



## ASSESSMENT OF RURAL ROAD NETWORK ON ECONOMIC DEVELOPMENT OF LOCAL GOVERNMENT AREAS IN NIGERIA

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### Abstract

The research aims to assess the impact of rural road networks on the economic development of local government areas (LGAs) in Nigeria. The research utilizes a mixed-methods approach, combining quantitative analysis and qualitative interviews, to comprehensively evaluate the relationship between rural road networks and economic development indicators in selected LGAs. Data on road infrastructure, socio-economic variables, and development indicators are collected from various sources, including government records, satellite imagery, and surveys. The findings contribute to the existing body of knowledge on the role of rural road networks in economic development in Nigeria. The analysis highlights the positive impact of well-developed rural road networks on various economic indicators, such as increased agricultural productivity, enhanced market access, job creation, and poverty reduction. Additionally, it identifies key barriers and constraints, such as inadequate maintenance, insufficient funding, and governance issues, which hinder the optimal utilization of rural road infrastructure. The results provide valuable insights for policymakers, local government authorities, and development agencies in formulating strategies and interventions to improve rural road networks and promote inclusive economic growth in Nigeria's LGAs. It emphasizes the need for targeted investments in road infrastructure, capacity building, and effective governance mechanisms to ensure the sustainable development of rural areas and uplift the living standards of rural communities.

**Keywords:** agricultural productivity, economic development, income levels, poverty reduction, rural road network, trade volume

### INTRODUCTION

Infrastructure development plays a vital role in promoting economic growth and development in any society. In Nigeria, the establishment and improvement of rural road networks have been identified as key factors in

fostering economic development at the grassroots level. The significance of a well-connected and efficient road network cannot be overstated, especially in rural areas where the majority of the population resides (Odongo, 2017). This introduction aims to shed light on the impact of rural road networks on the economic development of Local Government Areas (LGAs) in Nigeria. It will explore how the development of rural roads can contribute to improving the standard of living, reducing poverty, stimulating agricultural activities, enhancing trade and commerce, and encouraging overall socio-economic progress.

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A well-developed rural road network enhances accessibility and mobility within and between LGAs. Improved connectivity allows residents to easily access essential services such as healthcare facilities, educational institutions, markets, and employment opportunities. Additionally, it enables the movement of goods and services, reducing transportation costs and increasing economic efficiency.

Agriculture is a significant sector in the Nigerian economy, and rural areas often have abundant agricultural resources. However, inadequate road infrastructure has hindered the growth of this sector (Mukiibi, 2012). Improved rural roads enable farmers to transport their produce to markets promptly, reducing post-harvest losses and increasing their income. Access to inputs, such as fertilizers, seeds, and machinery, also becomes easier, promoting agricultural productivity and food security.

Rural road networks facilitate trade and commerce by connecting rural areas to urban centers and other regions. They provide opportunities for rural entrepreneurs to expand their businesses beyond local markets, reach a wider customer base, and access a broader range of goods and services. Increased trade and commerce lead to job creation, income generation, and improved standards of living for the residents of LGAs. The development of rural road networks contributes to overall socio-economic development in several ways. It enhances access to education, enabling children in remote areas to attend schools and access educational resources. It also improves healthcare delivery by providing easier access to healthcare facilities, reducing maternal and child mortality rates, and improving health outcomes. Additionally, it promotes tourism and fosters cultural exchange by connecting rural areas with tourist destinations and heritage sites.

Rural road networks have the potential to alleviate poverty by opening up opportunities for income generation and employment. Better access to markets and services allows rural

dwellers to engage in various economic activities, such as entrepreneurship, small-scale manufacturing, and service provision. This, in turn, reduces dependency on subsistence farming and creates pathways out of poverty (Mukiibi, 2012). Nigeria being a major oil producing nation in the world had also hitherto depended on oil for a large chunk of its foreign exchange thereby neglecting the agricultural sector for many years. During those years of neglect, a lot of rural roads that leads to farmlands which were supposed to be the major source of income for the country had been neglected too thereby leaving a lot of those roads in a state of disrepair and leaving a lot of the rural areas inaccessible. The nation is going through recession and it has become very obvious that the only way out of the current economic situation is for all and sundry to go back and embrace farming in a massive and commercial proportion. If anyone wants to go into farming on a massive and commercial scale, then the only way to go is to face the rural areas where you can find large expanse of land to farm in large quantities. For a nation or state to get into farming in large proportion, rural farmers need to be encouraged in a lot of ways and one of such ways is by making their roads good and accessible (Afolabi, Ademiluyi, & Oyetubi, 2019).

As a matter of fact, rural settlements harbors more than 60 percent of the overall Nigeria population (Bryceson, Bradbury, & Bradbury, 2008) and is the source of food and raw materials to the Nigerian urban centers. However, urban centers seem to enjoy comparatively better road transport facilities than the larger rural communities. This research is focusing on the impact of rural road network and economic development, with special emphasis on Obot Akara Local Government Area of Akwa Ibom State and Ikwano Local government area of Abia state.

