



## The Nexus Among Road Transport and The Economic Growth in Nigeria

Gylych Jelilov\* - Mustapha Bulama Kachallah

Department of Economics, Nile University of Nigeria, Abuja, Nigeria

[jelilov@nileuniversity.edu.ng](mailto:jelilov@nileuniversity.edu.ng)

**Abstract:** This study has examined the impact of road transport in Nigerian between the periods 1995-2014. It also examined the trend and pattern of the length of federal roads in Nigeria over the years under coverage. This study made use of secondary data obtained from National Bureau of Statistics Statistical Bulletin 2014. Descriptive statistics and econometric techniques were employed in analyzing the data. In descriptive statistics I made use of table while in the area of econometrics, I employed the ordinary least square technique to determine the impact of explanatory variables viz; the contribution of road transport, the length of roads and premium consumption on economic growth. The result of the analysis shows that there exist a positive relationship between economic growth and contribution of road transport and length of federal roads and a negative relationship is observed between economic growth and premium motor spirit consumption. Road transport has impacted on the real sector of the economy like manufacturing and agriculture etc. In a nutshell, we can say that road transport has a direct impact on economic growth. Therefore i recommend that the government should provide efficient public transport service at a subsidized rate so that people use fewer vehicles to avoid unnecessary spending on premium motor spirit consumption.

### To cite this article

[Jelilov, G., & Kachallah, M.B. (2017). The Nexus Among Road Transport and The Economic Growth in Nigeria. *The Journal of Middle East and North Africa Sciences*, 3(9), 22-29]. (P-ISSN 2412- 9763) - (e-ISSN 2412-8937). [www.jomenas.org](http://www.jomenas.org). 4

**Keywords:** Transport, GDP, Nigeria, Development

### 1. Introduction:

Road transport emanated from 1904 when Lord Laggard constructed the mule road from Zaria to Zungeru in the Northern States of Nigeria that was later linked to Sokoto to Katsina and Maiduguri (Lantana, 2015). The first motorable road is the one linking Oyo and Ibadan that was constructed in 1906 that is two years after the one constructed from Zaria to Zungeru. These efforts by government necessitated the mobility of agricultural produce from various states for export.

Road transport share to the Gross Domestic Product (GDP) is low compared to other developed countries. Road transport share of the Gross Domestic Product (GDP) of developed economies is about 11% to 16% of the total gross domestic product, while in Nigeria the share of road transport in total gross domestic product fluctuates around 3% to 12% (Nnoji, 2002).

In Nigeria, road transport relatively involves high cost due to inadequacy and inefficiency in road transportation infrastructures. Road transport cost on the feeder to trunk roads is costly that increase the cost of selling transported commodities for about 55% of the price of which is transported. The efficient the road transport system is, the lower the cost of transportation charged by commercial transporters, the large productions economically important movements are bulky, the lower the value of mineral and agricultural products.

Mobility is one of the essentials needed to facilitate day-to-day human activities. As of recent times, human survival and societal interaction depend on the ability to mobilize people and goods within points. Cities could not exist, and intentional trade may not be able to operate without systems to transport people and goods cheaply and efficiently. Transportation is the physical movement of goods/services and people from one place to another (Oluwalaiye, 2012). Road transport is the physical movement of goods and people from one place to another by road. As a result, road transport has numerous impacts on Nigeria's economic growth and development which helped link the society and the entire country together. In other words, as society grows regarding of the population, the need for interaction among its various components also grows thereby requiring quality and effective road transport systems. In respect to the role, transport plays particularly road transport in the development and promotion of socioeconomic integration particularly in areas surrounded by water like Bayelsa, to some states in the far North buried in the desert; road transport becomes key to economic growth via movement of goods and human resources.

For instance, in Nigeria, the First, Second, Third and Fourth National Development Plans (NDPs)



contributed 19%, 23%, 22% and 15% respectively of the total government expenditure most of which are invested in road transport sub sector. Such effort is to provide rapid improvement in road transport sub-sector by the government to increase rural-urban road network.(Adeyemi, 2001). Transport costs and good conveyance system are very vital and crucial for a region's competitiveness because they provide easy access to markets resources.(Dodgson, 1974)

Urban areas have a tendency to develop at nodal points in the transport network and places with good road network will possess a relative advantage over locations having a poor network.(Wyatt, 1997). Therefore, this research is focused especially on the significant impact of road transport system in Nigeria. Hence, a well-integrated and functioning road transport infrastructure enhances standard of living, it allows markets to operate and transfer factor inputs, it provides vital social links amongst diverse public facilities and bring about interaction, it also helps in generating revenue for government expenditure through vehicle registration, fines and toll gates pass, it provides access to employment, health, education, and services, public road transport facilities help in reducing regional inequality, enhances and connects regional and national(local) and international markets together in order to promote domestic and international (sub-Saharan trade) economic integration (Lius Serven, 2008).

