THE IMPACT OF ZARIA-KWANAN DANGORA EXPRESS ROAD ON SETTLEMENT GROWTH

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Abstract
Road connects geographic locations and facilitates movement of people goods and services. This research is aimed at analyzing the impact of road on settlement growth. Primary and secondary data sources were used to collect the required data for the study. Questionnaires and interview were the primary source of data used and stratified sampling technique was the method applied to get the sampled population interviewed. 150 questionnaires were administered to people of Dogarawa, MarabanGwanda, TashanYa’u, Marke, TashanYari, Wambai and KwananDangora. Simple descriptive technique using tables was used to present the result and the result revealed that there is increased in socioeconomic activities at the seven settlements as a result of construction of Zaria-Kano express road which the study area falls within. It was recommended that state and local governments should endeavor to upgrade certain facilities where they are not to standard and provide where they are lacking. Communal effort to complement government effort was also recommended.

Keywords: Express Road, Growth, Impact, Settlement, Zaria to KwananDangora
Road is a network of routes or linkages connecting geographic locations and facilitate the transport and movement of people, goods, and services and creating welfare. Road networks played a crucial role in socio-economic development, enabling relatively fast individual transportation for the masses and all users (Awuapila, 1998; Rodrique and Notteboom, 2013).

Animals and bush truck were used before the arrival of colonial administration in Nigeria. Road was further developed to primarily facilitate the collection and transfer of cash crops and other material resources from the field to the collection deport (David and James, 1979; Ango, 2004).

According to historical event in parts of Nigeria I, road development in Nigeria started in the early 1900’s when the first main road way from the rail-head at Ojoo to Ibadan in Oyo State was built. Ever since, there have been extensions of high class and motorable road to various parts of the country, many of which serve as “Feeder” to the railway. Today, there is practically no part of the country whether, rural or remote that is not linked directly or indirectly with the major towns, cities or parts by roads.

Kwabena (2005) rightly observed that, the development of road transport in the early period was geared toward facilitating the evaluation of cash crops and mineral from the field to the nearby railway station for export. Subsequently the road continued to link up the urban centres to the periphery.

The 19th century has been an important period of road evaluation in Nigeria because the pace in road construction and transportation modes receives more attention than any means of transportation. This partly explains why the federal and state governments allocate between 20-25% of the total planned expenditure in all previous developmental plans to road transport. The federal government had backed up huge allocation of financial resources to road building by setting up Directorate for Food, Road and Rural Infrastructure (D.F.R.R.I) and Petroleum (special) Trust Fund (P.T.F) to construct both rural and urban road and rehabilitate the existing one. Some reasons for this development include the population increase, increase in trade, utilization of infrastructure and increased volume of movement. Road is an important feature of development. The flow of people, goods, services and ideas brings about change in the economic and structural development. Where road is available; regional, capital and district centres are more accessible and the provision of social services becomes less expensive (Rady, 1977).

According to importance, modes and choice of transport mode, road transportation involves all form of vehicles which uses the roads such as bicycles, motorcycles, cars, buses, coaches, lorries and trailers. The development of road transportation in Nigeria started conversion of some of the existing bush to motorable routes. This was done particularly to link commercial hinterland with the railway for the evaluation of local product.

Active co-ordinate road development programme began in earnest in 1925 with the setting of the “Road Board” and later changed to “Communication Board”. Nigeria today has three trucks of roads (A, B and C). Truck “A” roads are constructed and maintained by the Federal Government. Truck “B” roads are constructed and maintained
The Impact of …

by the State Government and Truck “C” roads are constructed and maintained by the Local Government Council. The roads do not only make our personal movement easier, but also make possible the transportation of goods especially between the North and South (Igbudu, Oke, Gambo, Umoneli, Inuwa, Uba, Nuhu, Daniel and Yakubu, 2006).