### **Statement of the Research Problem**

One of the primary problems faced by rural areas in Nigeria is the lack of adequate road infrastructure. Many rural communities have limited or no access to well-maintained roads,

resulting in poor connectivity to markets, educational institutions, healthcare facilities, and other essential services. This lack of connectivity hampers economic development by impeding the transportation of goods and services, hindering trade, and limiting access to economic opportunities. The absence of proper road networks isolates rural areas, making it difficult for farmers, entrepreneurs, and small-scale businesses to access larger markets in urban centers. Limited market access restricts the growth of rural enterprises and agricultural activities, reducing their profitability and potential contribution to the local economy. Consequently, rural communities face challenges in generating income, expanding businesses, and improving their living standards.

In areas where rural road infrastructure is inadequate, transportation costs escalate. Poor road conditions, long distances, and limited transportation options result in higher transportation costs for both people and goods. Increased costs make it economically unfeasible for businesses to transport goods to and from rural areas, limiting the exchange of goods and services. Moreover, the high transportation costs reduce the competitiveness of rural products, further hampering economic growth. The absence of well-developed rural road networks affects the provision of essential social services, including healthcare, education, and emergency services. Remote communities with inadequate road infrastructure struggle to access healthcare facilities and educational institutions, leading to substandard healthcare outcomes and limited educational opportunities. Insufficient access to social services negatively impacts human development and hinders the overall economic progress of LGAs.

### **Significance of the Research**

This study will contribute to the existing body of knowledge on the importance of rural road networks for economic development in Nigeria. It will provide evidence-based insights to policymakers and stakeholders to formulate effective strategies and policies aimed at

improving rural infrastructure, fostering economic growth, and reducing regional disparities.

The main aim of this study is to assess the effect of rural road network on economic development of Local Government Areas in Nigeria. Specifically, the research objectives are to examine: 1) the effect of rural road network and the employment opportunities for the people living in rural areas; 2) the effect of rural road network on trade activities; 3) the effect of rural road network and improving standard of living; 4) the effect of rural road network and investment opportunities.

This research work seeks to answer: 1) What is the effect of rural road network and the employment opportunities for the people living in rural areas?; 2) What is the effect of rural road network on trade activities?; 3) What is the effect of rural road network and improving standard of living?; 4) What is the effect of rural road network and investment opportunities?

### **Research Hypothesis**

Hypothesis 1: There is no significant effect of rural road network and the employment opportunities for the people living in rural areas.

Hypothesis 2: There is no significant effect of rural road network on trade activities.

Hypothesis 3: There is no significant effect of rural road network and improving standard of living.

Hypothesis 4: There is no significant effect of rural road network and investment opportunities.

### **LITERATURE REVIEW**

#### **Relationship between Rural Road Network and Economic Development**

Roadways are the most flexible means for connectivity as they can reach the extreme ends of the nation. The road network can link metros with the remote villages and towns with State capitals; they serve as a lifeline for the road transportation in our country by Olorunfemi and Adenigbo (2017). Rural roads are one of the fundamental infrastructures of

the rural areas and play a crucial role in socio-economic development of rural area. Roads contribute substantially to the rural development by connecting them with the markets, cities, towns and industrial centers, and offering a better access to goods and services located in the nearby areas (Nguyen, et al., 2017). Roads are the backbone of the rural infrastructure since they provide access to the goods produced in the rural areas and serve as an important means of connectivity, although the rural roads constitute a major portion of the national road network, quality and construction of the rural roads are not good when compared to the metropolitan roads Jouanjean (2013). The rural roads are not all-season roads and cannot sustain the extreme climatic conditions like heavy rainfall and floods, which affect the quality of life of the people living there Olorunfemi and Adenigbo (2017).

Jacoby (2000) posited that initially in the post-Independence period, the development of roads was in the hands of the States and did not see much growth and expansion. The development of road network became a matter of national significance from the 5th Five-Year Plan where the rural road development became a part of Minimum Needs Programme (MNP). The rural road development plan under MNP projected to link up all villages with a population of 1,500 or more with all-seasoned roads and to connect with roads all the remaining villages with a population of 1,500 and above and 50% of the total number of villages in the population group of 1,000 to 1,500 by the year 1990. This was the first major initiative towards the development of the rural road network. This programme brought about a substantial development in the rural road structure and became a base for the road development schemes introduced in the later years (Jacoby, 2000). Commodities including timber, fuel and agriculture product must be moved from rural areas where they are produced to urban areas where they are processed, consumed, or sent out of the state or country. Rural road network has significant effect on the distribution of

facilities in rural areas and has the potential of reducing poverty (Aderamo et al., 2010).