Road transport is the most commonly used mode of transportation in Nigeria today. This is more predominant in Nigeria than in most other West African countries because of the poor state of alternative means of transportation by which journeys could have been made and also due to the psychological satisfaction offered by the possession of a car (Aschauer, 1990).

Poor road transport system leads to great challenge and hardships as road users might not be able to have better access social amenities such as telephone services, hospitals, schools, as well as quick repair of electricity infrastructure on demand, as a result of less developed roads; this problem continued to persist in Nigeria leaving most of the villages isolated from in respect to modern societies .

In Nigeria, road transport sub-sector faces numerous problems which draw our attention on how these problems hinder economic growth and development. Road transport serves two broad purposes; the first one is revenue generation to the federation account and secondly; job creation to a reasonable number of the population. On the side of government, the government has been budgeting huge amount of money to road transport sub-sector to facilitate economic activities and foster social interactions in the system. Nevertheless, this has not been achieved based on the previous research carried out on the same field(Akuchukwu, 2009). Lastly, inadequate credit facilities have been identified as a major

impediment to improving road transport sub-sector in Nigeria.

The study of the road transport sub-sector in the Nigerian economy is of great importance as the study will create an insight to the study of the causes of those road transport problems and also suggest solutions through policies that help in reducing these problems. This research, therefore, is expected to shed more light on the appraisal to the impact of road transport as regards to economic growth and development in Nigeria. Road transport is the pioneer transport system of any economy, for instance, Nigeria, such as aspects relating to inefficiencies and lack of good road transport in Nigeria in lined with stagnant rate of economic growth (gross domestic product in particular) is vital, as well as poor government policy on transportation as a whole (Lack of checks of fees charged by both private and public transporters, fuel scarcity. All these together triggers prevalence of bad roads and lack of highway security trimmed down the performance of road transport sub-sector in Nigeria which has steady contributions to the economic growth in Nigeria. In a nutshell, this study will help to investigate the role which road transport plays in economic growth and development of Nigeria as well as how to overcome the problems of road transport and put proper policies to improve and increase the performance of the sub-sector.

## 2. Literature Review:

The position of road transport cannot be overstressed to a country as proficient road transport infrastructure facilitates and turns as a provocative element that contributes to economic development (Orakwue, 2015). Expansion of road transport facilities makes the most valuable contribution towards political, economic, as well as social development. In initial phases of the economic position of a country, subsistence agriculture is the most valued sector of the economy like in Nigeria; road transport brings the most important parts of the economy together. In as far as agriculture is a concern, the need for road transport is therefore not comparable to better seeds, fertilizers application, and other important things.

The efficient road conveyance system contributes to economic growth by reducing the cost of production within an economy through the suitable carriage of raw provisions, improving both internal and external economies of scale in the production process, assimilating markets, as well as providing a means of communication between and among people from different locations (Faridi, 2011). In addendum, this mode develops and enables competitive advantage of the system in the production of goods and thereby stimulates the acts of trade.

Road network carries a vital constituent in urban development as roads provide accessibility required by



different land uses and the proper functioning of such urban areas depends on the efficient transport network, which is a backbone of their very existence (Magaji, 2010).

Transportation or transport comprises the movement of animals, people, as well as the movement of goods from one place to another. There are several modes of transport which include cable, water, rail, pipeline, air, road, and space. All these means can be distributed into groundwork, vehicles, and tasks. Transport is important since it enables buying and selling amongst people, and as such it creates a good atmosphere for civilizations as a social factor.

Transport facilities are made up of the static fittings needed for transport, that can take the form of airways, roads, waterways, railways, pipelines, and passages and workstations such as subway terminals, automobile stations, stores, airfields, seaports trucking terminals, and gas stations. Terminals are points mainly for arrivals and dispatch of passengers and goods to facilitate transport activities.

