

## An Assessment of Socio-Economic Benefits of Improved Rural Road in A Nigeria L.G.A.

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**Abstract:** This research assessed and x-rays the relationship between resident's socio-economic benefit and the improved rural road project in omuma local government area of Rivers state Nigeria. Two specific objectives measured were; to identify socioeconomic benefits of improved rural community road from the study area, and examine the relationship between improved rural community road and socio-economic benefits of residents in the study area (improved income, quantity of high institutions, human population increase and quantity of churches). The questionnaire structured on 5 likert scale was used to draw information from residents while other information was obtained through field observation and environmental contact. The study identifies the socio-economic benefits and found out that accessibility to market/connectivity, foreign investors association, importation and exportation of agrarian product, employment increase, reduction of transportation cost, eradication of poverty rate, improved income, human population increase, reduction in cost of food, increase of social relation, land value appreciation, quantity of educational institution and increase in number of churches are the 13 identified socioeconomic benefits of improved rural road in omuma. The research further discloses that there was a strong positive relationship between improved income of ( $r = .254, p < 0.5$ ), quantity of high institution ( $r = .182, p < 0.5$ ), human population increase of ( $r = .268, p > .05$ ), quantity of churches, of ( $r = .169, p < 0.5$ ) and the rural improved road.

**Keywords:** socioeconomic, rural, benefits, road and omuma

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Date of Submission: 05-06-2019

Date of acceptance: 20-06-2019

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### I. Introduction

The improvement of a community route involves huge financial commitment and political will. Furthermore, the socio-economic benefit bridges the prevalent dichotomy between rural hinterlands and urban areas across the world. As the improved road attracts other necessary infrastructural facilities, residents of rural settlements characterized by paved road reap the dividends of transportation cost reduction, land value appreciation, increase of educational institutions, link with other communities and smooth movement of goods and service from rural communities to urban environment including foreign investors association. Additionally, socio-economic benefit of rural road construction debunks rural population from agrarian means of livelihoods but engage them on secondary and tertiary economic activities for the reduction and dislodgement of household's abject poverty within the rural hemisphere (Researchers survey 2019).

Rural area denotes a low populated area that practices agrarian without seasoned roads and other necessary infrastructural facilities. These lacking facilities in rural localities attract investors and the movement of goods and services from one geographical location to another. Accordingly, the more unpaved rural area has, the more abject poverty increases and persisted the dichotomy between urban and rural settlement. The rural-urban disparities will be constrained if the roads in rural localities are improved for the speed transportation of agricultural products, attraction of industries and other vital infrastructures considered for the planned and transformation of remote zones. The condition that remote regions do not have social amenities and infrastructural facilities unlike the urban centers characterized by increase and scattered facilities further complexes the condition of rural communities. This has continued to be the condition of rural communities in Nigeria before and after the civil war and has sustained to raise catastrophe proportions because of white collar job and decrease in rural population.

Ecumenically, the poor nature and non-improvement of rural feeder roads in the remote area have lingered for more than a century. The deficiency which prevented the rural communities from connecting and competing with urban areas stagnated the wide dichotomy between the rural area and urban settlement. This area has demonstrated pure rural and characterized by abject poverty, rural-urban migration of high skilled workers, lack of industrial job and limited chances for high income jobs of the information age, lack of

humanitarian programs, increase in transportation cost, non-connectivity with urban routes, low population and unappreciable land, small village communities, low population etc. The primary economic practice such as farming, fishing, hunting, active sand mining and lumbering forms the central occupation and economy of the populace. Presently, the socio economic benefit of improved rural feeder roads have been studied and used for policy decisions in developed countries. But in the entire rural communities of Omuama, these socio economic benefits of improved road have not been studied. The gap necessitated the study which aimed at sharing information on socio economic benefits of improved rural road in Omuama district of Nigeria with a means to initiate effective planning alternatives for bridging the rural- urban disparities. Directly this investigation will;

1. Identify socioeconomic benefits of improved rural community road from the study area;
2. Examine the relationship between improved rural community road and socio- economic benefits of residents in the study area (improved income, quantity of high institutions, human population increase and increase in number of churches).

