

Effects of Socio-economic Indicators on Development of Rural Communities in Nigeria

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Abstract— This research assessed the effect of socio-economic development indicators on rural communities using Okigwe Local Government Area as a case study. The study is both descriptive and cross-sectional design with a sample size of eighty (80) respondents comprising of farmers, brick layers and quarry workers who were selected through purposive random sampling. The data used in this study were collected through a well-structured questionnaire and yearly record of activities from the respondents and cooperative societies. The result showcased that it was obvious that the indicators of socio-economic development in Okigwe L.G.A were Rock quarrying, Agricultural production and bricklaying. The figure showed that agricultural production is a steady activity engaged by a good proportion (54.17%) of respondents which help them to eke out a living. However, rock quarrying is another activity that majority (26.39%) of the respondents engage in to make ends meet. The result also showed that only few (19.44%) of the respondents engage in brick laying to meet their daily needs. Investment in agriculture, rock quarrying and block molding in the study area have recorded tremendous benefits stemming from boosting agricultural production, increase in workers take home pay, increase income generation etc. The farmers should be educated on how to maximize profit in farming operations and the respondents should be trained on how to gain access to grants from the government be it federal or state so as to boost their productivity.

Index Terms—Construction industry Socio-economic indicators, Increased productivity, Economic growth, Labor supply.

1. Introduction

The development of countries across the globe through capital and infrastructural projects remains the prime focus of the construction industry.

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These capital and infrastructural projects cut across all types of construction required for human habitation as well as those that address the demands of the human race economically which include but not limited to roads, bridges, railroads, and private and commercial real estate (Nwogu & Emedosi, 2024). The construction industry plays a crucial role in fostering economic growth through the fulfillment of key development goals such as generating output, creating employment opportunities, and generating income while also facilitating the redistribution of wealth. In addition to meeting one of the most fundamental needs of humans through its by-product; shelter, the construction industry is a significant global economic regulator, making about 13% of the GDP worldwide (P. C. Nwogu & Emedosi, 2024).

The construction of rural roads result in the speedy movement of men and material between producing centers and market-place. The surplus of the village produce can be conveniently transported at a cheaper Cost of transportation. It also ensures the farmer for the remunerative prices for their products and perishable Commodities like milk, vegetables, eggs, etc. The inhabitants also acquire other vehicles like cycle, scooter, tractor, etc.

The construction of rural road connections in its wake changes the life patterns also by bringing awareness of the modern means of living like cooking, dressing, recreation, etc. It infuses new ideas regarding the latest technological development in methods of farming; agro-industries, health care, etc (Fadyomi, 2018). It also results in better understanding of each other ideas and thus brings a change in attitudes. The construction of rural roads connections creates availability of opportunity for exchange of ideas and brings qualitative change in the pattern of living (Fadyomi, 2018). The connection of the villages to the road network results in setting up more Schools both at primary and middle level and increases the educational standard of the inhabitants of rural community. Not only the village students find it easier to go to their place of education, but good and efficient teaching staff is also attracted to these

village schools and thus the literacy level is increased and educational standards are improved (Fadyomi, 2018).

Construction of rural roads to connect the villages with the highway and nearby towns provides facilities to establish more health centers and dispensaries where the staff can function more effectively and attend to a greater number of persons by increasing their area of operation (FAO, 2015). This better health standard increases the production and creates better appreciation of family planning programme. On the other hand, with good connection of roads, more efficient and qualified doctors are also lured to work in the rural areas (Ijere, 2019). The cultivators in the village will be able to produce more agricultural produce by way of generated incentives for marketing their produce at low transportation cost and importing the fertilizer, manures and seeds at cheaper rate due to; the reduced cost of transportation to the village. Thus, the productivity of agriculture which is a dominant sector of our economy is increased (FAO, 2015).

Stone quarrying is one of the key economic activities in Okigwe, supplying the bulk of stone of varying aggregates to the construction industry within the district and beyond. It has been proved very efficient in strengthening the rural economy (Starkey, 2018).

Making of mud bricks is an essential economic activity in Okigwe. Mud bricks are made by mixing earth with water, placing the mixture into moulds and drying the bricks in the open air (Stommes and Brown, 2020). Straw or other fibres that are strong in tension are often added to the bricks to help reduce cracking. The most effective use of mud bricks in building healthy and environmentally responsible housing comes from understanding their merits and accepting their limitations. Although the use of earth construction is well established in energy efficient housing and is one of the oldest known building materials, much about its properties and potentials still remain undeveloped and poorly researched. However, with thick enough walls, mud brick can create load bearing structures to several floors high. Several efforts have been made to boost socio-economic development indicators in Okigwe with little progress and there is paucity of substantial data to quantify the efficiency of their performances in the area. It is against this backdrop that this study tends to assess the effect of socio-economic development indicators in Okigwe.

