Rural Service Centres - Engines for Rural Development in Ahoada West Local Government Area of Rivers State- Nigeria

Ukpere, D.R.T. (Ph.D) and Ajie, Vivian Ukeame
Department of Geography and Environmental Studies, Faculty of Social Sciences,
Ignatius Ajuru University of Education, Rumuolumeni P.M.B. 5047 Port Harcourt
dennis4jesusxt@gmail.com
Corresponding author: ukperedennis4life@yahoo.com
DOI: 10.56201/ijssmr.v10.no7.2024.pg247.269

Abstract
This study examined potential rural service centres as engines for rural development in Ahoada West Local Government Area. Three objectives, three research questions and one hypothesis guided the study. The descriptive survey research design was adopted. Through the use of purposive sampling technique, a structured questionnaire was used to collect data from 400 respondents from twenty (20) selected potential service centres (communities) in the area. The data collected were analyzed using descriptive statistics and Shimbel Accessibility Index for the research questions, while the hypothesis was tested using z-test statistic. The findings revealed that Akinima, Akaramini, Idul, Mbiana, Okogbe, Ukperede, Oshi, Emezie, Oyakama, Oshika, Okaki and Ubeta are the potential settlements that need to be developed to the status of full rural service centres. These potential rural service centres can contribute to rural development to a very high extent. However, intra-communal conflict, theft, insecurity (youth restiveness, militancy, kidnapping), bad roads, and poor electricity supply are the current challenges in these potential rural service centres. The study recommended that government should help to provide basic infrastructures, tighten security, etc. so as to enable these service centres transmit development impulses to the surrounding villages and hamlets in the area.

Keywords: *Rural Areas, Service Centres, Rural Development, Ahoada West*

1. INTRODUCTION

The issue of rural development in Nigeria became more intense arising from the different movements and clarion call for true federalism, restructuring, regionalism and self-determination agitations. Thus, rural development has received much attention in recent times in view of the increasing rate at which young men and women migrate from the rural settlements to the urban centres. Rural development is crucial for the achievement of national development. The rural areas play a key role in the development of a nation. Most of the food sold in the urban areas today comes from the rural areas. Nnadozie (2007) stated that the rural areas supply food and herbal medicines for the substance of people living in the urban centres. Apart from the provision of food and raw materials for the pharmaceutical, textile and chemical industries, the rural areas provide job opportunities for a greater percentage of the nation's population. Many companies go to the rural areas to source for cheap labour and raw materials which they convert into other useful

products that satisfy needs. For instance, timber woods used in producing papers and furniture come from the rural areas. However, despite the contributions of the rural areas to industrialization and economic development, these areas have been neglected in terms of development.

The rural areas are often described by many scholars as settlements characterized by poverty, indecent shelter, limited educational and healthcare institutions, unsafe drinking water, electricity challenges, absence of large businesses and public institutions, poor remuneration system, infrastructural deficiency and limited communication system. There have been several attempts at rural development in Nigeria starting from the pre-independence movements to the start of first Republic to the fourth and fifth Republics. It is often argued that wide spread illiteracy, poverty, hunger and diseases, absence of quality basic infrastructures such as water, roads, schools, electricity and health services are by no means having negative impact on rural development (Ogar et al., 2018).

The horrible situations in the rural areas have driven thousands of young men and women to the urban centres in search for quality standard of living. The urban centres have become so congested to the extent that they can hardly handle the rapid population growth in terms of employment and decent shelter. Presently, the urban centres can only accommodate a fraction of the rural immigrants in terms of employment while others who could not fit into the employment system have to depend on their relatives for survival or engage in petty trade, crafts and crime. As the urban centres become congested with rural immigrants, it becomes necessary for the government to focus on rural development (Eteng, 2005).

Rural development is a necessity for national development. Without the development of the rural areas, it will be difficult for Nigeria to achieve national development. For this reason, successive governments in Nigeria have come up with several plans to develop the rural areas across the country. A typical example is the National Development Plan which takes different stages such as the First National Development Plan of 1962-1968, the Second National Development Plan (1970-1974), the Third National Development Plan (1975-1980), the Fourth National Development Plan (1981-1985) and the Post Fourth National Development Plan (1986-1990). These plans were initiated by past governments to bring rapid development to the rural communities and achieve national development. A crucial part of these plans was the establishment of service centres (as local governments or districts headquarters) in the rural areas to provide essential services that will bring about rapid rural development.

Rural service centres are the growth points or settlements with relatively high intensity of functional magnitude and distinctiveness (Sarkar, 2018). The rural service centre strategy focuses on small centres for their own development and that of their hinter land (Oluwasola et al., 2008). The fundamental reason is for these centres to serve their surrounding territories in terms of cultural, commercial, administrative and other requirements (Sarkar, 2018). These centres generate two kinds of forces namely the centripetal and centrifugal forces which are indication of growth foci. Each of these rural service centres is seen as a centre of attraction and serves different purposes. Obeng (2006) stated that these centres provide essential public and commercial services to the people in the rural areas such as medical services, educational, postal and communication,

administrative, transportation, marketing and banking services. For development of the rural communities, these service centres are necessary for a country like Nigeria which has neglected the rural areas for too long in favour of the urban centres through its urban renewal programme. It is against this background that this study examined rural service centres as engines for rural development in Ahoada West Local Government Area of Rivers State.

A lot of studies (e.g. Obeng, 2006; Chazovachi & Chuma, 2013; Robinson, 2014; Kamar et al, 2014; Onyasi, 2005) etc. contented that, in contemporary Nigeria, the rural areas are lacking behind in terms of development hence, service centres are vital instruments for the transformation and development of the rural areas. However, none of these studies examined rural service centres as engines for rural development in Ahoada West Local Government Area of Rivers State. And Ahoada West Local Government Area is one of the numerous areas in Nigeria which is suffering from underdevelopment.

The Nigerian government is still struggling to develop the rural areas. There is still a wide gap between the rural and urban areas, and efforts made by the government to bridge this gap have been unsuccessful. The rural communities in Ahoada West Local Government Area of Rivers State are characterized by high poverty rate, lack of sustainable job opportunities, insecurity, poor healthcare facilities, poor quality of education, poor remuneration system, deficiency in infrastructures, and social amenities such as good roads, functional and clean water, to mention but a few (Ukpere, 2014; Onyasi, 2005). These horrible conditions have forced many young men and women to migrate to the urban centres where they can enjoy varieties of services and improve their living conditions. This challenge of rural-urban migration and its side effects on both the source region and the destination points is a general phenomenon across Nigeria (Ukpere, 2020).

More rural service centres need to be created to cater for the vast population of Nigerians living in the rural areas. Nnadozie (2007) noted that about 80% of Nigerians live in the rural areas where basic services are not adequately met. According to him, the provision of more service centres seems appropriate for the improvement of the quality of life of rural dwellers. However, the location of these service centres and the availability of infrastructural facilities in each centre play a key role in transforming the rural settlement into a mega city. The decision of where to locate rural service centres is vested in the hands of the government via the various ministries. And in doing so, there are fundamental questions that need to be addressed in the quest for the selection of possible rural service centers: Which of the settlements are more appropriate to locate service centres? What are the fundamental qualities or criteria to use in the selection process? To what extent can these service centres contribute to rural development? What are the challenges associated with these service centres in terms of fostering rapid development of the rural communities in the area?