### **Statement of Hypotheses**

H0: There is no relationship between improved rural road and socio- economic benefits of residents in Omuama rural area (improved income, quantity of high institution, human population increase and quantity of churches).

## **II. Literature Review**

Abundant researchers have established that improved rural road were of socio economic benefit to communities across the globe. A strong reason Javier (2016) averred that rehabilitation of a rural road linking a remote coastal settlement to the city of León in western Nicaragua. His research maintained that an important decrease in transportation costs and travel times was predictable to improve rural households' access to modern urban markets. That the level to which the consequence impact on market prices for locally-produced goods may effectively reshuffle poverty and income differences in the shore as a result of the fact that the project must progress the heterogeneous distribution of the road's benefits. Whereas improving the road could have profited the poorest households by lowering the average cost of a basic basket of goods and by allowing fresh fish caught in the coast to be sold in urban markets as the cost of both import and export drops drastically. Similarly, Briedenban and Eugenia (2004) reported that the development of rural tourism route in South African conveys the agglomeration of activities, attraction; stimulate cooperation and partnership between local areas. They added that consequential countries input, together with public sector support, present opportunity for the development of small scale indigenous tourism projects in less developed areas.

In the central Himalaya villages, Lindy, Martin, Henrik, and Carsten, (2016) posited that the new road had significant and positive effects on unqualified household environmental income and negative effects on reliance as other income options became available. Their study maintained that wood product extraction levels remained below increment level and suggesting that the road did not have negative implications for local forest conservation. While evaluating the impact of new road on the inhabitants in rural area, Md, Anamika, Md, Mst, Arook, Md, Md, Md, Akib, Atiqur, Md, and Sarker, M. (2016) disclosed that exactly 76% of the residents were of the opinion that a new road have somany impact on occurring urbanization, 74% stressed that transportation of developed much in the study area while 65% new small scale industries initiated in the rural area with the help of new highway impacted. They retreated that subsequent to reconstruction of the road in 2002, 31.12% of human population increased in the locality within one year as accorded by BBS account whereas the involvement of women which enhanced unpredictably substantial percentage of people regarding trade in the village are under investigation. In addition, Amadi (1998) noted that road construction motivated quick increase of market-price for farm output, increment of farm sizes and boosted introduction of contemporary farming techniques. He continued by saying that road construction impacted growth on some of the infrastructure such as electricity, pipe-borne water, agro and allied industries but conclude that infrastructures offered the chances of employment in the village settlements, and additionally, builds forward and backward linkages for agricultural development in the rural areas. Again Sam and Paul (2019) also proved that the impact of new feeder roads are to facilitate the movement of workers out of agriculture. As prominent adjustments were lacking in agricultural products and income or assets, employment in village firms increased just a little and suggesting that with improved market relations, remote areas might persist to lack financial chances in India.

In another research Peter, Cook, and Cynthia (1990) on 20 year improved rural road impact in Kenya, southern American for Sea Tac, and Mexico indicated that focus were too narrowly on agricultural impact and failed to predict the significant increase in nonfarm interchange and allied economic reimbursement that bend sign by the reasonably towering value placed on travel time confirmed in the behavior of many rural travelers. According to them, the work demonstrated that the value reflects the significance of nonfarm employment and the benefits of improved mobility as well as service convenience that are critical to sufficient impact assessment. The study also lead to credence to that of Deborah and Annable (2008), who asserted that in extremely rural areas, road construction or improvement could serve as catalyst for the development of social-service provision in Ethiopia African. He maintained that weak relationship and inadequacy of motor

vehicles and capability to disburse for public transport was not an adequate condition for attraction of the mobility of the rural poor.