2. Contribution Of Quarrying to Rural Economic Development

Social development in our context refers to the provision of people-oriented infrastructures, programmes and policies geared toward improvement in health, education, living standard and quality of life of the people. Social and economic developments are often inter-related. The concept of economic development will imply jobs creation, income distribution, health, improvement, educational services and environmental sustainability of the community (Garry & Asokan, 2019).

It is expected that as the communities lose their farmlands and other means of livelihood to industries, they should in turn receive other benefits that compensate for their losses such as employment opportunities, provision of potable water supply, health services, educational services, better road network, and provision of electricity and establishment of subsidiary industries. The rock quarrying industries should bring about social and economic development in the affected communities such that the communities will not regret what they have lost (Oguntoye & Alani, 2018). By so doing the pareto optimality which ensures that some people are not worse off by the establishment of public or private industries is maintained.

3. Contributions Of Agriculture to Rural Development

Agricultural growth does contribute to poverty reduction, in several ways. (Irz et al., 2001) identify effects of agricultural growth on farm economy, rural economy and national economy. The effect on farm economy is achieved through higher incomes for farmers, including smallholders who constitute a large share of the rural poor, especially in Sub-Saharan Africa. It is also achieved through more employment as on-farm labour demand rises per hectare because the area cultivated increases or frequency of cropping increases. Positive effects on the rural economy are achieved by creation of more jobs in agriculture and the food chain. These include production links both “upstream” from the farm in demand for inputs and services for agriculture as well as “downstream” from the farm in the demand for processing, storage, and transport of produce (see section 2.3). But there are also consumption links as farmers and farm laborers spend their increased incomes on goods and services in the local (rural) economy. Finally, on a national level, an increase in agricultural output tends to decrease food prices and benefiting consumers and net purchasers of food (which may include farmers). Since the poor, both urban and rural spend a greater proportion of their incomes on food they benefit relatively more. Therefore, low food prices are often an objective of governments. The effect depends a great deal on the degree to which farm production is tradable and the associated price elasticity of demand. In many countries markets do not function well (see chapter 4) and infrastructure is inadequate. In such cases farm produce cannot be treated as a tradable and increased output leads to major decreases in output prices.

Rural development is understood primarily in the economic sense of the process of assuring a progressive improvement in economic security of people in rural areas. Rural areas are usually defined in terms of maximum population density, with figures varying from 150 to 500 inhabitants per square kilometer, depending on the structure of society. While any economic activity in rural areas will have the potential to contribute to rural development, the particular roles agriculture may play fall into four broad categories:

Provision of Employment. In countries whose share of

overall employment in agriculture is at high levels, for example where farmers represent over 50% of the workforce, agriculture is likely to be the key economic activity determining the progress of rural development. With such a substantial proportion of the labour force engaged in agriculture, any policy which led to a swift and artificial reduction in employment could have disastrous consequences for the labour-force and dependents, leading to social and political instability.

Related economy. The farm sector in every country supports a range of ancillary and service industries, generating economic activity in supply and distribution chains as well as processing industries. Where agriculture is the primary economic activity, the entire rural economy, including services such as health care, education and basic infrastructure, may depend on the profitability of the sector.

In remote and peripheral areas, where society has identified a legitimate priority to prevent depopulation, agriculture is likely to be one of a limited range of economic activities possible to maintain the economic viability of the region. Throughout rural areas, agriculture may contribute to rural development by providing environmental and cultural services to society.

4. Methodology

A. Research Design

The research design used for this study is both descriptive and cross-sectional design.

B. Study Area

The study area is located on latitude: 50251150.231N and longitude 70211149.331E. The general topography of the study area is fairly flat and its watershed is mostly covered by depleted rainforest vegetation. The climate of the study areas is typically humid and it lies within the rainforest/equatorial monsoon region of Nigeria, which has its peak rainfall within June, July, September and October and low rainfall in December, January and February (Peter et al; 2008). It has a mean temperature of 27°C throughout the year and total annual rainfall exceeding 2500mm ranging between April to October (Ezemonye and Emeribe, 2012). The area has its maximum temperature as 33.4°C and minimum temperature as 21.2°C, its highest and lowest rainfall was recorded as 1900 and 2000mm respectively for 2012 (Ezemonye and Emeribe, 2012).

The vegetation of the area is tropical rain forest with vegetation consisting of mostly grasses such as Wire weed (*Sida acuta*), guinea grass (*Panicum maximum*), elephant grass (*Pennisetum purpureum*), star grass (*Cynodon nlemfuensis*), Siam weed (*Cromolina odorata*), among others. Vegetation of the area consisted of secondary forest-savannah mosaic due to anthropogenic activities that have reduced the density of the forest. Some plants conspicuously grown in the wild of the study site include Iroko mahogany, obeche, bamboo, rubber and oil palm (*Elaeis guineensis*), raffia palm (*Raphia hokeri*) mango

(*Magnifera indica*), and avocado (*Persea Americana*), kola (*Kola nitida*). Cultivated crops in the area include maize (*Zea mays*), yam (*Diocorea spp*), cassava (*Manihot esculenta*), and fluted pumpkin (*Telfairia occidentalis*) amongst others.