Answers to these questions constitute the motivating factor behind this study.

Aim and Objectives of the Study

The aim of this study was to examine the place of rural service centres as engines for rural development in Ahoada West Local Government Area of Rivers State. The specific objectives are to:

1. Identify the most suitable potential settlements (based on set criteria) that can be developed to be service centres in Ahoada West Local Government Area.
2. Examine possible contributions of rural service centres to rural development in the Area.
3. Identify the challenges faced by the existing potential rural service centres in the area in order to foster rapid development of the rural communities.
4. Profer some solutions to eradicate or reduce these challenges in these centres.

Research Questions

In order to adequately address the objectives of the study, the following questions were raised:

1. Which of the settlements can serve as potential service centres that are capable of transmitting development impulses to the surrounding villages in the area?
2. In what ways can the potential rural service centres contribute to rural development in the area?
3. What are the current challenges faced by these potential rural service centres that might hinder development in the area?
4. What are the possible measures to take in order to eradicate or reduce these challenges in these centres?

Scope of the Study

Geographically, this study was limited to Ahoada West Local Government Area of Rivers State, Nigeria. It covers twenty (20) possible service centres (communities) in the local government area namely; Akinima, Akaramini, Oshika, Idu, Ubeta, Olokuma, Betterland, Emezie, Mbiama, Okogbe, Ikodu, Okaki, Oshi, Odiakwa, Otegwe, Ubia, Ochebele, Oyakama, Ukperede, and Ihuechi. Content wise, the study focuses on rural service centres and rural development. It covers the contributions of rural service centres to rural development; the settlements that can be developed to be rural service centres; and the challenges faced by the existing rural service centres in terms of fostering rapid development.

Study Area

Ahoada West Local Government Area of Rivers state is located at the north-western part of Rivers State. The local government is bounded by the following Local Government Areas: at its east by Ahoada East, Ogba/Egbema/Ndoni in the North, Abua/Odual in the South, and Yenagoa of Bayelsa State in the West. It lies between latitudes $4^{0}33'$ and 5^{0} 23'N and longitude $6^{o}24'$ and $6^{0}59'$E. The seat of the local government is in Akinima town. Much of the area is occupied by the Bayelsa National Forest. It is approximately 361km^2 in size and a population of 360,006 in 2019 (NBS, 2019 estimates) (See figure 1).

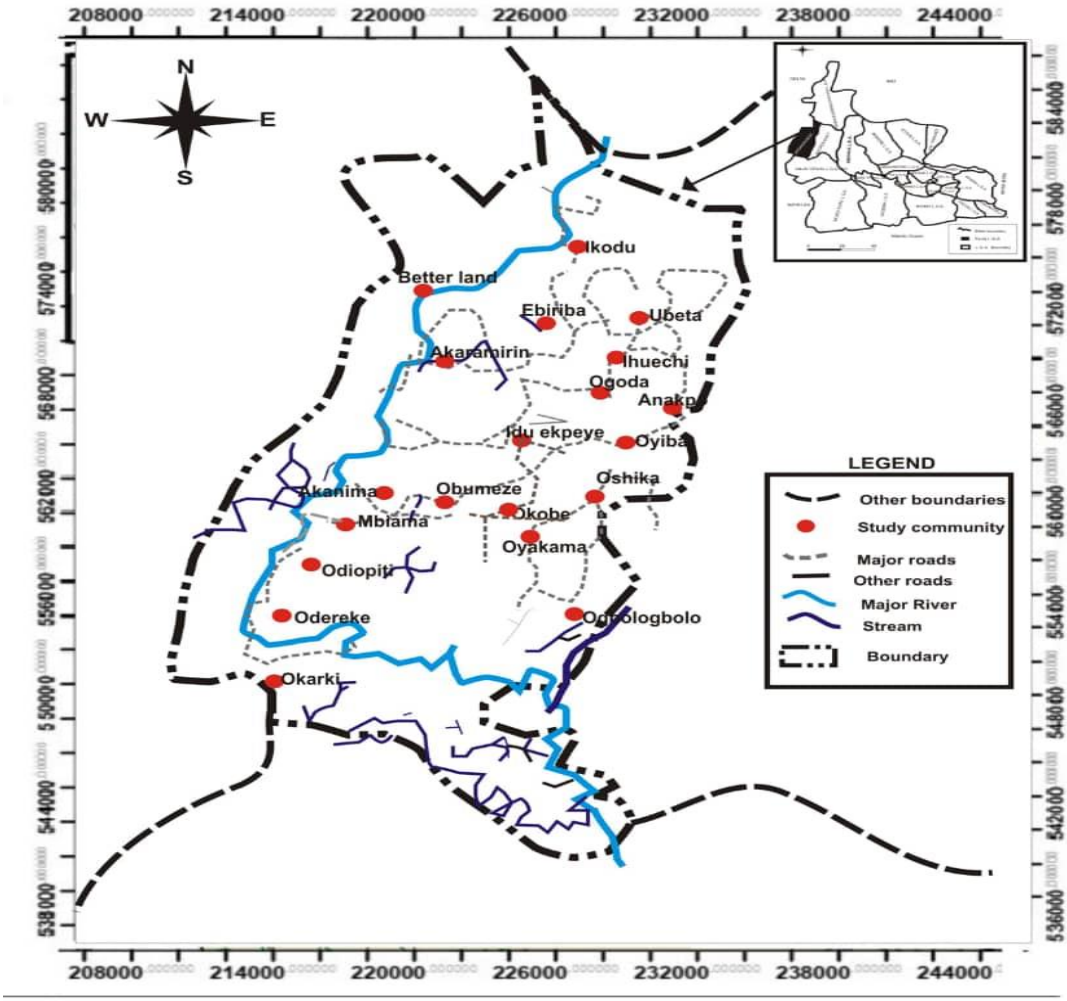

Figure 1.2: The Study area (Ahoada West) showing settlements
Sources: Digitized from the original map, rivers State ministry of lands and survey, P.H.

LITERATURE REVIEW

Conceptual Clarifications

Concept of Rural Service Centre

Rural service centre is often described as a way of ensuring rapid trickling down of development impulses to the rural areas. Leader (2006) defined rural service centres as rural pivotal points with sonic social and economic events (e.g. trading, transportation, communication, education, administration, health, etc.) which attract persons around. He further used population criterion of 10,000 to 20,000 people with the above characteristic to determine a service centre. These places may not designate as urban because of the lack of urbanized utilities in them and low population of the area. Shanrnugani (2003) defined rural service centres as the main foci for the dissemination of external influence to the majority of the rural populace and resulting ground for incipient He further stated that these centres may be chosen or developed as framework for the development of social service which ensures a natural distribution throughout a place through which ideas are to

be channeled with hope of stimulating changes in areas around the centre. The Food and Agriculture Organization (FAO, 2012) remarks that the idea of service centre developed from growth centre theory of urban development. Development experts advocate for service centres as a strategy for rural and regional development in Africa (Sarkar, 2018; Rani and Kakkar, 2018).