Anjali, Sam and Pual (2016) also posits that new roads impacted positively on school children's higherscore and increasingly pass school completion exams inIndia. In addition, stated thatheterogeneity Treatment is widely in consonant with a standard human capital investment model while effect size is negatively associated with forecast changes in opportunity cost of schooling and positively related to predictchanges in educational returns as impacts too are higher in villages with little assets at baseline and signifying impact.

In Nepalthe, the recent study of Lindy, Charlery,Matin and Carsten (2016) pronounces that a positive significant relationship exist between the new road and mean household income of USD 235 (28%) while there were no increase on side of income inequality. pertaining the side counterfactual site, the research found that the road has rather contributed to decreasing income inequality as the poorest familygain highest from the road construction, building it support-poor improvementinterference.

A study by Aggarwal(2018) asserted that households in treatment areas of India accounted lower prices, appreciated accessibility of non-local goods, facilitating greater market addition, and an adjustment in market access emanated rural households. The study explained that animprovement in the utilization of agricultural technologies, heave young members out of school to integrate the labor force as well as employment gains for younger children hadeffects in the economyof rural villages. Similarly,Aakesh and Ashish (2014) adduced that the provision of roads multiplied the employment of preventive health care among women and households impacted inIndia. Another finding from their work revealed that the boost in health care practices did not appear alone from income appreciation or decrease in cost travel but also from raise in the consciousness among households and individual, upgrading in health care quality, increase in social relationship inside and outside the villages and provision of significant approach for growing protective health care practices in developing nation.On exploring the impact of road construction and subsequent reorganization of the periodic market system on rural traders injos plateau and borno region of northern Nigeria,Gina (1995) noted that there exist the significance of road construction and maintenance programs for rural women and the importance of an appreciation of the specifics of cultural context.While in Ghana, Nicholas, Paul and Haupt (2010) states that goodsurface roads enhanced timely and smooth implementation of cocoa product know to be a major contributor to the nation's economic backbone from the growing zone to the market place. The authors maintained that road situation survey information in Ghana for the past years submitted that about 40 to 50% of the nation's entire road are in poor condition of which the government have therefore been putting measures to direct a huge funds in areas of road construction with the aim of improving condition of roads.

Javier (2016) reported that pitiable households in Nicaragua who benefit from road projects are likely to spend money on buses, Lorries etc. As the rural roads access has a number of influences on household utilization. His findings further proved that consumption impact identified does not appear to be equally shared by all income groups whereas rural roads have a positive impact on health outcomes while education were calculated as predominance of illiteracy are little. On the effect of rural improvement, Lalnundanga, Lalrintluangi, Churchill and Malsawmkima (2015) stresses that road construction does not merely increases the means of livelihood in communities of Lunglei district in the hilly terrain but increases the quantity of educational institutions and healthcenters. The study also posited that many household do other types of work such as carpentry and handloom based on the fact that the better road condition motivate the importation and exportation of raw and processed goods.

Javier and Carmen (2002) proved that improved road accessibility can be connected to variations in income sources and as well enhanced non-agricultural income chances, specifically from wage- employment sources in Peru. Adding that income increase stands not been harmonized by an equivalent consumption increase but through increases of livestock because road quality improvement is considered as real as transient.

Catherine, Geetha and Lana (2016) see that road constructionreduces travel time and the cost which enables farmer's accessibility to markets without much time consumption. They established that reduction in cost of transportation activated accessibility to agrarians' products at inexpensive amount and merchants may perhaps access the market places at a cheaper rate while the farmers multiply their agricultural products. Another finding from the research observed that men had the highest profit than women for the improved access to markets that is connected to road improvement as men produce cashcrops more than female andconcluded that improved road network attract external investors in recipient populations as well as employment chances which increases household income and reduces perpetual poverty.