In the transport sector, management, control, ownership as well as overall –supervision of infrastructure is done by either private sector or public sector, subject to who owns the means of production in that country. A well-organized road transport system must consist of support and determination for national and provincial development process leads two rudimentary components, such as the provision of transport services and infrastructure, developing in accordance. Moreover, vehicles and infrastructure are the most tangible part of the structure.

Road transport provides an effective avenue that creates the greater connection between economic, social and infrastructural development that leads to the highest utilization between economic, social and infrastructural development which ensures optimum employment of existing or freshly planned infrastructure amenities.

Road transport infrastructure exists base on the following couple of reasons for trade and exchange to take place in the sub-Saharan Africa to stimulate agriculture productivity and output. The first reason was that most of the sub-Saharan African countries have agriculture sector dominating the largest portion of the gross domestic product of agricultural output and productivity is particularly important in Sub-Saharan Africa for three reasons. First of all, agriculture is the main driver of the economy in the sub-Saharan African countries. The second aspect is that people who live below poverty line are those from the rural areas; and the last but not the least is that there is persistent increase in the number of paved roads which bring about waste of travel time that leads to high transportation cost of agriculture produce which gives rise decreased agricultural productivity and growth (Tunde, 2012).

In Nigeria, road transport infrastructures provide necessary mobility to foster economic growth and development. So, all other research papers carried out on the impact of road transport on Nigerian economic growth are done in order to stitch those gaps left to be reviewed, in essence this paper will tell us more about the remaining gap left and as such we will see how significant it may be at the end of the research (Ogunsaya, 1987).

Observed that there are three main types in which rural societies operate; these are as follows; bush paths, unsurfaced rural routes as well as the surfaced rural roads. Moreover, the bush path is very common in our society because it is most used in villages which are usually very narrow and highly unorganized and least developed accompanied by the high insecurity of all the routes. Bush paths usually connect villages with farms and traditional centers like shrines that found to be located inside bush with overgrown weeds by the route sides more often during the rainy season. Unsurfaced roads are usually characterized to be paved, with low-quality bridges, circuitous and of course the mother of all narrow and the topographic condition of the area which is very difficult to pass in the rain period (Filani, 1993).

There are several theories that attempted to explain how road transport infrastructure investment can bring about economic growth and development. First of all, when we take a look at Harrod Domars' growth model, the key and the most important igniter of any strategy for development is the mobilization of saving through individual and business savings in order to generate funds for long and short term investment to accelerate economic growth. It was critically argued that all developed countries had passed through some stages of growth as follows; the traditional society, the preconditions

For take-off into self-sustaining growth, the take-off, the drive to maturity, as well as the age of high mass consumption as propounded by W. Walt Rostow in his contribution to linear stages of growth theories in his book stages of economic growth. Having said that, Harrod-Domar developed his idea from take-off as one the fundamentals or stage to attain economic growth from Rostow's point of view, and critically explained the necessary condition towards achieving such. In addition to this, for any developing economy to proceed economic growth, there must be the mobilization of domestic saving accompanied with foreign aid (be it financial or technical aid) is necessary to generate and raise funds to service investment. The mechanism through which countries can improve road transport system (RTS) is through investing in road transport infrastructures (RTI).

Therefore, Harrod-Domar developed AK model out of Rostow's initial contribution to linear stage model where he assumes that net investment is a portion of the national income, net investment is a change in capital stock. The ratio of investment depends on how much



savings is injected into the economy through the financial intermediaries (Smith, 2004).

Public infrastructure has to be one the variables that contribute to investment spending of a country. The literature on economic growth shows public infrastructures as incorporated as another factor input in the production function which increases productivity and reduces the cost involved in a production (Barro, 1990). This tells us that an increase in productivity as a result of increased investment in public infrastructures like roads does not only hold in the central government but also at the regional level. All things being equal, without traffic jam, an additional user who will benefit from the public infrastructure may not bring about an increase in the cost of producing or providing that infrastructure. So, public infrastructure has a positive externality, however; despite the externality, road infrastructure has a low return.

According to neoclassical growth theory, gross domestic product growth is as a result of an increase in capital through an increase in saving and increase in investment through an increase in labor efficiency and sufficiency as well as technological improvement and innovation. In a closed economy where there is no room for export and export to occur, there is low savings rate less to the incentive to save; that is a situation where consumption exceeds savings, savings tend to be low which gives rise to low investment. Nevertheless, in an open economy, foreign investment stimulates capital inflow from other countries to one particular country where the ratio of capital and labor is lower than the return on investment (Smith, 2004).