Zaria-KwananDangora express road is a Federal Government truck “A” road, found along Kaduna-Kano express road, which starts from Zaria in Kaduna State to KwananDangora in Kano state. The construction of the road was awarded for dualisation on the 29th December, 1986 but the actual dualisation work began in September 1987 by Stirling Civil Engineering Company. The express road was supposed to have been completed and put into full use by the middle of 1989, but some problems delayed the completion of the road until late 1990, and it was officially commissioned on 6th March, 1991. The Zaria-KwananDangora express road is one of the first of its kinds in the northern part of the country that linked two states, that is, Kaduna and Kano. Since the dualisation of Kaduna-Kano road in 1991, there is no doubt that it has affected the people and their environment in one way of the other. This study attempts to determine the impacts of the dualized road on the growth of some settlement along the road.

The improvement of road transport has often been recommended as a major way of tracking under development because it is a necessary ingredient in nearly every aspect of development. As a result of this, successive governments had invested heavily be it in rural or urban area to improve connectivity and accessibility. The dualisation of Kaduna-Kano express road has its own merits and demerits; but more of the merits because it has led to increase in economic activities, easy provision of infrastructure, increase in agricultural output and growth of settlement which is the main thrust of the research. There was an effort to find the impacts of the dualized road along Zaria-Kaduna axis, but no effort was made to find the impacts of the dualized road from Zaria-KwananDangora hence this forms the reason for this research.

Research Hypothesis:
H₀: there is no significant relationship between settlement growth and construction of road
H₁: there is significant relationship between settlement growth and construction of road

Justification of the Research
This study will assist government and policy makers to understand the extent of contributions made by the road from when it was built to date. It will also determine what the settlements along the route require for possible provision or upgrade.

The Study Area
The study area is located in Zaria along Zaria – Kano express way between latitude 11°08’N – 12°31’N and longitude 7°07’E – 8°32’E (Mortimore, 1970). It is situated in Kaduna and Kano States of Nigeria and it has an estimated distance of 70 kilometers. Figure 1.
Adapted from google earth.

**Economic Activities**

The main economic activity in the area is agriculture and most of the farmers are peasant farmers operating at small scale both for subsistence and commercial purposes. Application of implements such as fertilizers, hoe and animal harrowing is common practice. On a whole, the males take up the commercial aspects of growing cash crops and food crops such as cassava, maize, soya beans, yam and millet. Sorghum and vegetables are grown mainly for domestic uses. Cash crops serve as a source of income to the farmers and means for improving standard of living in the area. In addition, quite a considerable proportion of the population is involved in petty trading of various items. Most of these items are gotten from the large commercial towns like Kaduna, Zaria and...
Kano. The farm products are constantly taken to the periodic markets. The women extract groundnut oil using local methods for sale while the Fulani’s extract milk from cows for sale within the neighbourhood and at the nearby market. Trading in crafts and tailoring are some economic activities engaged in by the people of the area. Livestock keeping is relatively lesser within the area, either for local consumption or for trade.

Apart from the community and government health centres, there are also individual health chemists, patient medicine stores, local herbs centres to augment the effort of the government. Basic infrastructural facilities are not left out in the settlement as some are connected with electricity, boreholes to portable drinking water. The introduction of mobile cell network to facilitate the means of communication in the settlements has led to buying of cell phones by the people for effective communication (brittanica, undated; nigeriagalleria, undated; KADDCIMA, 2014).

Climate

There are two major seasons in the area which is the dry season and the rainy (wet) season. The wet season is usually from April through October with great variation as you move northwards. On the average the area enjoys a rainy season of 5 months and about 1000mm annual rainfall. However, the temperature is high in summer between $80^0 - 95^0F$ $(27^0C - 35^0C)$ and low in winter about $50^0 - 60^0F$ $(10^0C - 16^0C)$. The mean annual temperature is about $57^0 – 50^0F$ $(14^0C - 10^0C)$. The harmattan is cold, dry and with dusty wind which blows from December to early April. The climate condition greatly influences the activities of the people who are predominantly farmers. The prevailing vegetation of tall grass and big trees are of economic importance during both the wet and the dry season. Rainfall is usually torrential. Air temperature is high in most part of the year with the mean monthly rising from January at minimum of $44^0F$ $(7^0C)$ and attaining maximum in April at an average of $67^0F$ $(19^0C)$, April is the hottest month and August the month of the mildest climate. The relative humidity drops from 85% in August to an average of 60% in October. It goes below 20% around December and January (Ologie, 2007).