While examining the role of roads in improving agricultural livelihoods in Nepal,Slesh (2018) disclosed that increases in value of land were determined by households' involvement in agricultural markets, better income and agricultural productivity. He stressed that the reduction in the remoteness to a road added to the profitability of agriculture product whereas increases the application of fertilizer in agricultural practices and decreases the market cost of peats or fertilizer.The view is supported by Project Performance Evaluation Report for thelao people's democratic republic (2005) which stressed that pavement rehabilitation, replacement of some

bridges, improvement of feeder roads, spur roads, and periodic maintenance of prominent national and provincial roads anchored its objectives on the moderate of transportation costs and creation employment opportunities which promoting the county economy and encouraging linkage in the Greater Mekong Sub county.

According to Peter (2006) road improvement in remote areas of Lao People’s Democratic Republic can only donate meaningfully to the drastically reduction of the poverty rate, promoting pupils educational participation and assessment of quality health care. Those rural roads in the countries are a major developmental problem meanwhile their improvement yield immeasurable profits or benefit. In addition, Kongens (2008) maintains that reduction of poverty most be important practice of road improvement that will always convert dry season access roads to all season access as one fourth of the poverty decline manifest straight from the practices of road improvement. He finalized that poverty are hardest for the advancement of dry season access roads to all weather roads while significant educational and health profits may be obtained through provision of dry season road access to certain rural households that lack it currently.

### III. Method And Procedure

The survey research design was adopted in this study while primary and secondary data forms the sources. The secondary source of information used in this research was obtained from previous and relevant work on socio economic impact of improved rural road and allied areas from published and unpublished materials. The published sources of secondary data were gotten from several references such as books, research work, conference/seminar and working paper, government records and reports from textbooks; academic and professional articles in journals on the subject of learning. The primary data were obtained through structured questionnaire and field observation. A 5 point likert scale of questionnaire was prepared for the study to draw answer from the rural dwellers to cover subjects such as the bio data of the respondent, socio-economic benefits of good surface road in the study areas, and responsible factors of rural-urban migration while field observation was gained from environmental contact.

Therefore, the sample frame used for this study emanated from the research area, and had the total number of 273 with the average of two (2) household in a particular compound. However, the smaller nature of the area under investigation necessitated the sampling of the entire six communities that constitute the vicinity. A total of 252 copies of questionnaires were distributed to the public in the entire six communities (ogba, ajuloke, eber, obiohia, ofeh and ohim-oyoro) 236, representing 76 percent were returned in Omuma region. Ogba consumed 42 questionnaire representing (16.7 %), eber consumed 42 questionnaire representing (16.7 %) ajuloke consumed 42 questionnaire representing (16.7 %) obiohia had 42 questionnaire representing (16.7 %) ofeh consumed 42 representing (16.7%) and ohim-oyoro 42 representing (16.7%). See the table 1 below. Table 1: the sampled communities and populations

S/N	Community	Projected population	Household population	No of compounds	Sample size	%
1	Ogba	1,100	200	73	42	16.7
2	Eber	1,900	175	61	42	16.7
3	Ajuloke	980	120	44	42	16.7
4	Obiohia	902	105	37	42	16.7
5	Ofeh	775	98	26	42	16.7
6	Ohim-oyoro	520	81	32	42	16.7
TOTAL		6,177	779	273	236	100%

#### Data presentation and analysis

Data were decided and presented in tables through mean value, standard deviation and Spearman rho correlation. The socio-economic benefits or impacts of improved rural road were identified and demonstrated.