In some researches, it was found a quantitative analysis between road transport and economic development in Fujian economy. A correlation on Fujian transportation and the entire country's economic progress by the coefficient of determination and gray understanding correlation and finalized that there is a great correlation between Fujian economic growth and road transport. Also, by a gray dynamic model and road transport elastic coefficient, they evaluated and analyzed how road transport adapted to Fujian economic growth and as such they concluded that the condition of Fujian road transport at future has are Levant policy to achieve economic growth.

McMillan et al. (1994), adopted time series data to estimate VAR models and find no clear evidence of significant effects publicly provided capital on private output. The variance estimation discloses that public capital is productive. But the contribution of public capital to economic growth is smaller than what is found in the protuberant research of (Ashauer, 1989).

Ismihan et al. (2005), tend to validate the Karada's findings at the collective level. Their findings showed slight change on the effect of macroeconomic instability on public and private capital accumulation and growth of Turkey from 1963 to 1999 by employing a CECT. The

result obtained shows total public investment has a positive effect on turkeys' gross domestic product. Regional development of transport infrastructures constitutes a quiet number of different stands. A remarkable number of papers considered that transport infrastructures increase accessibility and decrease the cost of transportation.

In related research, Graham examined that the productivity impact varies across and also strong for services and relatively smaller to the manufacturing sector. Moreover, his research shows a massive collection of economies is subject to spatial decomposition.

Just recently, Melo found out productivity effects to be strong within twenty minutes' drive time to city center has declined rapidly in a non-linear way. This shows that road transport investment should be looked forward to providing and construct high-density roads in order to avoid congestion.

Aworemi et al. (2008), show that socioeconomic features of community residents are categorized into income level, sex distribution, occupational categories, age structure, educational /training length and promotion on income spent on road transport. He further observed that socioeconomic features of communities are the respondent.

Also, some researches show the relationship between infrastructures development and economic growth is one of the recent topics of discussion in economic and scientific research. They examined that infrastructures change the household decision and firm's decision to invest. This draws attention to changes in consumption pattern of individuals and businesses. Households are worried about how to move around to purchase goods and services, firms, on the other hand, are after cost effectiveness of transporting raw materials.

Olomola (2003), carried out a study on Understanding Poverty in Nigeria and found out that, inadequate provision of transport infrastructure and services provide a basis for explaining the incidence of poverty across various Nigerian communities in both urban and rural areas. The categories of transport problems that can be identified are: bad roads, fuel problem (high fuel price, shortage of fuel supply and high transport cost), traffic congestion (long waiting time, bad driving habit, hold-ups), inadequate high passenger capacity/mass transit vehicles and overloading, high cost and shortage of spare parts, poor vehicle maintenance and old vehicles.

Ogunsaya (1987), also identified a strong relationship between transportation, underdevelopment, and rural area. He argued that the greater the degree of the rural area, the lower the level of transport development. These consequences have been responsible for low transport development in rural areas of Nigeria which houses 70% of the nation's population.



Numerous bodies of empirical research papers have shown whether investment in public infrastructures like road transport makes a significant contribution to economic growth of Nigeria.

Barro (1990), observed that the effect of public investment and public consumption spending gives cross-country growth rate. After scheming for some indices, it was notified that public investment has no significance on economic growth, who laid more emphasis on the rate of economic growth in has a negative relationship to the part of government consumption spending. (Canning et al., 1999). Employed the use of panel data to examine the involvement of road transport network to economic growth. They found out that there is a strong correlation between public infrastructures investment and in transportation and economic growth.

Devarajan (1996), placed proof from some developing economies that the bit of entire government spending; consumption and investment in ground work have no substantial effects on economic growth. Addition to this, the writers came up with an important masterpiece impact of government expenditure.

This composition includes the share of consumption spending has a relatively positive effect on economic growth; nevertheless, it may result in negative effects on economic growth if there is an increase in the share of public investment.

Investment spending on transport infrastructures and communication infrastructures accelerates economic growth. This leads to a conclusion that government in less developed countries should privatize public infrastructures and also interchange public resources from investment goods to present consumption.