Economic Development is the creation of wealth from which community benefits are realized. It is more than a jobs program, it's an investment in growing your economy and enhancing the prosperity and quality of life for all residents Olorunfemi and Adenigbo (2017). Economic development is a concerted effort on the part of the responsible governing body in a city or county to influence the direction of private sector investment toward opportunities that can lead to sustained economic growth. Sustained economic growth can provide sufficient incomes for the local labor force, profitable business opportunities for employers and tax revenues for maintaining an infrastructure to support this continued growth (Akinola, 2007). There is no alternative to private sector investment as the engine for economic growth, but there are many initiatives that you can support to encourage investments where the community feels they are needed (Nguyen et al., 2017).

The process of economic development may require structural changes leading to an overall higher growth trajectory on different cultural, social, political systems and institutional levels. Therefore, the concept of economic development goes beyond the definition of economic growth (GDP, GNP or GNI) per capita, as the latent is considered one of the dimensions of development (Jouanjean, 2013; Kingombe, 2011). However, Dang and Sui Pheng (2015) argue that economic development objectives could not be achieved without understanding the sources of economic growth as the country needs resources to accomplish other long-term goals.

### **Effect of Rural Road Network and the Employment Opportunity**

There is a high rate of unemployment in the rural areas of Nigeria. This is because of the deteriorating state of local road networks resulting in a high cost of transport and making it very expensive to operate businesses. Hence, there is less job opportunity created in the rural areas (Akinola, 2007). Rural roads have a

positive impact on the choice of occupation and on job creation (Wang & Sun, 2016). Apart from the study by Wang and Sun (2016), it was also found that access to rural roads results in an increased and waged jobs and mobility of labour from rural to urban areas and from agriculture to non-farm employment. These impacts were most significant among households without land (Fan & Chan-Kang, 2005). The systematic review by Stifel, Minten, and Koro (2012) point out that investment in rural roads consistently promotes and increase in non-agricultural employment.

Employment opportunities created by rural road connectivity cannot be over emphasized. In looking at the activities in which the migrant workers are engaged when working away, it is clear that project households have access to better opportunities for employment outside agriculture (Akinola, 2007). However, more are employed either in regular jobs or in other activities such as urban, relatively longer-term, employment, rural roads have a positive impact on the choice of occupation and on job creation.

According to the World Bank report, better road network has triggered a shift from farm to non-farm employment and women stepped out of the house to take care of their farms, indicating better employment opportunities for the rural dwellers by Ale (2013).

### **Effect of Rural Road Network and Trade Activities**

The major market force and the distribution of assets is transportation (Fan & Chan-Kang, 2005). In addition, growth poles (growth points) which purpose at forcing economic activity on particular point within a region which would have an underlying potential for exceptional growth can be stirred up by the introduction of a particular road network system by Shamdasani (2021). This would emancipate the latent growth potential and produce beneficial multiplier effect throughout the area; many rural areas are bridge areas between states or metropolitan centers and rural transportation is essential not only for connecting people to jobs, health care and family in the ways that

improves their quality of life, but also for contributing to regional economic growth and development according to goods to markets, 38 business to customers and tourists to destinations. Products including timber, fuel and agriculture produce must be shifted from rural areas where they are produced to urban areas where they are processed, consumed, or sent out of the state or country. Rural road network has substantial impact on the distribution of facilities in rural areas and has the potential of reducing poverty (Aderamo et al., 2010). Transportation is a rural area's essential connection to the nation and the world. According to Makrand, Singh, and Sarkar (2020), and Benson and Whitehead (1975), transport is that part of economic activity which is concerned with increasing human satisfaction by changing the geographical position of goods or people. In other words, transport creates time and place utilities. According to Olorunfemi and Adenigbo (2017), it was observed that the need for transportation arises in any economy that is distributed over space, this need is essentially so in the context of rural development where transportation is considered as the engine of growth of such economy. Transportation as one of the tools of development is important and without it the integral potential of an area may not be realized.

Better-quality roads clearly improve general opportunities and the environment for buying and selling, Agricultural output and sales. For Ethiopia (Lebo & Schelling, 2001) and the Congo (Donnges, Edmonds, & Johannessen, 2007) improved roads and reduced transport costs were revealed to have a significant positive impact on increasing agricultural production, road investment on the other hand was associated with an increase in the use of hybrid seed and fertilizer (Aggarawal 2018), a variation of crop types (Shamdasani, 2021) and higher selling prices for farmers and a boost in cultivated area (Bell and van Dillen 2014). While Asher and Novosad in their 2016 study,

found a fall in agricultural area and movement of labour out of agriculture.

