gratuito bajo la *Creative Commons Attribution – Noncommercial – No Derivative Works 2.5 Colombia license*, especificada en: <http://creativecommons.org/licenses/by-nc-nd/2.5/co/>

Licensed for free use under the *Creative Commons Attribution-Noncommercial-No Derivative Works 2.5 Colombia license*, available at: <http://creativecommons.org/licenses/by-nc-nd/2.5/co/>