One of the sources of endogenous growth model is investing in transport infrastructures under the assumption of the balanced exogenous growth model. Public d pending does not accompany any effect in the long run.

King, show that economic growth base on endogeneity on gross domestic product tends to portray a stochastic path and long lasting economic policies fluctuate to have long term penalties for the growth of the gross domestic product. In permanent economic policies, long term penalties vary with the level of gross domestic product.

The framework that supports the liaison between transportation and economic growth can be expressed and enlightened by employing different growth theories. The endogenous growth theory makes it clear that those factors that determine the growth rate of gross national product left unsolved by Solow and neoclassical growth theorists or model.

Road transport is efficient to accelerate economic growth, but the arguments behind this are that endogenous growth will help provide the passage through which satisfactory transport infrastructures will accelerate economic growth through efficient distribution system

ED'S, thereby improving the human capital also enhance productivity. The medium through which the above-mentioned points could be attained is through strong and energetic effective road transport system in Nigeria.

If we take a look at infrastructure into consideration, infrastructures, endogeneity delinquent with efforts to make greater and tremendous emphasis on transport infrastructures.

### 3. Methodology:

This study employed time series secondary data to examine the relationship between the transport infrastructure (Road) and Gross Domestic Product (GDP) between the periods of (1995-2014). The variables consist of a length of road in kilometers, premium motor spirit consumed, the contribution of road transport to Gross Domestic Product (GDP) and total Gross Domestic Product (GDP). The data are obtained from National Bureau of Statistics, the Central Bank of Nigeria Annual Report and Federal Ministry of Works.

Most research papers have shown remarkable consideration on the issue of road transport in Nigeria that is more concern with the inaccessibility and hardships faced by locals talk less of moving farm produce to market and mobility to facilities across. Since road transport contribution to the Gross Domestic Product (GDP) does not stimulate growth overnight, then we link it up with a simple econometric model to explain the parameters used.

$$\begin{aligned}
Y_t &= \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + U_t \dots\dots\dots 1 \\
Y &= F(\text{CRT}, \text{LR}, \text{PMS}) \dots\dots\dots 2 \\
Y &= \beta_0 + \beta_1 \text{CRT} + \beta_2 \text{LR} + \beta_3 \text{PMS} + U \dots\dots\dots 3 \\
\text{Now, for the purpose of this case, we introduce Cobb-Douglas production function such that} \\
Y &= F(\text{CRT}^a + \text{LR}^b + \text{PMS}^c) \dots\dots\dots 4 \\
\text{Ln} Y &= a \ln \text{CRT}^a + b \ln \text{LR}^b + c \ln \text{PMS}^c + U \dots\dots\dots 5
\end{aligned}$$

Note that all variables are in natural logarithm form as illustrated above.

Where;

- LnY: Gross Domestic Product
- LnCRT: Contribution of Road Transport to GDP
- LnLR: Length of Roads
- LnPMS: Premium Motor Spirit
- $\beta_1, \beta_2, \beta_3$ : Coefficients of the parameter
- $B_0$ : Intercept
- U: Stochastic Term
- A priori expectation  $\beta_1 > 0, \beta_2 > 0, \beta_3 < 0$

All the variables are in their natural logarithm to capture all the variables used. The variables can be described below; Gross domestic product (y) is the market value of all final goods and services produced and measured annually in a country.



The contribution of road transport (CRT) to gross domestic product is some resources contributed by road transport activities to the total gross domestic product.

The length of the road (LR) is the total kilometers constructed by the federal government to facilitate transportation of goods and services.

Premium motor spirit (PMS) is total amount fuel consumed by vehicles in the course transporting passengers and goods in a given period