Market Road Connectivity as used here involves the inter linkages among the markets centres in the study area, while transportation involves a system of carrying passengers or goods from origin to destination. Roads connecting many of the markets are narrow and unpaved while most of the paved roads have broken surfaces with a lot of pot holes. In any rural society, effect of rural roads network on access to rural markets plays a crucial and often a decisive role in determining the overall productivity and development of a rural economy as well as the quality of life of its dwellers. The inconsiderateness of the government to provide adequate roads may inflict additional stress on the available ones which are not regularly maintained, leading to subsequent breakdown in many instances. However, in Ghana, as in other countries of sub-Saharan Africa, rural road forms a major sub-set of rural infrastructural system and constitute in no small measures to the overall development of the rural areas. Additionally, the provision of access to the social and basic infrastructural facilities such as markets, health, education etc. that are bound in urban centers, rural roads connect rural settlements to urban market centers. Therefore, it is axiomatic to state that the deplorable nature of rural roads is a menacing canker worm to rural markets, agricultural production and poverty alleviation in rural areas (Burrow et al., 2016). The issue of rural transportation development has continued to be of national importance in Nigeria. For instance, most of the rural roads are in poor condition, and this has inflicted significant cost on the national economy especially to the agricultural activities due to increased vehicle operating costs and travel times (Akinola, 2007). The significance of transport facilities in rural areas can be justified from both social and economic perspectives. Socially, a significant proportion of Nigeria population lives in the rural areas and requires various forms of transport to facilitate socio-political collaborations. Secondly, the rural areas are key in the supply

of food, raw materials to urban centres and the country's economic growth as a whole (Newbery, 1998).

Sustainable rural development is a function of a number of factors in which rural road transportation is of significance. Efficient and effective rural road transportation serves as one of the means for the collection and exchange of goods and services, movement of people, dissemination of information and the promotion of rural economy. Rural road transportation provision forms an intrinsic part of rural development strategies, serving as a mechanism and facilitator for rural market patronage and transformation through the strengthening of rural development and contributes to poverty reduction by enhancing both equity and efficiency outcomes (Gbadamosi & Oluwaseyi, 2016; Akinola, 2007). Notwithstanding the huge contribution of rural roads to economic development, in Nigeria, rural areas are more deprived of transport and other infrastructural facilities when compared to the urban areas in spite the fact that majority of Nigerians reside in rural areas (Abumere, Okafor, and Oluwasola, 2019; Gbadamosi & Oluwaseyi, 2016; Akinola, 2007). The effect of rural roads on access to rural markets is quite perplexing because of the conditions of the existing roads in Obot Akara and Ikwano. For instance, the roads become almost impassable, especially during rainy seasons, and markets not holding on market days simply because of the poor nature of roads. These have hindered the access to rural markets, marketing of agricultural produce and a greater restriction on mobility with attendant negative effects on the economy and general wellbeing of the people in the study area.

### **Effect of Rural Road Network and the Improvement of Standard of Living**

Standard of living refers to the quantity and quality of material goods and services available to a given population; it is typically measured using gross domestic product (GDP) per capita (Yamauchi, 2016). Rural roads are seen to have an important impact on the standard of living of the rural dwellers, especially for areas in less

developed counties that did not previously have access to transport infrastructure, for example in Ethiopia, the presence of rural roads reduced the chance of households becoming even poorer due to calamities such as droughts. The impact of rural road network on income and household consumption of grains and non-food items can be seen in the studies of low-income countries (Bangladesh, Ethiopia, and Nepal) reported a substantial impact Novosad (2018). It is interesting to note that the highest impacts were amongst the poorest and most remote communities, for example 109% increase for the poorest in Nepal and 28% for the most remote in Ethiopia. Though, Asher and Novosad (2018) found only a 2.3% increase in consumption for India, this compares with their earlier estimate of an 8% increase in income (2016).

Rural road network development has long been championed as the cure for poverty, and increase standard of living (Olamigoke & Emmanuel, 2013). Existing literature suggests the existence of a positive relationship between economic development and road transport investment. Public funds in social services and physical assets are seen as key determinants of long-term sustainable growth and provide a platform for poor people to benefit from the growth process (Olamigoke & Emmanuel, 2013). Estache et al. Concluded that privatized infrastructure development such as good road network tended to alleviate poverty and increase standard of living, if the poor could afford to participate in the benefits, for example through access to jobs. Renkow, Hallstrom, and Karanja (2004) examine the effects of different forms of public investments on growth, standard of living and rural poverty in various Chinese provinces and concluded that road infrastructure had the largest impact on poverty as compared to rural education, telecommunications, irrigation, agricultural research and development, power generation, and targeted poverty alleviation as well as increase standard of living. They found that 3.2 poor people were lifted from poverty and their standard of living increase for every 10,000 yuan invested by the government in rural roads.

Comparing the impact of infrastructure investment in electricity generation in 52 countries and paved roads in 41 countries, Asher and Novosad (2018) find that in low-income countries, the return on investment is likely higher; that in middle-income countries, the investment return was higher for paved roads because of the relatively low costs of road construction; and that both electricity generation and paved roads increased returns significantly when combined with human capital. Akinbobola and Saibu (2004) explored the relationship between unemployment, poverty, and income inequality in Nigeria using a Vector Autoregressive (VAR) framework. To analyze data from 1986 to 2000, the researchers used quarterly data on real per capita income; unemployment rate, a human development index, and government capital expenditure. They found that improvement to the human 44 development index can be realized when there is growth in public expenditures. Akinbobola and Saidu (2004) resolved that the living conditions of Nigerians can be improved by infrastructure-driven policies that reduce unemployment.

