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Road infrastructure and border trade in North-East Geopolitical Zone in Nigeria

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ABSTRACT
Road infrastructure is vital in facilitating mobility and trade in Nigeria and the Sub-Saharan Africa region. Drawbacks to beneficial trade in the region have been identified to inefficiencies of infrastructures in Africa from the large volume of literature, and the growing security threats resulting from the migrant population. Main challenge is how to improve the processes of moving goods and services across national boundaries, and henceforth, building and operating efficient border controls and customs regulations. To date, trade initiatives from institutions like Economic Community of West African States (ECOWAS) amongst others have been stagnant, and not able to address these challenges. However, improving border posts and customs procedures will not only reduce the cost and delays in border checks but increasing dynamism in the demographics and other business constraints. The main objective of this study is to identify specific factors that would affect the growth of trade in border towns, and the importance of transport in facilitating mobility to border locations. Findings from the estimated coefficients revealed that Government investment in infrastructure is not significant enough to change the upwards trend in prices ceteris paribus, thus cost of doing business creates price differentials between the border town and other cities in Nigeria. Significant factors predicted – road networks and the environment play a key role in travel conditions. As a result of this trend, it has increased border points of exit. Given the growing immigration problems, inefficient working of regional trade policies - ECOWAS and NEPAD amongst others, active labour force participation in border towns, and the improved conditions of roads, resulting into growth of illegal roads and increased conflict zones are experienced. It recommends a regional policy for a variety of economic activities – agriculture and small scale enterprises, amongst other things, as springboard for boosting growth of border trade in border towns.
Key Words: Border trade, road infrastructure, immigration, illegal routes.

1. INTRODUCTION

Trade has been recognized as an engine of growth. Up to the mid-1970s, trade theory was based on the concept of comparative advantage. According to Heckscher-Ohlin theory developed in the 1920s, countries engaged in trade with each other on the basis of advantages in the production of a commodity – either in terms of technology or factor endowments. With the progress of economies and dynamics of growth, scholars began to observe the relevance of comparative advantage in modern economies since trade takes place between country A and B with similar technologies and factor proportions.

Developments in new trade theories integrated specialization due to the difference in factor endowment, advantages in scale economics and the location of an industry in another region. It was not until the late 1970s, with the development of what is now known as the new trade (possibilities for harmonizing classical and new theories). Some of the notable contributions were the prominence of economic geography, which addresses questions about migration flows and location of firms across the geographic landscape. Important contributions in this field were the works of Krugman, commonly viewed as the starting point of new economic geography (Krugman, 1980). This sets a link between trade and mobility of both people and goods. According to Rodrigue, (2009), the potential set of intermediate locations, destination, is linked to geographical attributes - the main concern of geography of the transport system. Further developments in transport infrastructure system, which has grown to remarkable dimensions, is the debate on issues for a separate branch of transport infrastructure resulting from ordinary demand situations, since transport infrastructure is defined in the context of derived demand – that transport is needed for the services it helps to produce. The need to treat movement of goods to different locations may not necessarily arise from the same derived demand arguments, but from the point of logistics which relates to inventory managements. Rodrigue, (2006), argued that contemporary developments in freight distribution have experienced new dynamic environment in the global marketplace, for instance, logistics has been more than the structure of distribution due the various inventory levels but monitored by the demand levels overtime. Thus, movements are limited. These are new thoughts influencing decisions on whether to move products to place or not, buy or make decisions, based on myriad factors - most prominently, demand forecast

and seasonal factors which have implications of pricing and cost.

In Nigeria and most of Africa, advantages of an efficient Infrastructure are not only to promote economic growth, but can strengthen the need for gender empowerment and poverty reduction. Efficient transport system stimulates linkages with, and between different sectors, industries, and providing incentives for innovation and regional cooperation associated with trade flows. (Brooks, 2008). It is vital for achieving sub-Saharan region and business cooperation.

Intra-African trade remains very low, in addition to other factors – (rise in conflict areas and flashpoints in the region), has been responsible to this trend. Poor transport infrastructure and unreliable electricity supply are key constraints to Africa's ability to trade with itself – both affecting mobility and productivity has been bottlenecks to trade in the region. Africa has some of most difficult terrains in the world, with a total number of fifteen landlocked African countries, representing about one-third of Africa's population. (Ancharaz et al., 2011). These terrains had created difficulties in connectivity and accessibility, resulting to routes that are frequently used by smugglers that promotes the development of the underground economy. The sub-Saharan region routes that are accessible to immigrants over the years. These conditions have been some of the hindrances and challenges in facilitating regional trade by governments and various institutions – Economic Community of West African States (ECOWAS), New Partnership for Africa's Development (NEPAD) amongst others.