Rural Development

Various definitions have been attributed to rural development in literature. For instance, Anaeto (2003) defined rural development as a process of improving the level of living of rural population, measured by housing, recreation facilities, health, education employment opportunities and security. Olajide (2010) defined rural development as means for the provision of basic amenities, infrastructure, improved agriculture productivity and extension services and employment generation for rural dwellers. The World Bank (2000) defined rural development as strategies and policies designed at improving the economic and social life of a specific group of people (rural poor). In his opinion, Ukpere (2014) defined rural development as a well-planned and defined pragmatic and proactive plan of action and programme of activities designed to foster peace, comfortability and development of the rural areas through the provision of basic amenities and infrastructures, free access to sustainable means of livelihood, adequate security and prospects for equal rights and justice.

Theoretical Review

This study is anchored on the central place theory and the growth pole theory. These theories are discussed below:

Central Place Theory

The central place theory was developed by Walter Christaller in 1933. The theory explains the size, number and location of human settlements in a residential system (Openshaw & Veneris, 2003). Christaller argued that settlements function as "central places" which provide services to the surrounding areas. Christaller studied central place in southern Germany and discovered pattern in settlement location of towns and order in the crystallization of mass' around nucleus which results to a hierarchical structure of human settlement. Recent studies (e.g. Ogar et al., 2018; Sarkar, 2018; Rani & Kakkar, 2018) on rural service centres and rural development showed the usefulness of central place theory in understanding the spatia1 structure of service location. The theory is concerned with the behaviours of a single centre and the behaviour of the system as a whole. This theory relates central places to the hinterland (Sarkar, 2018). It explains the distribution, number and size of a settlement. The theory analyses how settlements relate naturally to another based on the key concept of centrality. Centrality of a place is defined as the degree to which a settlement serves its hinterland or the comparative significance of places to complementary regions it serves (Ukpere, 2014). Rani et al. (2018) saw the central place theory as very useful in understanding the location of rural service centres.

Growth Pole Theory

The growth pole theory was developed by Francois Perroux and Jacques Boudeville in 1955. The theory is considered as one of the earliest regional development theories. The growth pole theory stresses the role of propulsive and their impact on the development of their milieu (Wojnicka-Sycz, 2017). The theory attempts to explain how modern process of economic growth deviated

from the stationery conception of equilibrium growth (Sinha, 2016). Francois Perroux observed that growth does not appear everywhere and all at once, it appears in points or development poles, with variable intensities, it spreads along diverse channels and with varying terminal effects to the whole of the economy. The central idea behind the growth pole theory is that economic development or growth is not uniform over an entire region, but instead takes place around a specific pole or cluster.

Globally, the strategies of growth pole theory were first tested in the early parts of the 20th century constituting a 'dogma". Majority of the developments that occurred regionally was aimed at growth and enlargement accompanied with industrialization in growth poles having the basics (market, labour force, external economics, and infrastructure) to attract and operate large industrial complexes (Sinha, 2016). This facilitates concentrations on growth using growth poles to implement regional development policies. Many nations after the World War II used the growth pole theory for their development. These nations include Venezuela, United States, Spain, Peru, Italy, Great Britain, France, Bolivia, Belgium, Austria, etc. (Friedmann and Weaver cited in Wojnicka-Sycz, 2017). Later, there was evolution of the theory which resulted in the growth of economic processes in ten (10) concentrations spatially.

Role of Rural Service Centres in Rural Development

It is often argued that rural service centres serve settlement stabilization and transmission of development. And that for rural service centres to stabilize rural settlements and stem out migration, they carry out two primary roles: rendering supporting services that hold settlements collectively; and transfer growth. Leader (2006) opined that rural service centres provide majority of the services which are decentralized from biggest urban areas and social nexus for the surrounding villages. Sinha (2016) observed that rural service centres act as centres for the supply of social services to the surrounding rural hinterland. He buttressed this point further by citing the Kanja's Development Plan 1970-74, where a network of health centres and other services were based on the grouping of several small communities to centres with a total population of over 20,000 people. As a matter of fact, service centres perform the role of providing central places for trading goods and services which could otherwise have not been possible at the individual community level due to lack of threshold population. Rural service centres brings about rapid development to the rural communities through the provision of essential services that will improve the living condition of the people.

METHODOLOGY

The study adopted the descriptive survey research design. The population of this study consisted of all the 64 settlements in Ahoada West Local Government Area of Rivers State (Information Unit, Ahoada West Local Government Council Secretariat, 2019). However, the accessible population of this study comprised all settlements with 3,000 persons and above. Twenty (20) settlements met this minimum criteria and they include: Akinima (4,097), Akaramini (4,097), Oshika (4,053), Idu (3,446), Ubeta (4,366), Olokuma (3,323), Betterland (3,117), Emezie (3,111), Mbiama (4,645), Okogbe (4,700), Ikodu (3,446), Okaki (6,310), Oshi (5,739), Odiakwa (4,373), Otegwe (3,223), Ubia (3,521), Ochebele (3,116), Oyakama (3,000), Ukperede (4,053), and Ihuechi (4,327).

A sample size of 400 persons comprising men and women between the ages of 30-59 years was drawn from the twenty (20) selected settlements/communities in the area using proportionate sampling technique. A total of 396 valid copies of structured questionnaire was used for data collection across the 20 selected communities in the area. The data collected were analyzed using descriptive statistics, Shimbel Accessibility Index and z-test statistics for the hypothesis.

RESULTS AND DISCUSSION

Research Question 1

Which of the settlements can be developed to a potential rural service centre that is capable of transmitting development impulses to the surrounding villages and hamlets in Ahoada West local government area?

Table 1: Shimbel Accessibility Index

N		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	Shimbel Index	Rank
1	Akinima	0	1.5	4	3.6	7.4	6.2	5.2	1.5	1.4	2.5	4.7	3.3	3.6	5.8	5.4	3.3	4	4.6	2.9	5.7	77	7th
2	Akaramini	1.5	0	3.9	2.8	4.7	4.5	2.6	1.3	2.8	3.8	5.9	6	2.3	4.9	6.8	3.4	2.5	5.9	2.7	4.3	73	6th
3	Oshika	4	3.9	0	1.4	4	5.8	5.7	2.6	4.9	4	5.2	6.8	2.8	2.5	6.8	1.1	4.5	5.2	1.3	4.4	77	8th
4	Idu	3.6	2.8	1.5	0	3.5	4.4	4.3	2.1	4.6	4.3	6	7	1.4	2.3	7.4	1.8	3	4.9	1	3.2	63	1st
5	Ubeta	7.4	4.7	4	3	0	2.6	4.5	6.3	7.2	7.3	9	10.3	2.4	2	10.4	4.9	3	8	4	1	90	12th
6	Olokuma	6.2	4.5	7.6	4.5	2.5	0	3	5.3	7.4	8.1	10.1	10.5	3.3	4.6	11.2	6.3	2.1	9	5.3	1.7	101.8	17th
7	Betterland	5.2	2.6	5.7	4.4	4.5	3	0	3.8	5	6.3	8.4	8.3	3	5.6	9.3	5.6	1.7	7.4	4.6	3.7	102	18th
8	Emezie	1.5	1.3	2.6	2.1	3.7	5.4	4	0	2.5	2.5	4.7	4.6	3.5	5	5.8	1.7	4.6	3.9	1.4	4.6	64	2nd