The population is predominantly rural which consist majorly of farmers and quarry workers.

C. Study Population

A population of three hundred persons (300) was purposively selected for this study.

D. Sample Frame

Sample frame for this study comprises of 6 Site managers, 5 Project managers, 26 farmers, 50 Quarry workers and 213 Brick moulders.

E. Sample Size

Sample size is the selected number pick at random from the list unit of the sampling frame. The sampling size will not cover the entire sample frame due to the time stipulated for this study.

The sample size will be calculated by using this formula;

$$n = N / (1 + N(e^2)) \text{ (Taro Yamane, 1967).}$$

Where n = sample size

N = total population = 300

e = sampling error = 0.05

$$n = 300 / (1 + 300(0.0025)) = 300 / 1.75 = 171$$

n = 171. But it will be approximated to 180 to accommodate sampling error.

F. Sampling Techniques

Having chosen a suitable sampling frame and established the actual sample size, selecting the appropriate sampling techniques will be considered in order to obtain accurate information from the respondents, there are various types of sampling techniques and these include; random sampling, stratified sampling, systematic sampling, double sampling, purposive sampling, cluster sampling and multi-stage sampling. All these are the various techniques of sampling but for this work, random sampling will be adopted in order to avoid bias.

G. Data Collection.

For the purpose of this research work, both the primary and secondary sources were adopted. The primary data were gotten through the use of a well-structured questionnaire. The secondary data was a record of yearly productive obtained from the cooperative (agricultural cooperatives, quarry workers cooperative and brick layers' cooperatives).

H. Data Collection Instrument

There are different instruments which can be used in collection of data such as personal discussion personal observation, postal questionnaire, and administration of questionnaire, direct observation and consulting relevant publication. Therefore, for the purpose of this study, a well-

structured questionnaire and a comprehensive record of yearly activities was used for this study. The questionnaire contained information on the demographic characteristics of the respondents and information on the existence of road construction in the area. The yearly record is a comprehensive documentation of the level of productivity, rate of employment, labour etc. before and after constructing new roads.

I. Method of Data Analysis

Descriptive and inferential statistics such as frequency distribution, percentage, ordinary least square, multiple regression technique was used to analyses the objectives and test the hypotheses. Data obtained was analyzed using 5- point Likert scale which is stated as follows; Very High Impact (VH1) = 5, High Impact (H1) = 4, Moderate Impact (M1) = 3, Low Impact (LI) = 2 and No Impact (NI) = 1.

The weight of the scales will be added and divided by the number of scales to establish the acceptance level for the items; $(VHI+HI+MI+LI+NI)/N = (5+4+3+2+1)/5=3.0$ (items with mean score 3 and above is said to have a very high impact while those below is said to have no impact.

5. Results And Discussion

A. Data Presentation

Table.1. Questionnaire Distribution

| Sampled Communities | Number Of Questionnaires Shared | Number Of Questionnaires Retrieved |
|---------------------|---------------------------------|------------------------------------|
| Ezinachi Okigwe | 39 | 30 |
| Ihube Okigwe | 48 | 40 |
| Amour Okigwe | 13 | 10 |
| Total | 100 | 80 |

From Table.1. above, it was observed that out of the 100 questionnaires shared, 30 questionnaires were retrieved from Ezinachi out of the 39 shared questionnaires, 40 questionnaires were retrieved from Ihube Okigwe out of the 48 shared questionnaires while 10 questionnaires were retrieved from the 13 shared questionnaires at Amor Okigwe. The data also showed that out of the 100 shared questionnaires, 80 questionnaires were retrieved making it 80% retrieval rate.

B. Age Distribution of Respondents

From fig.1. below, it can be seen that 20 (25%) of the respondents were within the age range of 21-30 years, 27 (34%) of the respondents were within the age range of 31-40 years, 28 (35%) of the respondents are within the age range of 41-50 years while 5 (6%) of the respondents were 50 years and above.

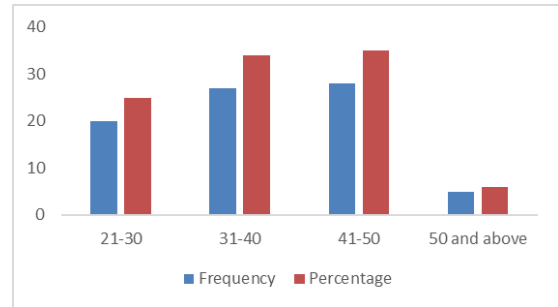


Fig.1. Age Distribution of the Respondents.