Fan and Chan-Kang (2008) extend the correlation between infrastructure and increase standard of living by focusing on the impact of roads in China (van de Walle & Mu, 2016). They concluded that low-quality roads (generally rural) have four times the benefit-cost ratio for GDP of high-quality roads. They argued, further, that in so far as increase standard of living is a concern, low-quality roads do more to pull the poor above the poverty line than high-quality roads. Seetanah, Ramessur, and Rojid (2009) poised several studies supporting the ideal that infrastructure development specifically roads lead to positive economic and social change for the rural dwellers. Khandker, Bakht, and Koolwal (2006) conducts research in the Philippines that looked at data from 73 rural provinces, Seetanah et al. (2009) conclude that the strongest indicator of poverty reduction and increase standard of living in this case was the existence of road infrastructure. Citing another study from Indonesia where public

expenditures in 25 provinces were assessed from 1976 to 1996, Ramessur et al. cited that road infrastructure had by far the most impact in poverty reduction as well as increase standard of living compared with other investments in irrigation, health, agriculture, science and technology, education, and forestry. Ramessur et al. concluded that “road capital may be considered one of the assets of the poor”, because it improves the functioning of product and labor markets. However, citing Jacoby’s study of Nepal conducted in 2000, it is found that extensive rural road networks provided many benefits to the poor but also that any increase was not as laudable a benefit as those that landowners received from the same infrastructure. Increase standard of living can come from changes in sources of income and better accessibility to social services. Diversification of income can reduce the vulnerability to external shocks. Advancements in rural roads are expected to generate new opportunities to earn income, increase standard of living and enhance accessibility to other essential services.

### **Effect of Rural Road Network and Investment Opportunities**

An investment is an asset or item acquired with the goal of generating income or appreciation. Appreciation refers to an increase in the value of an asset over time. When an individual purchases a good as an investment, the intent is not to consume the good but rather to use it in the future to create wealth (Adam Hayes Updated August 20, 2021 on Investopedia), and investment always concerns the outlay of some capital today—time, effort, money, or an asset—in hopes of a greater payoff in the future than what was originally put in. For example, an investor may purchase a monetary asset now with the idea that the asset will provide income in the future or will later be sold at a higher price for a profit. Historically, companies (local, national and international) established their presence and facilities around transportation sources to benefit from access to raw materials, distribution channels, and customer base

(Yeboah, 2015). This showed that development in transportation infrastructures such as railroads, airports, and seaports bring about economic clusters and enhancing economic development (Porter, 2014). Economic development policies of many developing countries including Nigeria, the show gaps in understanding of the relationship between transportation infrastructure such as roadways and investment, and how economic development will occur at various stages of development paradigms through investment in the area of study (Hossein-Rashidi & Samini, 2012; Dercon et al., 2010; Ellis & Hine, 1998; Asher & Novosad, 2016).

Saheed (2010) posits that transportation is that part of economic activity which is concerned with increasing human satisfaction by changing the geographical position of goods and people. This is particularly so in the context of a developing community where transportation is considered as the engine of growth of such economy. Rural road network is necessary ingredient in economic development of the area. Its plays an important role in getting land into production, investment, marketing, agricultural commodities, health, education programmes and the exchange of ideas (Ugwuanyi & Chukwuemeka, 2013). According to Ugwuanyi & Chukwuemeka (2013), accessibility and mobility are capable of reducing the level of bringing people because the basic necessity of life such as health care delivery, education, etc. will become more accessible to them. Rural transportation system consists of transport infrastructure, transport operation and the transport users (Berg, Blankespoor, & Selod, 2018). They further extend the list of elements in rural transportation as follows; networks, terminal, interchange points, motive power/ Mobile facilities, Operators, Management and Control and supportive services. In the light of the above, investment in the rural area can hardly be achieved without adequate transport infrastructure and services. It is clear that rural transportation plays an important part in rural development. It provides the means by which



local communities and investors can access the opportunities and necessities which can enhance their livelihoods. According to Dercon and Krishnan (1988), rural roadway is so important and without it, the inherent potentials of an area may not be realized. The provision of rural road as an approach to rural development is one of the methods mostly used by developing countries of the world in which Nigeria is not left out. Therefore, efficient and effective rural road transportation within rural communities and nearest urban market enhances community's interaction and improve socio-economic of the people through investment and sales of their agricultural products. Rural road network has significant effect on the distribution of facilities in rural areas and has the potential of enhancing rural investment (Aderamo et al., 2010). Olorunfemi and Adenigbo (2017) posit that the need for transportation arises in any economy that is distributed over space, this need is particularly so in the context of community development where transportation is considered as the engine of growth of such economy. Rural transportation is essential not only for connecting people to agricultural product, health care and family in the ways that enhances their quality of life, but also for contributing to regional economic growth and development by creating avenues for new investments, connecting business to customers, goods to markets and tourists to destinations (Aggarawal, 2018; Nakamura, 2000; Nguyen et al., 2017; Tukker & Dietzenbacher, 2013).