The objective of this paper is critically to review factors that affect road transport and the growth of a beneficial border trade in Nigeria, especially in border towns. This is important because Nigeria has been a trading hub in the region. Trends in the region show the occurrence of the so-called *home-market effect* (developed by Paul Krugman), which suggests a link between market size and exports – Nigeria is the largest market in the sub-region. Thus, business activities are centred around its borders with ECOWAS countries and in the sub-Saharan region.

The rest of the paper is outlined as follows: Section 2 is a survey of the literature on border trade, fiscal policy reviews, and geography of the transport system, transport modes, cross-border trade in Sub-Saharan Africa, review of theories and models of cross-border migrations and trade, review of immigration problems, road transport and accessibility issues, review of theories and models, Section 3, data and method, section 4 is results, section 5 is the conclusions and implications of the study.

We hope this study contributes to further evaluation of the following: (i). Immigration problems and rising underground economies, (ii). The rise in small arms availability in the sub-region that has been responsible to growth of conflicts zones in some countries like Nigeria, Niger, Mali, Central Africa Republic (CAR) and other countries in the sub-region, (iii). Lost of revenues to governments in the region. As a result and, (iv). The 'ungovernable' or policing of growth of border routes that had resulted to porous exit points (See map of Africa and numerous exit points – Appendix page), rise of religious intolerance in the countries as a result, and contact with hardcore religious extremists from the middle east and north Africa.

2.0 LITERATURE

Transport cost dictates cost of business and the induced demand effects. The concept of induced demand states that another action indirectly affects a particular condition. For instance, increases in road capacity attract new traffic. Lee and Camus, (1999) defined "induced" as refereeing to a movement along a travel demand curve, in which the price dimension includes travel time and another user cost. Both of these dimensions hinge on activity-based travel that defines cost. Hymel and Dender, (2010) on the other hand measured the induced demand effects in building new roads and or increase in highway capacity that attracts traffic.

Building new roads and or maintenance of existing roads has been the main cause of travel hurdle in Africa. There are however cases of congestions experienced all over the world; a global phenomenon resulting from an increase in the number of road users. Recently, however, the agency for road maintenance in Nigeria has attributed the rise in difficulties experienced by road users to increased bad segments on the roads. Cost of maintaining 34,120 km of federal roads has been an uphill task – sometimes it has been left to communities only to make emergency repairs (Confidential, 2012). Another consideration is the fact the most businesses depended on these roads for navigating long distances, for instance, the transportation of petroleum related products from the south-south region, goods from the Nigerian ports located in the south-south and south-west. These distance results to long travel time for destinations in the Northern part of Nigeria due to lack of maintenance on the roads. Depending on connectivity, most rural locations in Nigeria have to pay higher costs, sometimes about 150 percent increases in prices.

Road connectivity has resulted in price differentials. Taiwo et al. (2012), stated that bad roads in Cameroon make an increase in prices with about 15 percent of the cost in most parts of the country due to road conditions. This trend according to Taiwo is described as 'trucking roads to hell.' This condition is grave in the border towns due to transport cost and difficult terrains. Thus, border trade becomes beneficial only for the underground economy (black markets).

The concept of border trade depends on two important considerations:
(i). State power and the political economy and, (ii). Law and resource management: The working of (i) and (ii) have implications on the levels of net immigration of a country. State control and the political economy lays emphasis on sovereignty issues. Sovereignty of the state enables it to make policies that control access into the country, through immigration policies and required documentation for entry and residence. Law and resources managements, on the other hand, are issues related to emigration and immigration, rights of individual mobility, and access to resources of the country. Borders are impediments to free movements of goods and people within the region.

2.1 FISCAL POLICIES AND INFRASTRUCTURE SPENDING

Better roads provide the only scope for better access to markets, education, health care and social development for the majority of Africans (IRF, 2008). The actualization of this depended to a large extend on increase public spending on infrastructure; because better roads point to the need for sustainability, entrepreneurship growth and greater economic performance.

Fiscal policy and public investment in infrastructure are built around public finance theory that studies government's role in the provision of goods and services. Most literature discusses or examines the increasing government spending on varying determinants that affect trends in public expenditure. Even though, many such literatures examine the effects of Wagner's law to be the fact that it does not show a causal relationship when examining GDP growth with the public expenditure levels. Fernandez, (2009), argues that Wagner's laws did not measure that growth spurs public spending overtime; rather, it merely recognizes a positive statistical association between those two variables.
The arguments are whether various strategies for achieving growth agenda in Nigeria can be supported by a productive public sector investment, remains a critical challenge. Using data from Nigeria for government consumption and investment spending to 2006, Adesoye, 2010) found that there is a positive relationship with significant impacts on growth. It is also the same with the following findings in another environment by researchers like Barro, (1990), Devarajan et al., (1996), and Gemmell, (2012). All these findings are establishing a positive relationship between government expenditures, and growth that raises questions, or an enquiry into finding the determinants of government spending, especially in a typical developing country.