9	Mbiama	1.4	2.8	4.7	4.6	7.3	7.4	5	2.5	0	1.8	3.9	3.3	4.3	7.8	4.3	3.9	5.2	3	3.9	7	89	11th
10	Okogbe	2.5	3.8	4	4.3	7.3	8	9.3	2.6	1.8	0.2	2	3.2	5	6.4	3.6	2.9	6	1.2	3.3	7.2	81	9th
11	Ikodu	4.7	5.9	5.2	6	8.5	10	8.5	4.6	3.8	2.4	0	6.9	7.2	6.9	1.8	4.2	8.1	1	5	9	98	16th
12	Okaki	3.3	6	6.8	7.2	8.4	1.5	8.3	5.2	3.2	2.6	2.3	0	7.6	9.2	1.5	5.6	8.5	2.7	6.8	10	122	20th
13	Oshika	3.6	2.3	2.3	1.4	2.5	3.4	3.1	2.3	4.7	5.6	6.8	1.6	0	2.7	8.2	3.1	1.6	5.8	2.1	2.2	72	5th
14	Odiakwa	5.8	4.9	2.6	2.7	2.0	4.5	5.8	4.2	6.8	6.2	7.9	9.1	2.7	0	9.3	3.5	4.0	6.7	3	2.7	93	13th
15	Otegme	5.4	6.8	6.7	7.4	10.3	10.7	9.3	5.8	4.3	3.2	1.6	1.4	8.2	9.2	0	5.6	9.1	2.5	6.3	10.3	120	19th
16	Ubia	3.3	3.4	1.1	1.7	4.6	6.3	5.6	1.1	3.9	2.8	4.2	5.7	7.4	3.6	5.7	0	4.6	3.3	0.7	5	69	4th
17	Ochebele	4	2.5	4.4	3.0	2.9	2.2	11.6	3.4	5.2	6.2	8	8.4	3.2	4.0	9.2	4.7	0	7	3.6	2.2	86	10th
18	Oyakama	4.6	5.9	4.4	4.9	8.0	8.9	7.8	3.5	3.1	1.1	1	2.7	16	6.7	2.5	3.1	7.0	0	3.9	8	95	14th
19	Ukperede	2.9	2.7	1.2	2.0	4.1	5.3	4.8	1.4	3.9	3.4	5	6.2	5.7	2.1	6.2	0.9	3.6	3.7	0	4.1	65	3rd
20	Ihuechi	5.7	4.3	4.4	3.2	0.8	1.7	3.6	4.6	7.0	7.3	9	1.8	2.2	2.3	10.5	5.0	2.1	8	4.1	0	96	15th

Source: Researchers' Fieldwork, 2024

Table 1 shows the Shimbel Accessibility Index of all the twenty settlements considered suitable to be developed into potential service centres. From the Shimbel Accessibility Index, it was revealed that Idu has the lowest index of 63 and is therefore considered as the most accessible settlements of all the twenty communities. This is followed by Emezie with an accessibility index of 64 while Ukperede, 65, Ubia, 69, Oshika, 72, Akaramini, 73, Akinima and Oshika with 77 each, Okogbe,

81, Ochebele, 86, Mbiama, 89, Ubeta, 90, Olokuma, 101.8, Betterland, 102, Otegme, 120, and Okaki, 122 based on this analysis.

Table 2: Numbers of linkages and distance (in km) of potential service centres from the Local Government Headquarters (Akinima)

S/No.	Service Centres	Number of Linkage	Distance from L.G.A Headquarter (Km)
1	Akinima	5	0
2	Akaramini	4	5
3	Oshika	2	9
4	Idu	5	8
5	Ubeta	5	20
6	Olokuma	3	15
7	Betterland	2	3
8	Emezie	7	4
9	Mbiama	4	3
10	Okogbe	3	6
11	Ikodu	3	11
12	Okaki	2	7
13	Oshika	3	7
14	Odiakwa	3	13
15	Otegme	2	13
16	Ubia	3	8
17	Ochebele	3	10
18	Oyakama	4	9
19	Ukperede	3	7
20	Ihuechi	4	2

Source: Researchers' fieldwork. 2024

Table 2 shows the number of linkage of the service centres and their distance from the local government headquarters. From the table, eight centres have high linkages. These are: Emezie with 7 linkages, followed by Idu and Ubeta with 5 linkages each, while Akaramini, Mbiama, Oyakama and Ihuechi have 4 linkages each. These centres are distanced from local government headquarter (Akinma) with Emezie, Idu, Ubeta, Akaramini, Mbiama, Oyakama and Ihuechi having a distances of 4km, 8km, 20km, 5km, 3km, 9km and 2km respectively. Others are Oshika, 9km, Olokuma,15km, Betterland, 3km, Okogbe, 6km, Ikodu, 11km, Okaki, 7km, Oshika, 7km, Odiakwa, 13km, Otegma, 13km, Ubia, 8km, Ochebele, 10km, and Ukperede, 7km, while Akinima is located at the local government headquarter.

From the above analysis, Emezie, Idu, Ubeta, Akaramini, Mbiama, Oyakama and Ihuechi have higher connectivity than other centres. However, centres such as Ubeta, Odiakwa, Otegma, Ikodu, Ochebele, Oyakama, Oshika, Ubia, Idu and Ukperede are far from the local government

headquarter and as such the influence of Ahoada West local government headquarter is not felt much in the area. Therefore, these centres are more ideal for a service centre because of their centrality for spreading development impulses.