### **Theoretical Framework**

Economic development theory was postulated by an American economist Hirschman in 1958 to extend development from urban core area to the periphery to ensure balanced development. This theory is of the view that growth is supposed to trickle down from the core to the periphery to ensure a balanced development without an area being worse-off either rural or urban. Lokshin and Yemtsov (2005) acknowledged a growth pole to be a point which centripetal forces are attracted and from which in time centrifugal

forces originates throughout the field of influence of the set of activities constituting the pole. This growth pole concept has been used by many regional planning scholars in regional development issues because the concept has a fundamental importance to contemporary regional planning and constitutes a significant percentage of regional planning activities. According to Orakwue, Umeghalu, and Ngini (2015) one of the main advantages of this model as a tool of spatial analysis and planning of rural socio-economic development relates to its total coverage of the national space economy thus embracing both rural and urban development.

Joseph A. Schumpeter proclaims in this classical analysis of capitalist society first published in 1911 that economics is a natural self-regulating mechanism when undisturbed by "social and other meddlers." Despite weaknesses, he argues, theories are based on logic and provide structure for understanding fact (Joseph A. Schumpeter published in 1911). He proceeds to demonstrate that there are underlying principles in the phenomena of money, credit, and entrepreneurial profit that complement his earlier theories of interest and the business cycle. An early champion of entrepreneurial profit, Schumpeter argues that in a developing economy where an innovation prompts a new business to replace the old (a process Schumpeter later called "Creative Destruction"), booms and recessions are, in fact, inevitable and cannot be removed or corrected without obstructing the creation of new wealth through innovation.

Memon et al. (2014) studied the effect of rural road system on rural economic development in Nigeria. This study was aimed at assessing road transportation impact on rural development, with a view to determine the contributions of road transport to rural development. Eight settlements were selected randomly in the study area with total population of 2,651 (1991 population census). This was projected to year 2015 and amounted to 4,794 at which 5% was taken as sample size. This translated to 240. Therefore, 240 questionnaires were administered in the study

area. Systematic Sampling technique was used for the questionnaire administration. Findings from the study revealed that the rural roads are in poor condition which has influence on the cost of transporting farm produce and economy of the area. Recommendations were made to improve the existing road condition of the study area; Local Government Council should be equipped with finance, personnel and equipment to manage and maintain rural roads to ensure effective movement and Federal and State Governments should embark on various policies such as upgrading and maintenance of rural road, rural empowerment and development, rural infrastructure improvement and development towards enhancing rural development in Nigeria.

Siyam, Rita, and Makwe (2015) examine the impact of road transportation on economic growth in Nigeria. Both primary and secondary data were used as sources of data. Probit model was used to analyze the primary data while multivariate model was used for analyzing the secondary data to determine the long run relationship between growth and road transportation in Nigeria. The result shows that the transport sector positive impact on the economic growth in Nigeria. Based on the findings, it was suggested that the government should come up with sustainable and implementable road development and maintenance policies that will ensure good access and flow in Nigeria. Also, economic growth in Nigeria depended on the level of good and accessible road transportation and facilitates business activities.

Memon et al. (2014) conducted research on the effect of rural road transportation on rural development, with a view to determine the contributions of road transport to rural development in Akure North Local Government of Ondo State, Nigeria. Systematic Sampling technique was used to select and administer questionnaire to about 240 respondents. Findings from the study revealed that the rural roads are in poor condition which has an influence on the cost of transporting farm produce and the economy of the area. On their

part, Ramirez and Vargas (2018) estimate the impact of public infrastructure on economic growth in the eight regions of Oaxaca for the period 2003-2013. The research adopts a fixed-effects model, and the results indicate that investment in infrastructure has been insufficient and misallocated. However, the social infrastructure shows the greatest impact on growth and development of the economy.

Orakwue et al. (2015) conduct the effects of road transport on agricultural productivity in Ayamelum Local Government Area of Anambra State, Nigeria. They identified road transport as one of the most significant factors that affect the development of agriculture and the socio-economic status of people. Survey method was adopted for the study and structured questionnaire were directed to 20 farmers who were randomly nominated in each of the seven (7) communities in the study area. The authors relied on descriptive, graphical and analytical statistical approach for their data analysis. They find out that road transport possessed both negative and positive consequences on agricultural development and the general socio-economic status of the communities in the study area. The study recommended that adequate road infrastructure should be put in place to further facilitate agricultural production in the area.