Public spending in most developing economies is for upgrading socioeconomic conditions, provision of necessary infrastructure and security needs. Socioeconomic needs cover aspects of health and productivity of the labour force, accessibility factors in the transportation systems, education, agriculture and access of the population to economic benefits which are vital to low-income households. Thus, the focus of government fiscal spending must be target upgrading human development index (HDI). In developing economies like Nigeria, government spending responds to various programmes aimed at empowering bulk of the rural population – NEEDs, Vision 2020 and the achievements of the Millennium Development Goals (MDGs), which have been the bedrock for major development potholes in these countries. Fan and Rao, (2003) opined that productive government expenditure have contributed to the establishment of a positive linkage between government expenditure, production growth and poverty reduction, which must be sustained if growth must be a cardinal point in the development agenda, which is most relevant in the general socioeconomic definition of the region's population.

There are evidences that a government budget deficit, which appears in the annual extra-budgetary allocation debates, gives rise to adverse growth. This phenomenon has been responsible to moderate investment in transport related infrastructure over the years, high deterioration in the stock of roads in Nigeria, low economic activities in rural Nigeria whose mainstay in agriculture. This has also affected agricultural productivity and access to markets (Fakayode, Omotesho, Tsoho and Ajayi, 2008).

2.2 GEOGRAPHY OF THE TRANSPORT SYSTEMS

The Production of goods and services organized by man is ultimately to reach the final consumer. It involves movements of these final products and commodities across space to reach the end users. According to Rodrigue, (2009), the potential set of immediate locations, destination, is linked to geographical attributes, these are central issues in the geography of the transport system. Changes across space have different geographical characteristics. Movements may involve travel by water transport, other rugged terrains, air and many others. These different areas with varying typology defines costs, travel time and require alternative forms of transport according to the degree of barriers they create. Topography may be a physical barrier which influence the structure of networks of roads, and change the cost structure and access. Other barriers may be the hydrography (Achieves et al., 2007). Climatic conditions that affect proper working of a transport mode – harmattan, Sahara desert climates forms peculiar features in part of Northern Nigeria (Iliya, 1999). Some of these barriers may be absolute barriers – a geographical structure that prevent smooth movement, these may be difficult terrains that are impossible to overcome. This affects the transportation system.

2.3 TRANSPORT MODES

The concept of transport modes is derived from the demand to access an economic activity. The concept is modeled from the derived demand - that the demand of any commodity or service is an essential input in the production of another commodity. Infrastructure may form one of the inputs required to achieve a level of productivity in the production space. There are three main categories of transport modes – land, includes roads, rail lines and pipelines. In Africa, natural means (on foot) is crucial. A cattle herdsman from the Masai tribe in Kenya travels hundreds of kilometres across borders from the South African plains for their animals. In Nigeria herdsmen travel to Cameroon, Central Africa, Mali, Niger and Chad, for instance, in search of good grassland for their animals still exist in many paths of Africa. Refugee problems in Africa travelled for days to 'safe heavens' on foot. Other forms of transport were not fully functional and used in Africa. Thus, there are limited types. In Nigeria and most of Africa road transport is popular. Air transport is not used by the majority of low-income population in Africa. For water forms of transport, raft and canoes are used in riverine communities, except for port cities where supplies/cargoes come into various countries. In Nigeria, there are three major ports all located in the southern part of Nigeria. Mobility across the border towns is by road. There are varying degrees of roads in Nigeria. In Most of the border area, roads are unpaved and go through different terrains. The topography in the most borders towns is mountainous, across rivers and landlocked. Mobility is limited to the use of motorcycles (see photo 1) and animals in the hinterlands. Therefore, access to most towns by road is frequently described as 'roads to hell.' Travel is also limited due to border patrols and road blocks in different locations. In most border towns, individual choice to any form of transport is limited – the use motorbikes, canoes (rafts), and on foot (Olvera, 2012). Other motorized vehicles include engine boats, most popular around the south-south region of Nigeria. A riverine community around Bakassi peninsula (a disputed area handed to Cameroon by the international court) is a border town in Cameroon, an attractive location for border trade. These types of locations are famous in petroleum products and other agricultural materials trade (Bonchuk, 2012). It is important to note that along this border lies a vital road corridor – **Calabar** (south-south) – Gboko (north central) - **Jalingo** (north east) – **Maiduguri** (north east)-**Ndjamena/Garoua** (Chad/Cameroon) links the Calabar port to Northern towns in Nigeria. There are more direct routes to N'Ndjamena border but the road in unpaved. There are many areas in Nigeria that facilitate border trade (see photo 1). Nigeria is an important trade link in the Sub-Saharan region because of its many advantages which includes large markets for electronics from Asia, three busy ports and more than five international airports that bring in goods from Asia, Europe and the Americas.

Nigeria has thus been the trading hub of Africa, especially the sub-Saharan countries. However, the benefits of trade seem to be overshadowed by the many troubles of the region – crisis-ridden, entry and destination for dangerous religious sects in most border towns; this seems to erode gains of border trade.