#### Socio-Economic Benefits of Improved Rural Community Road

Ecumenically, thirteen socio-economic benefits of improved rural feeder road were identified from the works. These are socio-economic benefit that rural communities derived from improved, constructed or rehabilitated road. These benefits were assessed on a 5 point likert scale of significance ranging from 1 to 5, where 1 was the least score of not actually impacted or benefited at all and 5 being a very strong socio-economic benefit of improved rural community route. A mean score (x) was derived by dividing the total answer for each of the improved road benefit by the maximum score attended. As recommended by Nwankwo (1999), every examiner must fix a mean workbench greater than the weighbridge. Therefore, a mean score of 3.45 was used as an assessment index for accommodating or declining each socio-economic benefit by the investigator. The benefits or socio-economic impacts with assessment value of 3.45 or above were considered as a protuberant and very much accepted benefit of improved community rural road. The mean score (x) of the benefits or impacts

was ranked in order of benefit from the top to the bottom (ie 1st to 13th). Twelve socio-economic benefits of improved community route were identified.

#### IV. Results

Embracing the assessment value obtained from the weighbridge of the analysis, 13 socio economic benefits were identified as the significant factors or benefits of improved, constructed and rehabilitated rural community road. The result presented in Table 2, proved That Accessibility to market/connectivity to urban area appeared the most first socio economic benefit of improved rural or community route in omuma region, with assessment value of 4.00. The benefit was strictly followed in order of positioning or ranking by foreign investors association (3.98), importation and exportation of agrarian product (3.96), employment increase (3.94), reduction of transportation cost (3.92), Eradication of poverty rate (3.94), improved income (3.89), human population increase (3.85), reduction in cost of food (3.83), increase of social relation (3.81), land value appreciation (3.79), quantity of educational institution (3.65) and increase in number of churches (3.61). This implies that people are willing to dwell in rural communities with good surface road that gives a sense of connectivity to urban settlement and expel manual agricultural practices. Since accessibility enhanced smooth movement of agrarian product and also developed other facet of economy that eradicate poverty and resist rural urban-migration. See the table below.

**Table: 2** Improved Rural Route Socio Economic Benefit across communities in omuma

Variables	Rank	Mean ± SD
Reduction in Transportation cost	5 <sup>th</sup>	3.92± 0.50
Improved income	7 <sup>st</sup>	3.89 ± 0.53
Employment increase	4 <sup>th</sup>	3.94± 0.48
Eradication of poverty rate	6 <sup>th</sup>	3.90± 0.52
Accessibility to market and connectivity to urban area	1 <sup>th</sup>	3.87± 0.55
Quantity of educational institution	12 <sup>th</sup>	3.65± 0.74
land value appreciation	11 <sup>th</sup>	3.79± 0.62
Human population increase	8 <sup>th</sup>	3.85± 0.57
Reduction in cost food	9 <sup>th</sup>	3.83± 0.59
Increase of social relation	10 <sup>th</sup>	3.81± 0.61
Importation and exportation of agrarian products	3 <sup>rd</sup>	3.96± 0.46
foreign investors association	2 <sup>nd</sup>	3.98± 0.44
Increase in number of churches	13 <sup>th</sup>	3.61± 0.78

#### Hypothesis

H0: There is no significant relationship between improved rural road and socio- economic benefits of residents in Omuma local government. In lieu of this hypothesis, four tests were conducted via quantity of educational institution, improved income and human population increase of the dwellers. The analysis was conducted utilizing Spearman's rho correlation coefficient.

Improved income: The analysis on the relationship between improved rural roads and household improved income gave a correlation coefficient of ( $r = .254, p < 0.5$ ) which submitted that there is a stronger positive relationship between the improved village roads and rural residents income in omuma communities and populace. The strength of the relationship is strong and the coefficient of benefit is 56.1% which indicates 56.1 percent shared variance implying that, improved rural road does not only link or connect the remote communities but attract internal and external investors in the remote areas, create employment opportunities for the unskilled and skilled population and reduces poverty rate.