Table 3: Travel distances in (km) between potential service centre and other settlements in the study area

	Service Centres	Distances (km) from the Local Government Headquarter																				Total Travel Distance
1	Akinima	0	6	9	8	14	14	9	3	3	6	9	9	9	14	12	7	11	8	7	13	171
2	Akaramini	3	0	9	7	12	11	6	4	7	9	14	14	9	12	16	8	6	7	6	8	168
3	Oshika	9	9	0	4	9	12	14	4	11.3	9	13	16	7	6	15	2	10	10	3.5	13	177
4	Idu	8	7	5	0	8	10	10	5	10	10	14	16	5.3	5	16.5	5	7	13	2	7	163.8
5	Albeta	13	10	4	7	0	7	10	10	8	18	23	28	6	5	54	2	7	20	9	5	256
6	Olokuma	14	14	10	10	6	0	7	12	16	18	34	54	8	9	55	8	9	16	7.2	7	314.2
7	Betterland	9	7	11	11	11	7	0	11	13	14	19	20	7	13	21	13	4	17	14	8.2	227.2
8	Emezie	3.5	3.5	6	4	13	12	9	0	6	15	20	13	10	9	14	5	7	8	3.2	9	170.2
9	Mbiama	2	4	12	12	16	17	13	5	6	0	9	7	13	15	10	9	13	7	8	16	194
10	Okogbe	4	8	9	10	17	18	14	7	3	0	8	6	12	16	7	15	14	2	8	17	193.3
11	Ikodu	11	12	12	14	21	23	19	12	9	6	0	6	15	18.3	5	12	18	2	13	25	253.3
12	Okaki	10	14	16	16	23	25	21	14	8	7	5	0	17	22	3.5	18	18	12	12	18	279.5
13	Oshi	8	6	7	4	6	7	7	4.5	11	14	18	17	0	6	18.3	7	5	12	5	5	154.8
14	Odiakwa	12	10	6	5	5	13	12	9	14	15	19	21	19	0	8	9	9	13	8	8	215
15	Otegme	12	16	16	17	24	25	22	15	10	7	3.4	4	10	23	0	12	21	5	13	24	279.4
16	Ubia	7	8	2	4.3	13	12	13	4.3	9	7	11	13	9	8	12	0	10	8	2	13	165.6
17	Ochebele	9	5	9	7	17	5	3	8	12	12	19	19	13	9	21	11	0	15	9	5	178
18	Oyakama	8	12	9	11	18.2	17	17	9	7	2	2	6.8	12	16	6	7	5	0	9	10.3	186
19	Ukperede	7	6	5	2	9	11	10.2	5	9	8	13	12	5	17	16	12	8	9	0	10	225.5
20	Ihuechi	12	9	9	8	2	4.5	8	13	16	16	21	24	8	5	24	12	5	21	9	0	226.5

Source: Researchers' Fieldwork and analysis, 2024

Table 3 shows the total travel distances (km) to the twenty potential service centres. The mean distances of each service centre is calculated and presented in table 4 below:

Table 4: Mean travel distance and number of socio-economic facilities in the study area

Service Centres	Rank	Mean Travel Distance	Rank	No. of Socio-economic facilities
1	6th	8.55	6th	90
2	4th	8.40	4th	40
3	7th	8.85	7th	40
4	2nd	8.19	2nd	60
5	17th	12.80	17th	70
6	20th	15.71	20th	40
7	15th	11.36	15th	50
8	5th	8.51	5th	50
9	11th	9.70	11th	30

10	10th	9.67	10th	50
11	16th	12.67	16th	40
12	19th	13.98	19th	50
13	1st	7.74	1st	50
14	12th	10.75	12th	50
15	18th	13.97	18th	50
16	3rd	8.28	3rd	50
17	8th	8.90	8th	50
18	9th	9.30	9th	50
19	13th	11.27	13th	50
20	14th	11.33	14th	60

Source: Researchers' Fieldwork and analysis, 2024

Table 4 presents the total travel distances (km) and the mean travel distances to the twenty potential service centres. The table shows that there is difference in the accessibility level among the twenty potential service centres. The result shows that the Oshi centre is the most accessible service centre with 7.74km. This is followed by Idu with 8.19km, Ubia with 8.28, Akaramini with 8.40km, Emezie with 8.51km, Akinima with 8.55km, Oshika with 8.85km, Ochebele with 8.90km, Oyakama with 9.30km, Okogbe with 9.67, Mbiama with 9.70km, Odiakwa with 10.75km, Ukperede with 11.27km, Ihuechi with 11.33km, Betterland with 11.36km, Ikodu with 12.67km, Ubeta with 12.80km, Otegwe with 13.97km, while Okaki and Olokuma have 13.98km 15.71km respectively.

Table 5: Weighted facility index

Community	Population	Rank	Total facility points	Weighted facility index	Rank
1	4,097	9th	90	368	1st
2	4,097	9th	40	163	10th
3	4,053	10th	40	162	11th
4	3,446	5th	60	137	19th
5	4,366	8th	70	305	3rd
6	3,323	12th	40	132	20th
7	3,117	15th	50	155	14th
8	3,111	17th	50	155	16th
9	4,645	4th	30	139	17th
10	4,700	3rd	50	235	6th
11	3,446	10th	40	137	18th
12	6,310	1st	50	315	2nd
13	5,739	2nd	50	286	4th
14	4,373	6th	50	218	7th
15	3,223	13th	50	161	12th
16	3,521	11th	50	176	9th

17	3,116	14th	50	155	13th
18	3,000	18th	50	150	15th
19	4,053	10th	50	202	8th
20	4,327	7th	60	259	5th

Source: Researchers' Fieldwork and analysis, 2024

Table 6: Perception on facility location of frequency visit

Communities		**Rank**		**Rank**		**Rank**
1	9	2nd	10	1st	8	3rd
2	7	4th	9	2nd	7	4th
3	7	4th	7	4th	8	3rd
4	10	1st	9	2nd	9	2nd
5	9	2nd	8	3rd	8	3rd
6	6	5th	5	6th	5	6th
7	7	4th	6	5th	7	4th
8	7	4th	6	5th	5	6th
9	10	1st	10	1st	10	1st
10	9	2nd	8	3rd	10	1st
11	5	7th	3	7th	7	4th
12	10	1st	8	3rd	7	4th
13	5	7th	7	4th	6	5th
14	7	4th	8	3rd	7	4th
15	9	2nd	6	5th	7	4th
16	7	4th	7	4th	5	6th
17	5	7th	6	5th	5	6th
18	7	4th	6	5th	7	4th
19	10	1st	8	3rd	7	4th
20	8	3rd	8	3rd	7	4th

Source: Researchers' Fieldwork and analysis, 2024

Tables 5 and 6 showed the weighted facility index of the service centres and the perceptions of residents on facility location that is visited frequently. In terms of weighted facility, Akinima is ranked 1st out of the 20 communities with a weighted facility index of 368 while Olokuma is ranked 20th with a weighted facility index of 132. In terms of perceptions regarding the facility location that is frequently visited, Okogbe is ranked 1st among the 20 settlements.