Photo 1. Typical (Bush) Trade route @ Madagali, Yola, Nigeria

Source: photo by Suleiman (author), 2011

2.4 CROSS–BORDER TRADE IN SUB-SAHARAN AFRICA

Borders of a country are administrative and legal concepts and have various definitions in the literature. The concept is linked to state sovereignty, political, legal, cultural, and geography. Rosenberg, (1994) defines borders as, *"Lines of political jurisdiction halt at fixed borders, while those of economic activity speed on through myriad of the international exchange without undermining the ramparts of formal sovereignty."* Both political and economic consideration is an important part in Rosenberg's definition, and for effective control of the economy's resources, (including its borders) it must have legal backing. The phenomenon of high movements of people and goods has resulted into an increase in economic activities. According to Addo, (2006), there are four to five million Economic Community of West African States (ECOWAS) citizens that move around this area every month. He (Addo) noted however that these actions are possible because of the porous borders. This influx is not only for trade purposes only, but such movements also endanger cross-border crime and the instability in the region. Monitoring illegal activities across the 1,479 border is an uphill task for governments, and also that many of the routes go through absolute barriers – through valleys, mountains, swimming and or using rafts across lakes and rivers makes it difficult for policing.

Open borders in the Sub-Saharan region encouraged flow of goods and people, and these actions have resulted to a number of impacts in the area. Addo, (196), opined that these trends have negative impacts on in the region. Gourley, (2012) also noted that it undermine good governance and security, rule of law, economic activities and growth and ultimately human rights violation by religious fundamentalist who had come into the border towns from various locations and or countries.

2.5 REVIEW OF THEORIES AND MODELS OF CROSS-BORDER MIGRATION AND TRADE

The study of border trade involves theories of the migration process, travel routes and different motivations for such behaviour/activity over a period. In Sub-Saharan region, borders are porous, this allows free entry. Large body of empirical studies suggests strongly that the trans-Saharan journey is made in several stages, and may take several days or months to arrive in a particular destination by migrants. According to Simmons, (1994), *buddle of rights* submissions, defines the rights and control of resources within the territory. Border controls give rights for countries to control movement of goods and people across the border. Due to various factors, countries in Sub-Sahara region cannot effectively control movements due to several reasons: (i). Lack of border controls and equipments, (ii). In most African settings, cultures and ethnicity is the same coupled with ethno religious consideration, makes border control ineffective, (iii). Most border crossings do not require documentation because these are illegal routes, (iv). Changes in the regions occur at favourite places for a specific activity, mostly agricultural activities (Metz, 2007)

Migration studies are concerned with movements across different countries. Net migration (emigration-

immigration) has been the main concern for countries around the Sub-Saharan region. Gains from economic activities in contemporary Africa seem to overshadow current rise in crisis and conflicts in the region and economic leakages. Economic leakages occur when all of the foreign currency earned through tourism does not remain within the host country, in this case the benefits of trading and incomes generated seems to be lost in the current instability and crisis in the locations. Most importantly is that most markets in the border towns is underground economies (black markets), with no revenues gain by governments. However, the most worrisome phenomenon is that net migration results into negative effects of the crisis which now has spillovers into Nigeria, Mali, Chad, Niger and countries within the region.

3.0 DATA AND METHOD

Data was used sourced from the north-eastern geopolitical zone, specifically from Adamawa, Gombe and parts of Borno states from July, 2013, which forms types of routes and core exit points in the region. Adamawa borders Cameroon republic with numerous border roads, and Gombe, which connects most commercial cities in the north. The two main locations are on the famous transportation corridor that runs from Lagos - within the international corridor – Lagos (South-West)-Maiduguri (North-East) – N'Djamena (Chad) is 1,816 kilometers. This gateway is important for both countries and sources of commerce. Fairly used cars from Cotonou are transported on this route. Data was essentially on the conditions of roads and travel behaviour of individuals to maximize the potentials in the border towns. We used regression model to estimate both the predictors and to observe the dependent variable, transport cost and cost of road transport.

We use the General model of the ordinary least square. The justification: we estimate a continuous variable; transport cost (measured in Nigerian currency, Naira) to estimate some of the constraints in accessibility in the region and this measure represents cost of doing business shown thus:

$$Y = \beta_1 + \beta_2 + \beta_2 \times_2 + \beta_3 \times_3 + \ldots\ldots\ldots + \beta_K \times_k + \in \qquad (1)$$

y, is the dependent variable, in this case cost of doing business which is related to explanatory variables $\times_2$, $\times_3 \ldots \times_k$ and the $\beta_2, \beta_3 \ldots \beta_k$ are the unknown coefficnets corresponding to the explainatory variables, with β_1 as the intercept. $\in$ is the random error term. This helps us to develop a model for assessing the extend of effects of the explanatory variable on cost of doing business in Nigeria.