Vegetation

Most of the species of plant in the area lasts for a short period of time in nature; notable among these species are the grasses and the sproulus pyramid which becomes the dominant on the land. Herbaceous flowers develop with pioneer communities of grass like BrachereieStrigmetiseteCileur and many herbs which over the years are gradually invaded by perennial. In the valley, there are several grass communities in which HyparrhemsRufe and AridropogenConcleulatus may be dominant depending on the depth of the water table. Although repeated burning and cutting of grasses have reduced the above cover to an open 2.3m tall shrub savanna. Some hundred trees and shrub have been identified in prominent. The grass cover consists primarily of up to 1.5m tall. Lack of thick vegetation cover in the area and occasional intensive rainfall has given way to surface erosion which is the most contributing factor to the formation of mesas and other erosion features common in the study area (Akintola, 2011).
Academic Excellence

Methodology

Several methods were adopted to ensure that adequate and accurate data were collected which include both primary and secondary data. A general survey of the area was undertaken to observe and study the physical environment. The data used for the study were information on separate characteristics of settlements, nature of jobs before the dualisation of road and after dualisation, the facilities in place before the dualisation of the road and after among others. For primary data, questionnaires were administered to 150 respondents in the settlements along Zaria to KwananDangora express road. Dogarawa (Zaria) and KwananDangora have the bigger settlements. Other sub-settlements like MarabanGwanda, TashanYa’u, Marke, TashanYari and Wambai, were also administered with questionnaires based on their learned population.

Sample Size and Sampling Techniques

<table>
<thead>
<tr>
<th>Settlement</th>
<th>Number</th>
<th>percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dogarawa (Zaria)</td>
<td>40</td>
<td>26</td>
</tr>
<tr>
<td>MarabanGwanda</td>
<td>15</td>
<td>10</td>
</tr>
<tr>
<td>TashanYau</td>
<td>10</td>
<td>6.7</td>
</tr>
<tr>
<td>Marke</td>
<td>10</td>
<td>6.7</td>
</tr>
<tr>
<td>TashanYari</td>
<td>20</td>
<td>13.3</td>
</tr>
<tr>
<td>Wambai</td>
<td>15</td>
<td>13.3</td>
</tr>
<tr>
<td>KwananDangora</td>
<td>40</td>
<td>26</td>
</tr>
</tbody>
</table>

Source: (Field work, 2017)

Questionnaires were distributed in accordance with the population of each settlement. KwananDangora = 40 representing a population > 4000, Wambai = 15 representing > 1500, TashanYari = 20 representing > 2000 Marke = 10 representing > 1000 TashanYau = 10 representing > 1000 MarabanGwanda = 15 representing > 1500 and Dogarawa = 40 representing > 4000 population which brings the total of 150 questionnaires. Stratified technique was used for the distribution or administration of the questionnaires from Dogarawa to KwananDangora. Stratified sampling is made up of subset of known size. The subsets made up of different proportion of the total, and the sampling technique was used to ensure that result is proportional and representation of the whole. The number of household in five out of seven settlements is not available with National Population Commission, due to this constrain the number of household was collected from village head (Selen and Gonzalez, 2013). The numbers of household as obtained from village heads were used. While there is no clear defined rule for sample size (Baumi, 2000; Shiner, 2012), sampling in qualitative research usually relies on small numbers with the aim of studying an in-depth and detail (Miles and Huberman, 1994; Shiner, 2012) hence the adoption of 150 questionnaires.
Data Analysis
The data was presented in a tabular form in such a way that it would be simple to understand at a glance in the work, the researchers used tables and simple percentage method to analyze the information collected by the way of questionnaire into data that would be useful to enable the researchers draw some inference or make some conclusion on the problem under consideration.