**4. Data Presentation, Result, and Analysis of Findings:**

4.1. Table 1. *Distribution of Relative Indicators Used For The study Analysis*

Year	Contribution of Road Transport to GDP CRT (N)b	Length of Federal Roads LR (km)	Premium Motor Spirit PMS consumption (metric tons)	Gross Domestic Product GDP (N)b
1995	8.2	32,097.05	2,735,700.30	28,546,958,641
1996	8.4	32,097.05	3,454,327.50	34,987,951,375
1997	8.6	32,097.05	4,461,348.00	35,822,342,618
1998	8.9	32,097.05	2,792,112.00	32,004,613,750
1999	9.2	32,097.05	4,475,565.00	35,870,792,988
2000	9.5	32,097.05	4,752,568.00	46,385,996,027
2001	9.9	33,087.00	5,397,577.40	44,138,014,092
2002	11.7	33,087.00	6,556,675.50	59,116,868,250
2003	11.9	34,340.95	6,585,614.00	67,655,840,108
2004	12.6	34,340.95	7,308,099.20	87,845,403,978
2005	13.4	34,340.95	8,644,263.00	112,248,324,603
2006	14.3	37,721.32	5,925,738.20	145,429,802,542
2007	15.3	36,182.80	5,750,174.60	166,451,202,370
2008	16.4	36,182.80	6,894,459.30	208,064,724,514
2009	17.5	36,182.80	6,828,814.40	169,481,270,115
2010	18.7	36,182.80	6,594,168.40	369,062,403,182
2011	20	36,182.80	1,303,736.00	411,743,801,712
2012	21.4	36,182.80	1,134,534.00	462,979,245,902
2013	22.9	36,182.80	1,237,307.00	521,803,314,654
2014	23	36,182.80	1,211,307.00	536,803,314,654

Source: National Bureau of Statistics (NBS), statistical bulletin 2014

4.2. Results and Analysis of Finding

Table 2. *Results E-Views Output*

Dependent Variable: LOG(GDP)  
 Method: Least Squares  
 Date: 06/15/16 Time: 21:54  
 Sample: 1995 2014  
 Included observations: 20

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	4.955572	15.25245	0.324903	0.7495
LOG(CRT)	2.598838	0.268427	9.681735	0.0000
LOG(LR)	1.465004	1.567408	0.934666	0.3639
LOG(PMS)	-0.102844	0.062746	-1.639053	0.1207
R-squared	0.983932	Mean dependent var	25.41439	
Adjusted R-squared	0.980919	S.D. dependent var	1.038036	
S.E. of regression	0.143389	Akaike info criterion	-0.869659	
Sum squared resid	0.328965	Schwarz criterion	-0.670512	
Log likelihood	12.69659	Hannan-Quinn criter.	-0.830783	
F-statistic	326.5817	Durbin-Watson stat	2.376088	
Prob(F-statistic)	0.000000			

Source: Output of the E-Views Regression

$$\text{Log (GDP)} = 4.955572 + 2.598838\text{Log (CRT)} + 1.465004 \text{Log (LR)} - 0.102844 \text{Log (PMS)}$$

S.E (15.25245) (0.268427) (1.567408) (-0.062746)  
 T-Value (0.324903) (9.681735) (0.934666) (-1.639053)  
 R<sup>2</sup> = 0.983932 F-Value = 326.5817

Adjusted R<sup>2</sup> = 0.980919 D.W = 2.376088 N = 20

Note: Statistically significant at 5% level of significance.

From the results obtained, it can be seen that contribution of road transport to GDP shows a positive relationship with the regressor proxied by Gross Domestic Product (GDP). It shows that a unit change in CRT will bring about 2.598838 average increase to the regressor other variables held constant. A priori expectation is consistent and as such, it is statistically significant.

There is a positive and direct relationship between road transport and Gross Domestic Product (GDP). The value of road transport to the Gross Domestic Product (GDP) as indicated as 2.598838 implies that Gross Domestic Product (GDP) would increase by 2.598838 amounts; whenever there is an increase in the contribution of road transport productive activities, it will lead to increased economic growth.

The length of roads has a positive relationship with the regressor proxied by Gross Domestic Product (GDP). From the results obtained, the length of roads has a positive relationship with the regressor proxied by Gross Domestic Product (GDP). It shows that a unit change in LR will bring about 1.465004 potential average increase in GDP centers Paribas. It is consistent with the a priori expectation but statistically not significant.

There is a positive relationship between the length of federal roads and Gross Domestic Product (GDP). The more roads are constructed, the more it facilitates and stimulates economic growth. As it can be seen from the result obtained, an increase in the construction of federal roads will bring about 1.465004 average increase to the national output.

Premium Motor Spirit (PMS) consumption has a negative relationship with the regressor proxied by Gross Domestic Product (GDP). From the results obtained, it shows that a unit change in PMS will bring about - 0.102844 potential average decreases in the GDP centers Paribas. It is also consistent with the a priori expectation but also statistically not significant.