We formulate a simple equation model thus:

$$Y=\beta_0 + \beta_1 PI + \beta_2 RM + \beta_3 RC + \beta_4 EN + \in \qquad (2)$$

Where: PI = public investment in roads, RM= road maintenance, RC= road connectivity and EN= Environment are the predictors. We used Cost of doing business, Dependant Variable (DV) was to determine the easiness or otherwise of the transaction cost. Road conditions inhibit trade and increase in border roads, apart from other restrictions, for instance, custom requirements/regulations and other motives for entry, for instance, religious motives. The main aim to establish the constraints to travel plans to desired economic activity, fishing and farming around the Lake Chad, mining activities around the Sahel region, and other self-employed activities in Nigerian borders that promote trade. Recently, the growth in conflicts in Nigeria, Libya, and Mali. has had spillover effects in the area to a dangerous trade in arms (Akinyemi, 2013).[1]

3.1 Model fit and other information on Data.

From information table 1.1 shows that the independent variables are statistically significant and predict the dependent variable, F (4,607) = 4.64, P < .0011. The regression model is a good fit of the data – Cost of doing business (DV) and the 4 independent variables. The R^2, however may not be good since only 3 percent of the dependent variable was predicted. According Cohen (1988) criteria, defined the statistic power weak/small at 0.2, 0.13 moderate and 0.35 substantial. In a study of active transportation by Rosenberg et al. (2006), may due to cross-sectional results in data collection. In this study, data was collected in six locations in two states, which at this time was difficult to access active transport due to the level of insecurity in some location (all roads linking Gombe states via Adamawa to Borno that is linked by a vital supply road), and due to high-security alerts, a state of emergency was imposed by the national government for three Adamawa, Borno and Yobe.

[1] Media report of light arms in the border towns, ""How al-Qaeda, Boko Haram smuggle arms into Nigeria" - See more at: http://www.vanguardngr.com/2013/05, many such reports exist in the media in Nigeria.

Table 1.1: Model significance

Item	Present data fit
F (4, 607)	4.64
Prob > F	0.0011
Number of Observation	
612	
R^2	0.030

The locations examined have similar characteristics – culture, language, economic activity with same roads conditions. The only difference is that Adamawa has many border exit points, apart from Borno state in the same zone.

Table 2.1: Road conditions in North-East Geopolitical Zone.

(Regression results).

Variable	CDB_T1 (monthly transport)	p-value
PI_Investment	0.0192	0.621
	(0.0388)	
R_Maintainance	-0.138*	0.045
	(0.0686)	
RD_Connect	**0.507****	**0.001**
	(0.154)	
ENV_factors	**- 0.335****	**0.007**
	(0.124)	
Constant	8.964***	0.000
	(0.376)	
N	612	
R^2	3.0	

- *Standard error in parentheses*
- ** p<0.05, ** p<0.01, *** p<0.001*
- *Transport cost (dependant variable)- CBD_T1.*

4.0 RESULTS AND DISCUSSIONS

Public investment is important aspects that enhance productivity; this also includes roads; thus, an increase in public investment (new roads linking communities or markets) by $0. 2m (0.192) in the 2013 budget reduces the cost of doing business (CDB), which is a small increase considering the importance and the fact that 90% of all goods are transport by road in Nigeria, including border towns. This increase in public expenditure (0.192) is not significant and shows that such investment is not feasible to reduce cost of doing business in Nigeria, thus in goods transported to borders have high prices differentials between this location and other towns in Nigeria.

4.1 ROAD MAINTENANCE AND COST OF DOING BUSINESS

The World Bank reports, Africa needs $12 million spent on 'timely' road maintenance in the last decade (from 1994) could have saved $45 billion spent in reconstruction. Even though this report could have overtaken by new efforts, the 1994 has been a classic in issues of infrastructure and development in the global economy, and such maintenance disregard has been responsible to the road conditions in Nigeria. The results of the estimates on table 2.1 shows that a decrease/fall in (-0.138) road maintenance increases the cost of doing business by $14 of fuel (cost) use for vehicles, for commuters this is translated to a higher cost of transport price, ultimately increasing the cost of doing business. This has resulted to several footpaths in most border towns.

4.2-CONNECTING TRANSPORT ROUTES AND CORRIDORS IN NIGERIA

It has mentioned in this study that one of the principal corridors Lagos-Niger Corridor connects countries within the sub-region. It is thus important that the cost does not inhibit business profit. As a result, of costs, in terms of road conditions, security and other road characteristics in Nigeria increase in connectivity (0.507) is significant in reducing cost of doing business. A $5m increase in road connectivity (repairs of new roads, easy access) implies that the cost of doing business falls. This condition (new roads) has trade-off effects with increased road blocks, high corruptions by immigration officials and bush roads (facilitating the underground economy) has erase the benefits of a reduction in cost of doing business as result of high connectivity.