Table 7: Presence of Socio-economic Facilities

Communities	Pri. Sch.	Sec. Sch.	Mkt.	Post Off.	Police Station	Court	Bank	Health Centre	Tourism Centre	L.G Hqtrs.	Total	Rank
1	10	10	10	10	10	10	-	10	10	10	90	1st
2	10	10	10	-	-	-	-	10	-	-	40	5th
3	10	10	10	-	-	-	-	10	-	-	40	5th
4	10	10	10	-	10	-	-	10	10	-	60	3rd
5	10	10	10	10	10	-	-	10	10	-	70	2nd
6	10	10	10	-	-	-	-	10		-	40	5th
7	10	10	10	-	-	-	-	10	10	-	50	4th
8	10	10	10	-	-	-	-	10	10	-	50	4th
9	-	-	10	-	-	-	-	10	-	-	30	6th
10	10	10	10	-	-	-	-	10	10	-	50	4th
11	10	10	10	-	-	-	-	10	10	-	40	5th
12	10	10	10	-	-	-	-	10	10	-	50	4th
13	10	10	10	-	-	-	-	10	10	-	50	4th
14	10	10	10	-	-	-	-	10	10	-	50	4th
15	10	10	10	-	-	-	-	10	10	-	50	4th
16	10	10	10	-	-	-	-	10	10	-	50	4th
17	10	10	10	-	-	-	-	10	10	-	50	4th
18	10	10	10	-		-	-	10	10	-	50	4th
19	10	10	10	-		-	-	10	10	-	50	4th
20	10	10	10	-	10	-	-	10	10	-	60	3rdth

Source: Researchers' Fieldwork and analysis, 2024

Table 7 shows the communities with the presence of socio-economic facilities. From the table, it is observed that Akinima is ranked 1st out of the 20 communities as the highest community with the presence of socio-economic facilities while Mbiama is the least in terms of the presence of socio-economic facilities.

Table 8: Analysis of Ranks of Different Criteria for the Centres

Centres	Shimbel Accessibility	No. of linkages	Mean of travel distance	No. of socio-economic facilities	Weighted facility index	Perception on facility location	Frequency of visits	Convenience in utilizing central facilities	Population	Distance from L.G.A headquarters	Mean of rank	
1	7th	2th	6th	1st	1st	2nd	1st	3rd	9th	1st	33	1st
2	6th	3rd	4th	5th	7th	7th	2nd	4th	9th	4th	51	6th
3	8th	5th	7th	5th	8th	7th	4th	3rd	10th	8th	65	11th
4	1st	2nd	2nd	3rd	13	1st	2nd	2nd	5th	7th	38	2nd
5	12th	2nd	18th	2nd	3rd	2nd	3rd	3rd	8th	13th	66	12th
6	16th	4th	20th	5th	14th	5th	6th	6th	12th	12th	95	16th
7	17th	5th	16th	3rd	19th	4th	1st	4th	15th	2nd	86	15th
8	2nd	1st	5th	2nd	19th	4th	3rd	6th	17th	3rd	62	8th
9	11th	4th	12th	5th	12th	1st	7th	1st	4th	2nd	59	7th
10	9th	4th	11th	4th	5th	2nd	3rd	1st	3rd	6th	48	4th
11	15th	5th	17th	4th	11th	7th	4th	4th	12th	5th	66	12th
12	19th	5th	19th	6th	2nd	1st	3rd	4th	1st	5th	65	11th
13	5th	4th	1st	4th	4th	7th	4th	5th	2nd	11th	47	3rd
14	13th	4th	13th	5th	5th	4th	3rd	4th	6th	11th	68	14th
15	18th	5th	3rd	4th	6th	2nd	5th	4th	13th	7th	67	13th
16	4th	4th	9th	4th	9th	4th	4th	6th	11th	9th	64	19th
17	10th	4th	10th	4th	10th	1st	5th	6th	18th	9th	67	13th
18	3rd	3rd	14th	4th	4th	4th	5th	4th	14th	8th	63	9th
19	3rd	4th	14th	4th	2nd	1st	3rd	4th	10th	5th	50	5th
20	14th	3rd	15th	2nd	3rd	3rd	3rd	4th	7th	10th	64	10th

Source: Researchers' Fieldwork and analysis, 2024

Table 8 shows the ranks of different criteria for chosen the service centres. The analysis from the table reveals that based on the combination of criteria such as accessibility, number of linkages, travel distance, number of socio-economic facilities, weighted facility index, population, convenience in utilizing central facilities, distance from the local government headquarter, frequency of visits and respondents' perception about the twenty centres, twelve out of the twenty centres were chosen as potential rural service centres for planned development. These centres include Akinima, Akaramini, Idul, Mbiana, Okogbe, Ukperede, Oshi, Emezie, Oyakama, Oshika, Okaki and Ubeta. These centres or settlements have a low mean rank score of the ten criteria. The twelve centres were chosen because they have high accessibility and connectivity indices which mean that they are more accessible and central to transmit developmental impulse to the surrounding villages and hamlets in Ahoada West L.G.A. than the other eight centres. These

twelve centres have a high population threshold, high weighted facility index and the perception of the rural people highly favoured these settlements as service centres.

Table 9: Functional facilities in the twelve selected centres

S/N	Identified Rural Service Centres	Existing Facilities	Needed Facilities
1.	Akinima	Primary school, secondary school, markets, post office, court, tourist centres, local government headquarter, health centre, good road	Court, bank, police station, more tourist centres
2.	Akaramini	Primary school, secondary school, mini market, health centres	Police station, court, big market, good road network, bank
3.	Idul	Primary school, secondary school, health centres, police station, good road	Bank, court, more tourist centre, big market
4.	Mbiana	Market, good road, health centre, primary school, secondary school	Secondary school, court, police station, bank, post office
5.	Okogbe	Primary school, secondary school, health centre, tourist centre, good road network	Court police station, bank, more school, post office, electricity, hospital
6.	Ukperede	Primary school, secondary school, market, health centre, good road, tourist centre	Bank, police station, post office, more tourist centre, hospital
7.	Oshi	Primary school, secondary school, market, health centres	Court, police station, post office, hospital, bank, good road network
8.	Emezie	Primary School, Secondary School, Market, Health Centres	Bank, Court, Tourist Centres, Post Office, Hospital
9.	Oyakama	Primary School, Health Centres, Mini Market, Good Road	Secondary School, Health Centres, Police Station, Post Office, Courts
10.	Oshika	Primary School, Secondary School, Health Centres, Good Road	Bank, Court, Police Station, Post Office, Big Market
11.	Okaki	Primary School, Secondary School, Health Centre, Market	Bank, Court, Post Office, Police Station
12.	Ubeta	Primary School, Secondary School, Market, Health Centres, Police Station, Existing Facilities	Bank, Police Station, Court, Hospital, Post Office, Needed Facilities

Source: Researchers' Fieldwork and analysis, 2024

Table 9 shows the existing facilities in the twelve (12) identified rural service centres and the facilities that are needed in these centres. The table indicates that primary school, secondary school, markets, post office, court, tourist centres, local government headquarter, healthcare facilities and good road are the existing facilities in the twelve (12) rural service centres while the major facilities needed in these service centres are police stations, banks and electricity.

Research Question 2
In what ways can the potential rural service centres contribute to rural development in the area?