Results and Discussion
Table 4.1: Infrastructural Facilities before Dualisation of Road

<table>
<thead>
<tr>
<th>S/No</th>
<th>Names of settlement</th>
<th>Primary School</th>
<th>Secondary School</th>
<th>Market</th>
<th>Electricity</th>
<th>Healthcare</th>
<th>Medicine Store</th>
<th>Borehole</th>
<th>Police Station</th>
<th>Motor Park</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Dogarawa</td>
<td>√</td>
<td></td>
<td>√</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>2</td>
<td>MarabanGwanda</td>
<td>√</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>TashanYau</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>4</td>
<td>Marke</td>
<td></td>
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<tr>
<td>5</td>
<td>TashanYari</td>
<td>√</td>
<td>√</td>
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<td></td>
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<tr>
<td>6</td>
<td>Wanbai</td>
<td>√</td>
<td>√</td>
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<tr>
<td>7</td>
<td>KwananDangora</td>
<td>√</td>
<td>√</td>
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</tbody>
</table>

Source: (Authors Analysis, 2017)

Table 4.2: Infrastructural Facilities after Dualisation of Road

<table>
<thead>
<tr>
<th>S/No</th>
<th>Names of settlement</th>
<th>Primary School</th>
<th>Secondary School</th>
<th>Market</th>
<th>Electricity</th>
<th>Healthcare</th>
<th>Medicine Store</th>
<th>Borehole</th>
<th>Police Station</th>
<th>Motor Park</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Dogarawa</td>
<td>√</td>
<td>√</td>
<td>√</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>2</td>
<td>MarabanGwanda</td>
<td>√</td>
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<td>√</td>
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<tr>
<td>3</td>
<td>TashanYau</td>
<td></td>
<td>√</td>
<td>√</td>
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</tr>
<tr>
<td>4</td>
<td>Marke</td>
<td></td>
<td>√</td>
<td>√</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>5</td>
<td>TashanYari</td>
<td>√</td>
<td>√</td>
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<tr>
<td>6</td>
<td>Wanbai</td>
<td>√</td>
<td>√</td>
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</tr>
<tr>
<td>7</td>
<td>KwananDangora</td>
<td>√</td>
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</tbody>
</table>

Source: (Authors Analysis, 2017)

From table 4.1 and 4.2, it can be seen that all the seven settlements got additional infrastructure and facilities after the dualisation of the road. For instance, Dogarawa had only primary school, electricity and borehole, but today Dogarawa got the addition of market, healthcare, medicine stores, secondary schools and others. Marabangwanda had only primary school and motor park, but after the dualisation of the road, police station,
borehole and medicine store have been added. TashanYau had nothing at all, but today, they have market, electricity, health care facility, medicine store and market. Marke had only a primary school, but today they have secondary school, electricity, health care facility, medicine store and borehole. The primary school, healthcare facility and medicine which Tashanyari had not, have gotten them now. This shows a dramatic improvement in the settlements partly due to the dualisation of Zaria-Kwanandangora road.

**Conclusion**
Road transport has often been a major way of tracking under development because it is a necessary ingredient in nearly every aspect of development. Zaria to KwananDangora express road is a Federal Government Truck “A” road found along Kaduna to Kano express road. The dualisation of the road has helped the people living along the road immensely in their socio-economic activities. Prior to the construction of the road, people find it difficult to transport their goods to the main road. This research work can be concluded by saying the construction and maintenance of the road is one of the best transportation decisions made in this part of the country. Therefore, null hypothesis is rejected and alternative hypothesis is accepted.

**Recommendations**
From the above analysis, the government should endeavor to establish or make available infrastructural facilities that was lacking in place like Dogarawa which lacks police station and Motor Park, MarabanGwanda which lacks a secondary school, market and healthcare centre, TashanYau which lacks both primary and secondary school, including police station. Markewhich lacks market, police station and Motor Park.TashanYari which lacks secondary school and lastly Wambailacks a secondary school and motor park. Community should also contribute to help complement the government effort.

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