4.3 ENVIRONMENT FACTORS AND TRAVEL COST

The environment here refers to weather conditions and other physical conditions of the environment. Faye et al., (2004) argues that there are challenges facing developing countries, challenges of distances. The estimated coefficient of environment of this study shows (.-334) coefficient for environmental factors, implies that access is to location falls (decreases) by 33 kilometres leading to an increase in cost of doing business, translated to longer travel time and increased new bush routes by smugglers. A case in point is the transportation of second-hand cars from Cotonou, where smugglers devise many routes and methods to evade immigration officials, thus increasing the cost of these vehicles to Nigeria to locations in northern Nigeria.

5.0 CONCLUSION

Increase public investment (new road infrastructure), deterioration in road maintenance and increased worsening of the various environmental factors effects the conditions of roads. This had created an advantage for increased border routes for immigrant and the growth of trade in border towns. Border trade in Nigeria has undergone various trade regimes. The importance of border trade is to facilitate regional integration and as a means for supporting Africa's economic development. Changes in the border towns resulting from immigration problems have reduced the gains from net migration due to increasing crisis in the region. Africa's unique geographical characteristic makes regional integration even more urgent. Cross-border infrastructure such as roads and other means of transport is essential in the mobility of people, goods, and services. Such linkages expand market access, reduce economic distance, facilitate trade investment and labour mobility.

Results shows that two main estimates are significant (p-values) as shown on the Table 2.1: Road connectivity (.507) showing better connects for accessibility to locations, and the effects of the environment (-.335) a fall in accessibility due to environmental factors. The conclusions: better connects have been eroded by the effects of environmental factors defined in the geography and terrains around border locations. It creates conditions that encouraged smugglers routes, flow of harmful goods, unofficial/parallel foreign exchange markets and lack of personnel (immigration officials, police, and soldiers) to control numerous borders. The flow of official trade regime in border towns decreases as the growth of underground economy (black markets) rises overtime.

Core challenges are how to improve the process of moving goods and services across national boundaries, and henceforth, building and operating efficient border posts and custom systems. To date, few trade facilitation initiatives have successfully addressed theses challenges. Improving border posts and custom systems will not only reduce the cost and delays, both demand and supply side constraints, but poverty reduction. However, Africa's poor transport and communications infrastructure and unreliable electricity supply is responsible in raising business costs, undermine the competitiveness and the continent's ability to integrate regionally.

This study is important because it is a pointer to the fact that in many economies, models and theories have been successful in bringing about beneficial trade in several trade blocs of the world – efficient transport services have facilitated the growth in trade. This study, therefore, recommends an evolution of a strong regional trade regime that strengthens core values of Economic community of West African states (ECOWAS) and New Partnership for Africa's Development (NEPAD). Free movement of people and a single currency by African leaders is important in realizing a beneficial regional trade, which could be achieved through an efficient road infrastructure. Current situations of 'openness' has resulted into conflicts, arm trafficking in the sub-Saharan region and immigration problems have set-in drawbacks for achieving the goals of ECOWAS and other trade cooperation.

REFERENCES

Addo, P. (2011) "Cross-Border Criminal Activities in West Africa: Options for Effective Responses." Retrieved from dspace.cigilibrary.org

Adesoye A.B, M. O., Atanda Akinwande A. (2010) "Dynamic analysis of government spending and Economic growth in Nigeria." *Journal of Management and Society, 1*(2), 27-37.

Akinyemi, O. (2013) "Globalization and Nigeria Border Security: Issues and Challenges." *International Affairs and Global Strategy*, *11*, 1-7.

Ancharaz, V., Mbekeani, K., Brixiova, Z. (2011) "Impediments to Regional Trade Integration in Africa." *Africa Economic Brief (AFDB), 2*(11), 1- 8.

Barro, R. J., & Sala-i-Martin, X. (1990) "Economic growth and convergence across the United States" National Bureau of Economic Research.

Bonchuk, MS. O. (2012) "Cross-Border Trade: An Analysis of Trade and Market Integration along the Nigeria-Cameroon Borderlands." *Annals of Humanities and Development studies 2*(1), 1-17.

Brooks, D. (2008) "Regional Cooperation, Infrastructure, and Trade Costs in Asia." *ADBI Working Paper* 123. Tokyo: Asian Development Bank Institute

Cohen, J. (1988) "Statistical power analysis for the behavioural sciences." Routledge.

Confidential, E. (2012) "FERMA to Engage 10,000 Nigerians for Road Maintenance" Engr. Adeniji, *Economic Confidential, December, 2012,* pp. 1-5.

Devarajan, S., Swaroop, V., & Zou, H. (1996) "The composition of public expenditure and economic growth." *Journal of monetary economics, 37*(2), 313-344.

Fakayode, B. S., Omotesho, O., Tsoho, A. B., & Ajayi, P. D. (2008) "An Economic Survey of Rural Infrastructures and Agricultural Productivity Profiles in Nigeria." *European Journal of Social Sciences, 7*(2). 204-256

Fan, S., & Rao, N. (2003) "*Public spending in developing countries: trends, determination, and impact*: Environment and Production Technology Division." International Food Policy Research Institute.

