Development of Transport Infrastructure, on Public Private Partnership [PPP], for Accessibility to Health Care System in a Developing Country. Nigeria

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1. Introduction

- **Transport infrastructure** plays very important roles in the social and economic life of a country.
- **Roadways, Railways, Waterways and Airways** and their respective terminal facilities make easy access possible between spatially distributed activities.
- **Public-Private Partnership (PPP)** refers to form of cooperation between public authorities and the world of business.
- It ensures the funding, construction, renovation, management or maintenance of an infrastructure or the provision of a service.
- It is a partnership between the public and private sector for the purpose of delivering a project or service which was traditionally provided by the public sector.
PPP enables public services and infrastructure to be provided in the most economic and efficient manner by allowing each sector to do what it does best.

In Nigeria the Federal Government is responsible for the railways, seaports, maritime, inland waterways, federal highways and pipelines.

The State Governments have jurisdiction over intra-state roads, inter-state waterways and intercity railway services.
2. Problem Identification

- Health care delivery becomes difficult to provide when there is problem of transportation.
- This makes accessibility to health centers very difficult.
- Empirical issues for this study were recorded in Kauru LG area of Kaduna State in Northern Nigeria.
- The major challenge facing the provision of healthcare services in Kauru Local Government area is the problem of accessibility.
- This is due to poor road infrastructure, some of which are foot paths mostly created by the people of the community.
- The terrain is also bad, because of rivers, with no bridges and hills and rocks.
3. Objectives

- The World Health Organization recommended the walking radius for different categories of health care services as 0-10km for outreach services and 0-5 km for dispensaries, Maternity clinics and Health facilities.
- **WHO** also recommended that the standard for Primary health facilities population ratio is 1:10,000; and smaller health facilities population ratio is 1:5,000.
- Consequently, the **objectives** of this paper are:
  - Assess the accessibility and challenges to health care facilities using recommended standard set by World Health Organization, and,
  - Identify areas where accessibility is low and interventions may be required.
4. The Study Area

- Nigeria has a fairly extensive landscape with a lot of resource endowment spread over the country which places a demand for movement between places.
- This has significantly shaped the existing transport infrastructure as well as the development of transport itself.
- Road transport is by far the most important element in the country transportation network carrying about 95% of all the nations’ goods and passengers.
- This study is focused on Kauru Local Government area of Kaduna State. Kauru LGA is one of the 23 LGAs in Kaduna State located at Kauru West District. It has an area of 2,810 km² and a population of 170,008 as at the 2006 national population census.
- The main focus is on the Primary Health Care (PHC) and health centers (HC) in the 11 political ward within the local government.
Fig 1. Map of Nigeria

Fig 1 Map of Nigeria showing different States of the Federation
5. Methodology

- **Observatory Survey** was carried out at the various health facilities through the use of GPS to get the coordinates of the health facilities.
- **Data** of the different health facilities were collected from communities that fell within the catchment area of the hospitals and Health Centres.
- **Total population** of these communities were also taken.
- **Interviews** were conducted with various categories of Health Officials.
- **Published statistics** on Primary Health Centres were also used.
Methodology Cont’d

- Information on hospital facilities in the 11 Wards of the LGA was obtained and analyzed using GIS tool.
- This was used to analyze the different distance of the various Health centers within the ward.
- The wards that have problems based on Service Area and Walking Radius were identified.
- GIS tool was used to assess the walking distance in km from the health facilities to the settlement based on the WHO standard for walking distance which is 5km for fixed health facilities and 10 km for outreach services.
- The indices of accessibility to health care facilities were computed using the ratio of population to health Facilities in each ward using the standards set by WHO for developing countries.
6. Findings

- **The roads** and the terrain in most Wards are characterized by hills, rocks and rivers.
- The roads do not extend to all parts of the settlement
- Accessibility is limited.
- Canoes are used only in raining seasons
- Based on WHO standard for accessibility of 1: 10,000 for PHC’s of Hospitals and 1: 5,000 for HC’s and Dispensaries some wards within the local government fell short.
- Some of the wards do not have adequate road facilities
- Others are in poor conditions
- Motorized movement is difficult and expensive.
- Some the foot path were created by the people of the community.
Findings Cont’d

- **Fig 1** showed high concentration of health facilities around the center.
- Wards that are at the outer end of the map have serious deficiency of health care centers.
- With the 5km radius the community cannot access the health care services needed.
- Some of this Health centers are located at outreach post for immunization purposes.
- **Fig 2** showed a buffer corridor of 10km distance from the health facilities to the settlement.
- Location problems are reduced on the issue of 10km radius.
- However, the mobile outreach service have not been functioning.
- Lack of adequate manpower.
- Consequently, communities and settlements not under the 5km walking radius were left unattended to.
Fig 1 Map of Kauru LGA Showing, the location of Health Facilities 5km Buffer Zone
Fig 2 Map of Kauru LGA Showing, the location of Health Facilities 10km Buffer Zone
**Table 1.**
Total Population, Numbers of Primary Health Centers [PHC], HC, and General Hospitals per ward.

<table>
<thead>
<tr>
<th>Ward</th>
<th>Area (km²)</th>
<th>Population</th>
<th>Number of PHC</th>
<th>Number of HC</th>
<th>Number of General hospital</th>
</tr>
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<tbody>
<tr>
<td>Makami</td>
<td>284</td>
<td>63630</td>
<td>1</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>Kauru East</td>
<td>307</td>
<td>40173</td>
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<td>2</td>
<td>0</td>
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<tr>
<td>Kauru West</td>
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<td>72760</td>
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<td>0</td>
<td>1</td>
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<tr>
<td>Dawaki</td>
<td>428</td>
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<td>0</td>
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</tr>
<tr>
<td>Bital</td>
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<td>4</td>
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<tr>
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<td>3</td>
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<tr>
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<tr>
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<td>289</td>
<td>37179</td>
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</tbody>
</table>
An Inventory of the health care facilities provided by the local government shows that the LGAs have a ratio lesser than the WHO recommended standard,

Using service area and walking radius methods for assessment, six wards were found to fall

They are; Kauru east, Kauru west, Kamaru, Makami, Dawaki, some part of Kwassam and Badurum

Using the second indices of 10km, the whole LGA was covered except for a little part of Kauru west

However, accessibility problems made outreach services to remain inaccessible.

These are; nature of terrain, characterized by hills, mountains, rocks, rivers and poor road network.

Consequently, obtaining health care facilities remained difficult.
7. Recommendations

- There exist the need to provide accessibility to Health Care Centers
- Government have been found wanting in achieving this
- So PPP arrangement is recommended
- Mobile clinics should be used to cover some outreached areas,
- In planning for the distribution and allocation of health facilities it is important that a topological and population density survey is carried out to determine types of infrastructure to put in place
- A good communication system should be established
- Village Health Workers (VWH) can be engaged from within the most disadvantaged communities
- Get feedback from the communities on the health problems to assist planning for outreach centers.
8. Conclusions

- Accessibility has been found to be difficult even in areas that have the Health facilities.
- There is the need to consider the disadvantaged areas for future facilities location, Instead of concentrating attention only on a few political districts.
- Provision of the PPP arrangement will assist in improving the health and bring economic development to the area.
- Recommendations made in this paper will address challenges of accessibility to Primary Health Care Services in Developing Countries in general and Nigeria in particular.
References