Moreover, there is a negative relationship between premium motor spirit consumption and Gross Domestic Product (GDP). This reflects the fact that huge consumption distorts the growth of Gross Domestic Product (GDP) because the desire to save is low in Nigeria and as such Gross Domestic Product (GDP) decreases by -0.102844.

R<sup>2</sup>: Base on the result obtained, it can be seen that 98% of the total variation in the Gross Domestic Product (GDP) is explained by the contribution of road transport to the Gross Domestic Product (GDP), the length of

federal roads and premium motor spirit consumption. It can be concluded that our model has a very good fit; only 2% is left unexplained, and as such, it is attributed to other factors which could have influence over the Gross Domestic Product (GDP) that are not included in the model. It can be further supported by the adjusted  $R^2$ .

**F-statistics:** In explaining the individual significance of the variables with 20 observations with 16 degrees of freedom. As it can be seen from the results obtained they computed f-statistics as 326.5817 which exceeds the value from the table (3.24) at 5% level of significance, then we conclude that the individual variables as statistically significant. Hence, the joint influence of contribution of road transport to Gross Domestic Product (GDP), the length of federal roads and premium motor spirit consumption have a positive impact on the economic growth of Nigeria.

**Durbin-Watson:** To determine whether there is the existence of autocorrelation in the model from the results obtained. Durbin-Watson statistics has a value of 2.376088. According to the rule of thumb, since our result obtained is 2, then we accept the null hypotheses and reject the alternative hypotheses; no autocorrelation within the model.

From the above results, it can be observed that there is consistency in all the variables used in the model as expected.

In the coefficient of determination, it can be seen that contribution of road transport to Gross Domestic Product (GDP) showed positive relationship which proofs consistency as expected. The length of federal roads also contributes to Gross Domestic Product (GDP) as expected from the model. Furthermore, premium motor spirit consumption that reflected negatively to the Gross Domestic Product (GDP) also has consistency as expected.

According to (Nnaji Oprah, 2013) road transport has a positive relationship with Gross Domestic Product (GDP).

In the findings of (O.U Alex et al.; 2015), both government and private sector have an important role to play in ensuring that road transport infrastructures should be fully developed.

The government should regulate the consumption of premium motor spirit in order to minimize spending by households.

The government should also provide efficient public transport services at a cheaper rate in to discourage the use of private vehicles by households

## 5. Conclusion and Recommendations:

This research has specified and estimated a model on the empirical evaluation of road transport on Nigeria's economic growth, using time series analysis between the periods of 1995-2014.

The model specifically examines the impact of road transport on economic growth of Nigeria. The model used Gross Domestic Product (GDP) as the dependent variable while Contribution of Road Transport (CRT) to GDP, Length of Federal Roads (LR) and Premium Motor Spirit consumption (PMS) were the independent variables.

The result obtained shows that contribution of road transport to total Gross Domestic Product (GDP) has a positive impact on the growth of Nigerian economy. Furthermore, an increase in the length of the federal road also has a positive impact on the Nigerian economy. However, premium motor spirit consumption has a negative impact on the Gross Domestic Product (GDP).

Ordinary Least Square (OLS) method was adopted in estimating the model and as such E-Views econometrics software was used for regression.

In a nutshell, it was found that 98% of the total variation in the Gross Domestic Product (GDP) is explained by the contribution of road transport to the Gross Domestic Product (GDP), the length of federal roads and premium motor spirit consumption. It can be concluded that our model has a very good fit; only 2% is left unexplained, and as such, it is attributed to other factors which could have influence over the Gross Domestic Product (GDP) that are not included in the model.

This study examined the relationship between road transport and Gross Domestic Product (GDP) in Nigeria. It can be observed from this research that government has tried its best possible ways to increase the welfare of citizens through the construction of more motorable roads and in returning such efforts translated into positive economic growth in the country. One of the primary contributions of the road transport sub-sector to Nigerian economic growth is that it links various government and private infrastructures across the country. The study, therefore, concludes that road transport has a positive effect on the distribution amenities across cities and rural areas and as such, it has the potential of reducing hardships because facilities will be made closer to people constructing more roads across the country (Magaji, 2010).

Following the result of this research, I would like to outline the following the suggestion to policy makers of Nigeria.