Faye, M. L., McArthur, J. W., Sachs, J. D., & Snow, T. (2004) "The challenges facing landlocked developing countries." *Journal of Human Development*, *5*(1), 31-68.

Gemmell, N., Misch, F., & Moreno-Dodson, B. (2012) "Public Spending and Long-Run Growth in Practice: Concepts, Tools, and Evidence." *Is Fiscal Policy the Answer?: A Developing Country Perspective*, 69.

Gourley, S. M. (2012) "Linkages between Boko Haram and al Qaeda: A Potential Deadly Synergy." *Global Security Studies*, 1-14.

Hymel, K. M., Small, K. A., & Dender, K. V. (2010) "Induced demand and rebound effects in road transport." *Transportation Research Part B: Methodological,*

Iliya, M. A. (1999) "Income diversification in the semi-arid zone of Nigeria: a study of Gigane, Sokoto, north-west Nigeria." Retrieved from open access.leidenuniv.nl

IRF. (2008) "Building the better road." Special Bulletin for Africa, November, 2008 (International Road Federation), 1-20

Krugman, P. (1980) "Scale Economies, Product Differentiation, and the Pattern of Trade," American *Economic Review,* 70, 950-959.

Lee, D. B., Klein, L. A., & Camus, G. (1999) "Induced traffic and induced demand." *Transportation Research Record: Journal of the Transportation Research Board, 1659*(-1), 68-75. *44*(10), 1220-1241.

Metz, A. (2007) "The Cameroonian-Nigerian Border Conflict in the Lake Chad Region: Assessment of the Resource and Conflict Management Capacities of the Lake Chad Basin," Commission *Swiss Federal Institute of Technology, Professorship for Environmental Policy and Economics, Institute for Environmental Decision*, 1-19.

Olvera, L. D., Plat, D., Maïdadi, S., & Pochet, P. (2012) "Motorbike taxis in the" transport crisis" of West and Central African cities." *EchoGeo* (20).

Rawlings, J. O., Pantula, S. G., and Dickey, D. A. (1998) "*Applied Regression Analysis: A Research Tool*", Springer Texts in Statistics, Second Edition, New York: Springer-Verlag.

Rodrigue, J. (2006) "Challenging the derived transport-demand thesis: geographical issues in freight distribution." *Environment and Planning A, 38*(8), 1449.

Rodrigue, J. P. (2009) The geography of transport systems, London, Routledge.

Roitman, J. (2006) "The ethics of illegality in the Chad Basin." *Law and Disorder in the Post colony*, 247-272.

Rosenberg, J. (1994) "The Empire of Civil Society." London, Verso.

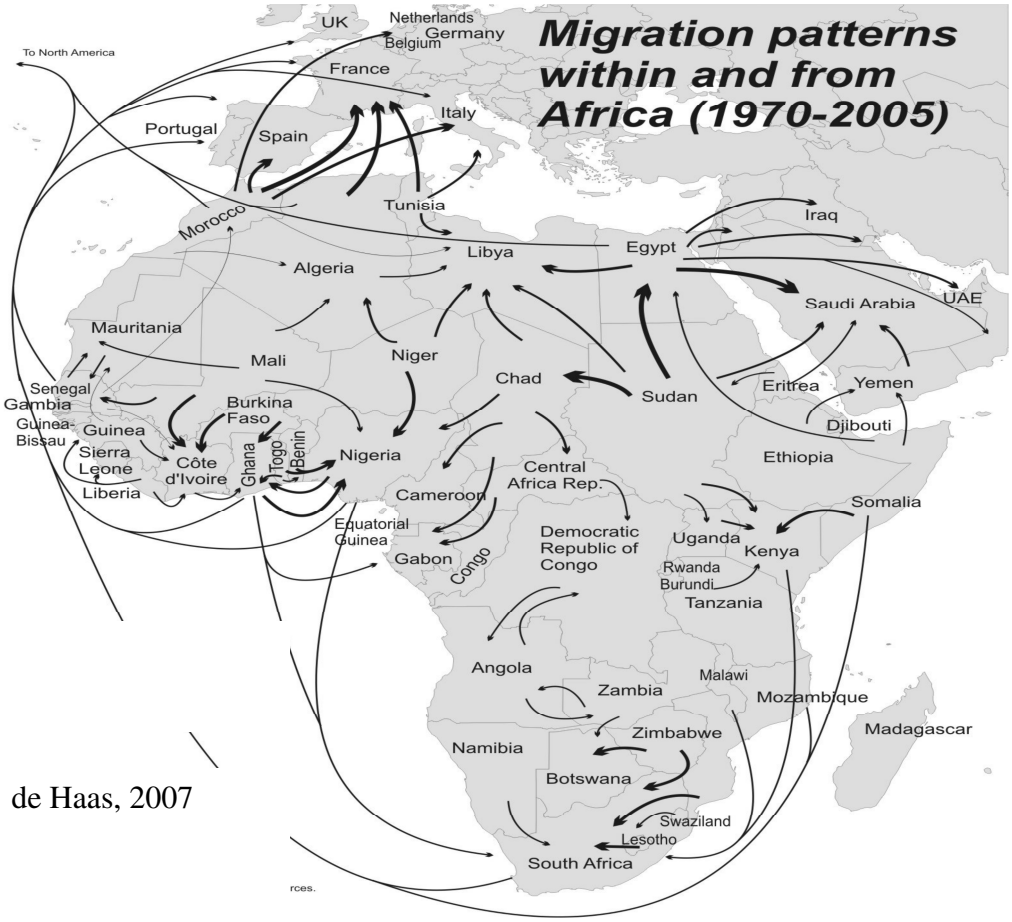
Rosenberg, D. E., Sallis, J. F., Conway, T. L., Cain, K. L., & McKenzie, T. L. (2006) "Active transportation to school over 2 years in relation to weight status and physical activity. *Obesity"*, *14*(10), 1771-1776