Table 10: Responses on the ways service centres can contribute to rural development in the area

S/No	Ways service centres can contribute to rural development in the area	SA	A	D	SD	Total
1.	The potential rural service centres can contribute towards improving the living conditions of the people in the area.	217 (55%)	140 (35%)	25 (6%)	14 (4%)	396 (100%)
2.	The potential rural service centres can help to provide essential public and commercial services to the people in the area.	221 (56%)	133 (34%)	30 (7%)	12 (3%)	396 (100%)
3.	The potential rural service centres can help to provide employment to the people in the area.	204 (51%)	147 (37%)	27 (7%)	18 (5%)	396 (100%)
4.	The potential rural service centres can help to reduce the level of poverty among the people in the area.	200 (51%)	151 (38%)	32 (8%)	13 (3%)	396 (100%)
5.	The potential rural service centres can help to improve the health status of the people in the area.	185 (47%)	144 (36%)	36 (9%)	31 (8%)	396 (100%)
6.	The potential rural service centres can contribute towards reducing the level of illiteracy among the people in the area.	179 (45%)	156 (39%)	33 (8%)	28 (7%)	396 (100%)
7.	The potential rural service centres can help to attract population inflow to the area, thereby boosting commercial activities.	226 (57%)	130 (33%)	24 (6%)	16 (4%)	396 (100%)
8.	The potential rural service centres can help to improve the social welfare of the people in the area.	220 (55%)	142 (36%)	22 (6%)	12 (3%)	396 (100%)

Source: Researchers' Fieldwork and analysis, 2024

Table 10 presents the responses received from the respondents on the extent to which the potential rural service centres can contribute to rural development in the area. From the table, it is observed that majority of the respondents in Ahoada West Local Government Area agreed with the items listed in the table with their percentage greater than those who disagreed with the items listed in the table. Therefore, it is accepted that the potential rural service centres can contribute to rural development to a very high extent in terms of improving the living conditions of the people, provide essential public and commercial services to them, create employment opportunities, reduce their poverty level, improve their health status and social welfare, and attract population inflow to the area which will eventually boost commercial activities.

Research Question 3

What are the current challenges in these potential rural service centres in Ahoada West local government area that might hinder the development in the area?

Table 11: Respondents' Responses on the current challenges in the proposed rural service centres in the Area

S/No	Challenges in potential rural service centres that might hinder development in the area	SA	A	D	SD	Total
1.	Poor electricity supply	196 (55%)	148 (35%)	37 (9%)	15 (4%)	396 (100%)
2.	Bad roads	213 (54%)	148 (37%)	20 (5%)	15 (4%)	396 (100%)
3.	Theft, militancy, kidnapping and general insecurity	230 (58%)	131 (33%)	22 (6%)	13 (3%)	396 (100%)
4.	Intra-communal conflict/crisis	225 (57%)	145 (37%)	16 (4%)	10 (2%)	396 (100%)
5.	Youth restiveness	206 (52%)	142 (36%)	29 (7%)	19 (5%)	396 (100%)
6.	Lack of sustainable peace	208 (53%)	135 (34%)	35 (9%)	17 (4%)	396 (100%)

Source: Researchers' Fieldwork and analysis, 2024

Table 11 shows the responses received from the respondents on the current challenges in the potential rural service centres in Ahoada West Local Government Area that might hinder the development in the area. From the table, it is observed that majority of the respondents agreed with the items listed in the table with their percentage greater than the percentage of those who disagreed with the items in the table. Hence, it is accepted that intra-communal conflict/crisis, theft, militancy, kidnapping, insecurity, bad roads, youth restiveness, lack of sustainable peace and poor electricity supply are the current challenges in the potential rural service centres in Ahoada West local government area that might hinder the development in the area.

Research Question 4

What are the possible measures to take in order to eradicate or reduce these challenges in these centres?

Table 12: Responses on the possible solutions or measures to eradicate or reduce these challenges in these centres

S/N	Measures to eradicate or reduce the challenges in these centres	SA	A	D	SD	Total
1.	Security should be tightened in these centres.	241 (61%)	141 (36%)	9 (2%)	5 (1%)	396 (100%)
2.	More police stations should be established in these centres.	214 (54%)	163 (41%)	12 (3%)	7 (2%)	396 (100%)
3.	There should be adequate provision of infrastructures in these centres,	235 (59%)	165 (42%)	11 (3%)	4 (1%)	396 (100%)
4.	There should be stable power supply in these centres.	216 (54%)	168 (42%)	8 (2%)	4 (1%)	396 (100%)
5.	Youth empowerment programmes should be provided in these centres.	219 (55%)	157 (40%)	12 (3%)	8 (2%)	396 (100%)
6.	More banks should be established in the centres.	207 (52%)	162 (41%)	17 (4%)	10 (3%)	396 (100%)

Source: Researchers' Fieldwork and analysis, 2024

Table 12 contains the responses received from the respondents on the possible solutions or measures to take in order to eradicate or reduce the challenges in the service centres in Ahoada West Local Government Area. From the table, it is observed that majority of the respondents in Ahoada West Local Government Area agreed with items listed in the table with their percentage greater than the percentage of those who disagreed with the items. Hence, it is accepted that tighten security, establishment of police stations and banks in these centres, provision of infrastructures, stable power supply and youth empowerment programmes are the possible measures to take in order to eradicate or reduce these challenges in these centres.

Discussion of Findings

Based on the result of the analysis carried out, it was confirmed that Akinima, Akaramini, Idul, Mbiana, Okogbe, Ukperede, Oshi, Emezie, Oyakama, Oshika, Okaki and Ubeta are the potential settlements that need to be developed to the status of rural service centres. This finding was derived from the result of the analysis carried out on the communities. The analysis covered the shimbel accessibility index, numbers of linkages and distance (in km) of potential service centres from the

Local Government Headquarters (Ahoada West), travel distances in (km) between potential service centre and other settlements in the study area, the mean travel distance and number of socio-economic facilities in the study area, weighted facility index, the perception on facility location of frequency visit, and the presence of socio-economic facilities. It is believed that these settlements have the potentials of transmitting development impulses to the surrounding villages and hamlets in Ahoada West L.G.A.

It was also discovered in this study that the potential rural service centres can contribute to rural development to a very high extent. This finding was deduced from the result of the analysis carried out on the responses received to research question two. The result of the analysis showed that majority of the respondents agreed with items listed in the table. Therefore, it is accepted that the potential rural service centres can contribute to rural development to a very high extent in terms of improving the living conditions of the people, provide essential public and commercial services to them, create employment opportunities, reduce the level of poverty among the people, improve their health status and social welfare, and attract population inflow to the area which will eventually boost commercial activities. This finding is in line with the research conducted by Onyasi (2005), Chazovachi and Chuma (2013) and Robinson (2014) who reported that rural service centres contribute significantly to rural development in Rivers State.

Intra-communal conflict/crisis, theft, militancy, kidnapping, insecurity, bad roads, youth restiveness, lack of sustainable peace and poor electricity supply are the current challenges in the potential rural service centres in Ahoada West local government area. This finding was derived from the result of the analysis carried out on the responses received to research question three. The result of the analysis showed that majority of the respondents in Ahoada West local government area agreed with the challenges listed above which implies that the above mentioned factors are the current challenges in the potential rural service centres in Ahoada West local government area. These challenges are believed to have hindered the development of the area. This finding is supported by Onyasi (2005) who noted that lack of poor steady power supply, bad roads, intra-communal conflict/crisis, theft, militancy, kidnapping, and general insecurity are the major obstacles hindering rural service centres from transmitting development impulses to the surrounding villages and hamlets in the rural areas.