- i) The government should ensure proper maintenance and execution of road construction in order to ensure efficient and effective road transport system.
- ii) The government should allocate a larger share of the annual budget so that more roads can be constructed from different parts of the country so that road transport related hardships may be eased.
- iii) In addendum, the government should encourage saving habit so that vehicle users may be able to save a



reasonable amount of their income rather than consumed by purchasing premium motor spirit.

iv) There should be continuity of federal road construction no matter the cost involved in implementing such projects; this is attributed subsequent change of government which draws back the progress of road construction in Nigeria.

#### Corresponding Author:

Gylych Jelilov, Ph.D.

Department of Economics, Nile University of Nigeria,  
Abuja, Nigeria.

E-mail: [jelilov@nileuniversity.edu.ng](mailto:jelilov@nileuniversity.edu.ng)

#### References:

1. Adeyemi. (2001). *Moving Nigeria Forward: The Development planning Approach Ibadan*. Ibadan: University of Ibadan press.
2. Akuchukwu, N. (2009). THE IMPACT OF TRANSPORTATION ON THE NIGERIAN ECONOMY. *International journal of research and development*, 18.
3. Aschauer, D. (1990). 'Highway Capacity and Economic Growth', Economic Perspectives. *Journal of Monetary Economics*, 24.
4. Aworemi, J. R., Salami, A. O., Adewoye, J. O., & Ilori, M. O. (2008, April). The impact of Socioeconomic characteristics of formal and informal public transport demands in Kwara state. Nigeria, *African Journal of Business Management*, 2, 73-75.
5. Barro. (1990). Government Spending in a Simple Model of Endogenous Growth. *Journal of political economy*, 26 to 103.
6. Devarajan, S., S. Vinaya and Z. Heng-fu (1996) The Composition of Public Expenditure and Economic Growth. *Journal of Monetary Economics* 37, 313-344.
7. Dodgson, J. (1974). Motorway investment, industrial transport costs, and sub-regional growth. *Journal of transport economics and Policy*, 8, 75-91.
8. Faridi, m. z. (2011). Transportation, telecommunication and economic development in Pakistan. *International journal of research in business*, 45-52.
9. Filani, M.O (1993) "Transport and Rural Development in Nigeria" *Journal of Transport Geography* 1 (4), pp 248-254.
10. Ismihan, M.; K. Metin-Ozcan; and A. Tansel. 2005. "The Role of Macroeconomic Instability in Public and Private Capital Accumulation and Growth: The Case of Turkey 1963-1999." *Applied Economics* 37, no. 2: 239-251.
11. Lantana, S. A. (2015). The impact of road transportation infrastructure on tourism. *Pearl Journals Management, Social Science, and Humanities*, 48-55.
12. Lius Serven, C. C. (2008). Infrastructure and economic development in Sub-Saharan Africa. *Development research group*, 1-5.
13. Magaji, A. A. (2010). Rural Transportation and the Distribution of Public Facilities in Nigeria: a case study of Edu LGA of Kwara state. *Journal of Human Ecology*, 171-179.
14. McMillan, W. H., Hall, D. R. H., Evans, P. H., & Day, A. M. (1993). Twinning in beef cows: preliminary results from embryo transfer studies. In *Proceedings-New Zealand Society Of Animal Production* (Vol. 53, Pp. 263-263). New Zealand Society Of Animal Prod Publ.
15. Nnoji. (2002). *Changing the History and Structure of Nigerian Economy*. Abuja: Central Bank of Nigeria.
16. Ogunsaya, A. (1987). Rural accessibility problem and Human Resource Management. *Journal of rural studies*, 31-42.
17. Olomola Philip Akanni(2003). Oil Wealth; Meat in Norway, Poison in Nigeria: An Analysis of Human Capital as a Transmission Channel of Resource Curse. *Journal of World Economic Research*. Vol. 2, No. 3, 2003, pp. 39-44.
18. Oluwalaiye, N. a. (2012). government spending on road infrastructure and its impact on the growth of the Nigerian economy. *International journal of management business studies*, 24.
19. Orakwue, u. j. (2015). effect of road transport in agriculture productivity. *International journal of applied sciences and engineering*, 1.
20. Smith, T. a. (2004). *economic development*. new york pearson.
21. Tunde, a. a. (2012). the impact of road transport on agriculture development. *Ethiopian journal of environmental studies and management in Nigeria*, 233.
22. Wyatt. (1997). The Development of a GIS-Based Property Information for Real. *International Journal of Information Science*, 435-450.

Received June 19, 2017; revised June 29, 2017; accepted August 10, 2017; published online September 01, 2017.