This indicates that the population of the area is mostly characterized by old people.

C. Occupational Distribution of the Respondents

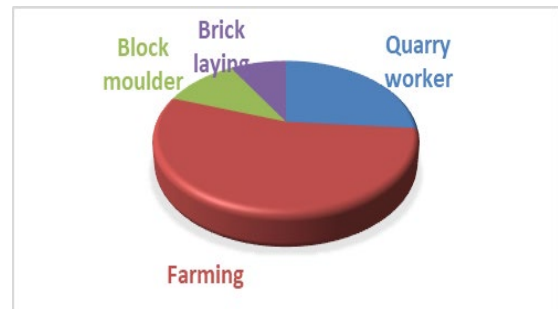


Fig.2. Occupational Distribution of Respondents

The data from fig.2. above showed that 19 (24%) of the respondents are quarry workers, 39 (49%) of them are farmers, 8 (10%) of them are block moulders, 6 (8%) of them are brick layers while 8 (10%) of them are unemployed. This indicate that majority of the population are into farming.

D. Educational Distribution of the Respondents

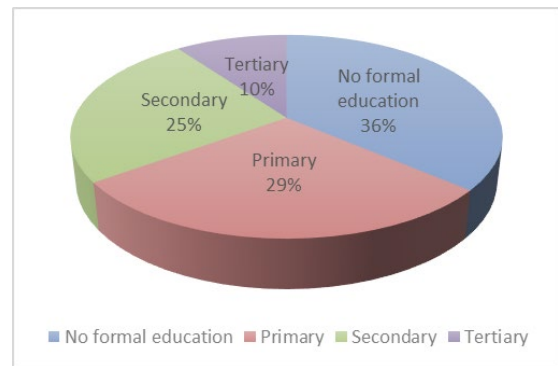


Fig.3. Educational Distribution of the Respondents

From fig.3. above, 29 (36%) of them have no formal education, 23 (29%) of them had primary education, 20 (25%) of them had secondary education while 8 (10%) of them had tertiary education. This indicates that the population is mostly characterized by people with no formal education.

E. Income Distribution of the Respondents

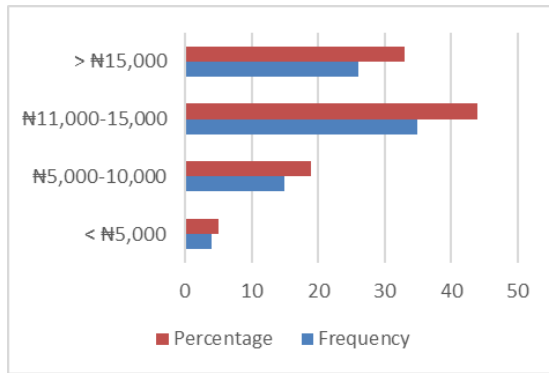


Fig.4. Income Distribution of the Respondents

From Fig.4. above, 4 (5%) of the respondents earn below $\text{N}5,000$, 15 (19%) of them earn between $\text{N}5,000-10,000$, 35 (44%) of them earn between $\text{N}11,000-15,000$ while 26 (33%) of them earn above $\text{N}15,000$.

F. Indicators of Socio-Economic Development in the Study Area

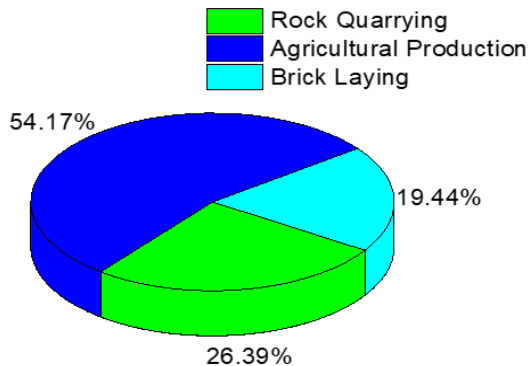


Fig.5. Indicators of Socio-Economic Development in the Study Area.

From fig.5. above, it was obvious that the indicators of socio-economic development in Okigwe L.G.A were Rock quarrying, Agricultural production and bricklaying. The figure showed that agricultural production is a steady activity engaged by a good proportion (54.17%) of respondents which help them to eke out a living. However, rock quarrying is another activity that majority (26.39%) of the respondents engage in to make ends meet. The result also showed that only few (19.44%) of the respondents engage in brick laying to meet their daily needs.

6. Conclusion And Recommendation

Investment in agriculture, rock quarrying and block molding in the study area have recorded tremendous benefits stemming from boosting agricultural production, increase in workers take home pay, increase income generation etc. The farmers should

be educated on how to maximize profit in farming operations and the respondents should be trained on how to gain access to grants from the government be it federal or state so as to boost their productivity.

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