Finally, it was discovered that tighten security, establishment of police stations and banks in these centres, provision of infrastructures, stable power supply and youth empowerment programmes are the possible measures to take in order to eradicate or reduce these challenges in these centres. This finding was obtained from the result of the analysis carried out on the responses received to research question four. The result of the analysis showed that majority of the respondents in the study area agreed with the measures listed above which implies that the above measures can help to eradicate or reduce these challenges in the service centres. This finding is supported by Robinson (2014) who suggested that intensifying security and providing adequate infrastructures and electricity will go a long way in reducing the challenges in the service centres.

Conclusions

Rural development is a pre-requisite for the achievement of national development in Nigeria. However, the rural areas have been neglected over the years in terms of development. This study demonstrated that the establishment of service centres in the rural areas can help to facilitate rapid development in Ahoada West local government area. The empirical results of this study clearly showed that the potential settlements/communities that need to be developed to the status of rural service centres are Akinima, Akaramini, Idul, Mbiana, Okogbe, Ukperede, Oshi, Emezie, Oyakama, Oshika, Okaki and Ubeta. These settlements are believed to have the potentials of transmitting development impulses to the surrounding villages and hamlets in the area. These potential rural service centres can contribute to rural development to a very high extent in terms of improving the living conditions of the people, provide essential public and commercial services to them, create employment opportunities, reduce the level of poverty among the people, improve their health status and social welfare, and attract population inflow to the area which will eventually boost economic and commercial activities.

Recommendations

Based on the findings and conclusion, the following recommendations are made:

1. The Federal Government should rehabilitate the existing rural service centres in Akinima, Akaramini, Idul, Mbiana, Okogbe, Ukperede, Oshi, Emezie, Oyakama, Oshika, Okaki and Ubeta in Ahoada West local government area so that they can function effectively and transmit development impulses to the surrounding villages and hamlets in the area.
2. Essential service institutions such as banks, courts and communication services should be concentrated in Akinima, Akaramini, Idul, Mbiana, Okogbe, Ukperede, Oshi, Emezie, Oyakama, Oshika, Okaki and Ubeta as they will attract population inflow to the area and facilitate rapid rural development in Ahoada West local government area.
3. Government should ensure that there is adequate power supply in Akinima, Akaramini, Idu, Mbiana, Okogbe, Ukperede, Oshi, Emezie, Oyakama, Oshika, Okaki and Ubeta communities as this would make this area more attracted to both local and international investors.
4. Government should address the issue of intra-communal conflict, theft, militancy, kidnapping, insecurity, bad roads and youth restiveness in Akinima, Akaramini, Idul, Mbiana, Okogbe, Ukperede, Oshi, Emezie, Oyakama, Oshika, Okaki and Ubeta communities since they hinder the efforts of the rural service centres in transmitting development impulses to the surrounding villages and hamlets in the area.

REFERENCES

Ahoada West Local Government Council (2019). Historical development of Ahoada West Local Government Area. Office of the Ministry of Information and Culture, Ahoada West L.G.A.

Anaeto, C.F. (2003). Concept of rural development in Nigeria: Issues, prospects, problems and solutions. *Nigerian Academic Forum, 4* (2), 71-85.

Chazovachi, B. & Chuma, M. (2013). Rural highway service centres and rural livelihoods diversity: A case of Ngundu halt in Zimbabwe. *Russian Journal of Agricultural and Socio-Economic Sciences*, 17 (5): 13-19.

Eteng, F.O. (2005). Rural development in Nigeria: Problems and remedies. *Sophia: An African Journal of Philosophy*, 8 (1): 65-71.

Food and Agriculture Organization (FAO, 2012) Economics and development, rural service centres in Sudan. AG2 Guides.

Kamar, Y.M., Lawal, N.I., Babangida, S.I. & Jahum, U.A. (2014). Rural development in Nigeria: Problems and prospects. *International Journal of Engineering and Science*, 3 (12): 24-29.

Leader, I.W. (2006). Rural service centres and centre for rural economy. *Journal of Sustainable Rural Development*, 6 (3): 75-88.

National Bureau of Statistics (NBS, 2019). Federation Account Allocation Committee. Office of the Accountant General of the Federation.

Nnadozie, U.O. (2007). The concept and process of rural development in Nigeria: A revisitation. *Lagos Historical Review*, 7 (1): 21-34.

Obeng, G.Y. (2006). Energy services for the rural poor: A comparative analysis of solar services centres and multifunctional platforms and lessons for Ghana. *Journal of Science and Technology*, *26* (2), 127-138.

Ogar, C. E., Dika, S.I. & Atanda, L. A. (2018). Challenges and prospects of information service delivery to rural people of Nigeria. *Research Journal of Library and Information Science*, *2*(3), 14-28.

Olajide, I. (2010). The role of local government in rural development issues. *Knowledge Review*, *20* (2), 30-38.

Oluwasola, O., Idowu, E.O. & Osuntogun, D.A. (2008). Increasing agricultural household incomes through rural-urban linkage in Nigeria. *African Journal of Agriculture Research, 3* (8), 566-573.

Onyasi, I.S.(2005). Rural service centres and rural development in Rivers State: A case study of Abua/Odual Local Government Area. Unpublished M.Sc. Thesis, Department of Geography, University of Port Harcourt, Nigeria.

Openshaw S. & Veneris Y. (2003). Numerical experiments with central place theory and spatial interaction modelling. *Environment and Planning, 35*(8): 1389–1403.

Rani, V.B. & Kakkar, N. (2018). Changing pattern of rural service centres in Karnal District (Haryana). *Journal of Sustainable Development in Africa*, *4* (3), 157-168.

Robinson, P. (2014). From rural service centres to systems of rural service delivery: Reformulation of the approach in the context of integrated development in South Africa. *International Development Planning Review*, *27* (3), 258-269.

Sarkar, S. (2018). Analysis of rural service centres using spatial database approach: A case study of Chandauli District, Uttar Predesh. *International Journal of Research and Analytical Reviews*, 5 (3), 1-12.

Shanrnugani, P. (2003). Rural service centres and development Impulse. *International Journal of Development Studies*, *38* (2), 182-196.

Sinha, D.K. (2016). The growth pole theory of Francois Perroux and Boudeville. Retrieved from: http://www.yourarticlelibrary.com

Ukpere, D.R.T. (2014). Access to safe water supply and development in Abua/Odual and Ahoada West Areas of Rivers State. Unpublished Ph.D Dissertation, GEM Department, University of Port Harcourt.

Ukpere, D. R. T. (2020). Growing insecurity and the security of food crop production in Rivers West Senatorial Districts. *The Epistles*, 6 (3), 13-29

Wojnicka-Sycz, E. (2017). Growth pole theory as a concept based on innovation activity, development and knowledge diffusion. Retrieved from: https://pdfs.semanticscholar.org.

World Bank (2000). Rural poverty under previewed: Problems and remedies.