Simmons, A. J. (2001) "On the Territorial Rights of States," *Philosophical Issues* 11L'immigration Irregular Subsaharienne à Travers et Vers le Maroc. . ILO, Geneva.

Taiwo, O., Moyo, N., & Initiative, B. A. G. (2012) "Eliminating Barriers to Internal Commerce to Facilitate Intraregional Trade". *Accelerating Growth through Improved Intra-African Trade*, 8.

Yahaya Hashim, K. M. (1999) "Cross Border trade and the Parallel Currency Market: trade and Finance in the structural Adjustment programme". *Nordic African Institute Progamme, Reasch Report No.113*, 1-124.

Appendix 1.



Source: de Haas, 2007

Figure 1.1: Cross-border links in Africa.

Appendix II

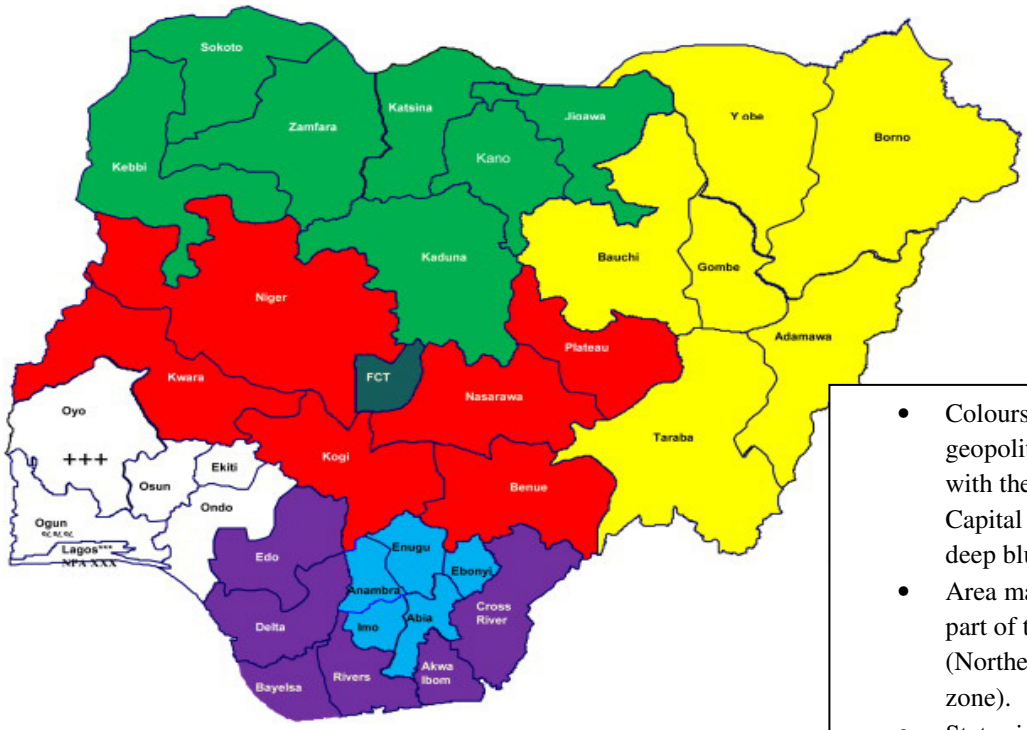


Figure 2.1. Geopolitical Map of Nigeria.

- Colours show the six (6) geopolitical zones of Nigeria with the insert of Federal Capital Territory (FCT) in deep blue
- Area marked in yellow is the part of the study area (Northeast geopolitical zone).
- States in the zone are, Adamawa, Bauchi, Borno Bauchi, Gombe,Taraba and Yobe.