Quantity of high institution: The analysis in respect to the relationship between rural improved road and quantity of high institution (national teachers institute and university satellite campuses) gave a correlation coefficient of ( $r = .182, p < 0.5$ ). This submits that there is a positive relationship between improved rural road and quantity of educational institutions in omuma remote area. The more the improvement of rural road network in the remote areas the more it attracts the establishment of new satellite campuses/ institutions for the remote areas the high the number of educated people and the high the integration of the literate and people of sand mind in the society. This implies that the strength of the relationship is strong and the coefficient of the impact indicates 49.2 percent shared variance implying that, the improvement of roads in remote regions increases the quantity of basic, secondary and high educational institutions in rural areas.

Human Population increase: On the side of human population increase, positive relationship was discovered between human population increase and construction of roads in Omuma rural hemisphere of ( $r = .268, p > .05$ ). Based on the analyses, there is a significant relationship between improved rural roads and human population increase in the area. The hypothesis also revealed that increase in human population triggers competition and increases the value of landed property. As construction of remote roads conveys investor's populations of different land use activities especially commercial and industrial whose

engagement increases job opportunity and reduce poverty as well as rural urban- migration. The strength of the relationship is strong and the coefficient of benefit is 63.1% which indicates 63.1 percent shared variance.

Quantity of churches: For the increase in number of churches, the result showed significant relationship between rural improved road and quantity of churches with a correlation coefficient of ( $r=.169, p<0.5$ ). This suggests that there is a positive relationship between improved rural road and quantity of churches/religious houses in omuma remote area, implying that the more the improved road network in the remote areas the more the township churches branch locate their branches in remote areas thereby reducing the practices of African traditional religion to increase Christianity other western religious practices. See the table below for details.

Socio-economic benefit/variable	Spearman rho coefficient	Sig.	N.
Quantity of high institution	.182***	.000	236
Improved income	.254***	.000	236
Human population increase	.195***	.000	236
Quantity of churches	.169***	.000	236

## V. Recommendations

1. To discard unpaved route in Nigeria rural areas, rural communities should be connected with improved, adequate and seasoned road infrastructure and services. The improvement or construction of these rural roads will link rural communities to urban centres and attract internal and external investor to boost community economy. Such improvement or construction should also be carried out with political will.

2. Institutional, commercial and industrial related land use activities that develop human resources to generate employment and improved household income in rural vicinities should be relocated to remote areas after improvement and connectivity of village roads. Such activities should be encouraged to reduce rural- urban disparities and migration.

3. Since improved rural road reduce cost of transportation, connect communities and enhance faster movement of agrarian productivity, town planners, civil engineers, policy makers and other members of built environment should take into consideration the improvement of community roads before planning and allocation of other infrastructural facilities in rural areas. There is the need to review existing rural planning structures with the aim of sanctioning those that neglect or contravenes the improvement of rural feeder roads before the commencement of development and provision of other facilities.

4. After improvement and connection of rural road network, Struggle should be made to provide schools, hospital, fire service, financial institution, security, market, parks, industries, constant power supply, hotels, courts and other government department. The provision of some of the social amenities or infrastructure will eradicate poverty reduce the wide gap between rural and urban areas. So that areas perceived as rural will develop and possess certain characteristics urban settlement.

## VI. Conclusion

This study identified the socio economic benefits of constructed or improved road in omuma rural. One null hypotheses formulated in the study was; There is no significant relationship between improved rural road and socio- economic benefits of residents in Omuma local government (improved income, quantity of high institution and churches). 13 socio economic benefit namely: reduction in transportation cost, improved income, employment increase, eradication of poverty rate, accessibility to market and connectivity to urban area, quantity of high institution, land value appreciation, human population increase, reduction in cost food, increase of social relation, importation and exportation of agrarian products and foreign investors association were identified. However, the result for the relationship between improved income, quantity of high institution, human population increase and quantity of churches proved strong and positive relationship in omuma local government area.

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Ubani Princewill. " An Assessment of Socio-Economic Benefits of Improved Rural Road in A Nigeria L.G.A." IOSR Journal of Environmental Science, Toxicology and Food Technology (IOSR-JESTFT) 13.6 (2019): 25-31.