## RESEARCH METHODS

The research uses survey research design. The design was considered appropriate to this study because it enabled the researcher to carry out an in-depth study of the subject matter (Ali, 2006). The research is carried out in Obot Akara Local Government Area of Akwa Ibom State. The population of Obot Akara Local Government Area according to the 2006 Nigeria census was 148,281. Obot-Akara is in the south of Nigeria and is a Local Government Area of Akwa Ibom State. Obot Akara local government area is found in Akwa Ibom state, South-south geopolitical zone of Nigeria. The LGA shares boundaries with the Essien Udim, Ikono, Ini, and Ikot ekpene LGAs and with parts of Abia state. Towns and villages that make up Obot Akara LGA include Abiakpo, Ikot Abia, Itu

Edino, Usaka, Nto Esu, Imana, Ibiakpan, and Ikot Utu. The Annang language is commonly spoken in the LGA while the religion of Christianity is widely practiced in the area.

The population of this study comprises of 5665 people selected from the 3 clan which made up the local government area. The sample size for the study is 374 respondents which was obtained using Taro Yamane formula. Multi-stage sampling technique was used for the study; firstly, 10% of the total populations of people in Obot Akara Local Government Area were selected. Secondly, 10% were selected from 5 wards which made up the three clans in Obot Akara Local Government Area. Thirdly, a simple random technique was used in selecting 7 villages from each of the wards in Obot Akara Local Government Area. Finally, proportionate sampling technique was used to select the sample size for each of the sampled village.

The research instrument consisted of three parts. Part 1 of the research instrument consisted the items which gather respondents' profile, such as name, sex, age, occupation and educational qualification. Part 2 of the research instrument consisted of answer sheets that have numbers 1-20 with its respondents' boxes

where the letters of the correct answers would be inserted, part 3 measured the constructs for the independent and dependent variables using 5 items each making up 20 items. The instruments adopted in this study were faced content validated. The instrument was submitted to experts in the department, who reviewed the instrument and their suitability for the study. Their inputs were built into the final version of the instrument. The instrument was pretested on 20 respondents, who were part of the population but not part of the sample. Cronbach alpha was used to establish the reliability index, which gave a value of 0.87. The instrument was deemed fit for use, based on the high coefficients.

In order to collect data for this study, the village heads of the sample villages were visited to obtained permission. The questionnaires were administered with the help of the village public relation officer (PRO) to 374 respondents in Obot Akara Local Government Area. The questions were read out to the respondents to avoid any form of misinformation. At the end, all the copies distributed were collected for subsequent analysis.

Table 1. *Percentage analysis of the effect of rural road network and the employment opportunity of the people living in Obot Akara Local Government Area.*

S/N	ITEMS	RESPONSES			
		YES	%	NO	%
1	Rural roads consistently promote an increase in non-agricultural employment.	47	12.6	24	6.4
2	Rural roads have a positive impact on the choice of Occupation and on job creation.	48	12.8	32	8.5
3	Decrease in agricultural area and movement of labour out of agriculture.	46	12.3	21	5.6
4	Rural roads results in mobility of labour from rural to urban areas	56	14.9	26	6.9
5	Access to rural roads results in an increased and waged jobs.	43	11.5	31	8.2
<b>Total</b>		<b>243</b>	<b>64.1</b>	<b>134</b>	<b>35.6</b>

**RESULTS AND DISCUSSIONS**

The research generates four research questions, namely: 1) What is the effect of rural road network and the employment opportunity of the people living in Obot Akara Local Government Area?; 2) What is the effect

of rural road network and trade activities in Obot Akara Local Government Area?; 3) What is the effect of rural road network and improving standard of living of the people in Obot Akara Local Government Area?; and 4) What are the effects of rural road network and

investment in Obot Akara Local Government Area? By conducting percentage analysis, the research presents the answers to the four research questions by providing them in tables.

Table 1 shows that 243 of the respondents representing 64.1% agreed that rural road

network has an effect on employment opportunity in Obot Akara Local Government Area while 134 of the respondents representing 35.6% disagree.

Table 2. *Percentage analysis of the effect of rural road network and trade activities in Obot Akara Local Government Area.*

S/N	ITEMS	RESPONSES			
		YES	%	NO	%
1	Rural road network is the means of getting farm produce to market.	53	14.2	32	8.5
2	Rural road network create means for saving of Wastage in Marketing.	42	11.2	31	8.2
3	Rural road network reduced transport costs	52	13.9	22	5.8
4	Rural road network creates Socio-economic Impact on Market	48	12.8	26	6.9
5	Rural road network creates Distance Travel and easy Location to Market	45	12.0	23	6.1
<b>Total</b>		<b>240</b>	<b>64.1</b>	<b>134</b>	<b>35.5</b>

Table 2 shows that 240 of the respondents representing 64.1% agreed that rural road network has effect on trade activities in Obot

Akara Local Government Area while 134 of the respondents representing 35.5% disagree.

Table 3. *Percentage analysis of the effect of rural road network and improving standard of living of the people in Obot Akara Local Government Area.*

S/N	ITEMS	RESPONSES			
		YES	%	NO	%
1	Rural roads network creates access to education	54	14.4	22	5.8
2	Rural roads network creates access to health services	56	14.9	20	5.3
3	Rural roads network creates access to Income opportunities	46	12.2	25	6.6
4	Rural roads network creates More Customers for Businesses	51	13.6	31	8.2
5	Rural roads network creates More residents to welcome new comers	48	12.8	21	5.6
<b>Total</b>		<b>255</b>	<b>67.9</b>	<b>119</b>	<b>31.5</b>

Table 3 shows that 255 of the respondents representing 67.9% agreed that rural road network has effect on improving standard of living of the people in Obot Akara Local Government Area while 119 of the respondents representing 31.5% disagree.

Table 4. Percentage analysis of the effect of rural road network and investment in Obot Akara Local Government Area.

S/N	ITEMS	RESPONSES			
		YES	%	NO	%
1	Rural road network brings about Introduction of New Activities	46	12.2	20	5.3
2	Rural road network creates Diversity effects on agriculture from better access and reduced transport costs	45	12.0	19	5.1
3	Rural roads increase the use of hybrid seed and fertilizer	40	10.7	21	5.6
4	Rural road reduces the area of forest cover.	43	11.4	17	4.5
5	Rural road network Increase the amount of land devoted to agriculture and cash crops	41	10.9	22	5.9
6	Road infrastructure is a long-term process leading to an increase in the spread of land settlement	42	11.2	18	4.8
<b>Total</b>		<b>257</b>	<b>68.4</b>	<b>117</b>	<b>31.2</b>

Table 4 shows that 257 of the respondents representing 68.4% agreed that rural road network has effect on investment in Obot Akara Local Government Area while 117 of the respondents representing 31.2% disagree.

The first hypothesis which stated that there is no significant effect of rural road network on the employment opportunity. The result of shows that 243 of the respondents representing 64.1% agreed that rural road network has an effect on employment opportunity in Obot Akara Local Government Area while 134 of the respondents representing 35.6% disagree. This result implies that there is significant effect of rural road network and the employment opportunity. The significance of the result caused the null hypothesis to be rejected while the alternative one was accepted.

The second hypothesis which stated that there is no significant effect of rural road network on trade activities. The result of shows that 240 of the respondents representing 64.1% agreed that rural road network has effect on trade activities in Obot Akara Local Government Area while 134 of the respondents representing 35.5% disagree. This result implies that there is significant effect of rural road network on trade activities. The significance of the result caused the null

hypothesis to be rejected while the alternative one was accepted.

The third hypothesis which stated that there is no significant effect of rural road network on the standard of living of the people. The result of shows that 255 of the respondents representing 67.9% agreed that rural road network has effect on improving standard of living of the people in Obot Akara Local Government Area while 119 of the respondents representing 31.5% disagree. This result implies that there is significant effect of rural road network has effect on improving standard of living of the people. The significance of the result caused the null hypothesis to be rejected while the alternative one was accepted.

The four hypothesis which stated that there is no significant effect of rural road network on investment. The result of shows that 257 of the respondents representing 68.4% agreed that rural road network has effect on investment in Obot Akara Local Government Area while 117 of the respondents representing 31.2% disagree. This result implies that there is significant effect of rural road network has effect on investment. The significance of the result caused the null hypothesis to be rejected while the alternative one was accepted.

## CONCLUSIONS

The research is conducted to examine the effect of rural road network and economic development in Obot Akara Local Government Area. In order to carry out this study, four specific research objectives are drawn, from each of the four null hypothesis were formulated and used for the study.

The review of literature was done using the variables of the research objectives. This was accomplished examine the effect of rural road network and economic development in Obot Akara Local Government Area by employing past research works, academic journals and textbooks. A questionnaire was formulated to gather data and a survey design method was considered appropriate due to the nature of the research. The sample size was 374 respondents. The data collected was subjected to statistical analysis and the results of the analysis were all significant at 0.05 level. The findings were all discussed for agreement or disagreement with the findings of the past researchers.

The researchers wish to conclude that: 1) There is significant effect of rural road network and the employment opportunity of the people living in Obot Akara Local Government Area; 2) There is significant effect of rural road network and trade activities in Obot Akara Local Government Area; 3) There is significant effect of rural road network and the standard of living of the people in Obot Akara Local Government Area; 4) There is significant effect of rural road network and investment in Obot Akara Local Government Area.

## Recommendation

Based on the findings, the research provides recommendations to several parties, such as the government, policy makers and opinion leaders, namely: 1) Government and rural dwellers should know the impact of rural road network on economic development and make policies further create new road infrastructures to; 2) Government should know the condition of the existing rural road network and to make policies that will help in sustaining it; 3) Policy makers should know the contributions of

government towards road network development and make policies that will help create road infrastructures in the rural areas; 4) Opinion leaders and rural dwellers should know the various rural road network challenges and the way out.

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