

Case Report

Evaluating the role and impact of railway transport in the Nigerian economy, options and choices: Case of Nigerian Railway Corporation

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Received September, 2016; Accepted September, 2016.

Abstract

Efficient railway transport enhances the economic development of any country, in terms of the movement of people and goods from one destination to another. Nigeria is an oil producing country, yet the supply chain of the petroleum product distribution is poor, inefficient, and abysmal let alone effective. The distribution of petroleum products is done through the road haulage system which equally drives up the distribution cost as well as an increase in the pump price. Inefficient product distribution results in delays in the petroleum products reaching the filling stations quicker which sometimes lead to product shortages and results in fuel scarcity and fuel queues at filling stations. Nigerian Railway Corporation (NRC) was therefore established by the Act of 1955 (amended by 1990 Act) for the sole aim of moving of passengers and haulage of freight and given the monopoly power and exclusive right for this purpose. Although development and construction of the railway track started as far back as 1898 and over years, numerous amounts of money invested on the rail system in Nigeria have also seen little impact. NRC is currently saddled with the problem of dwindling revenue; operational costs are increasing, as is the mounting debt. There is demand for the services that is currently not satisfied, but due to limited operational capacity, the yearnings of the teeming population for efficient transport system are still not fulfilled let alone effective. The research methodology includes the use of primary data from a virtual survey, analysis of evidence from the empirical study as well as an analysis of secondary data obtained from various published research sources.

Key words: Economic impact, supply chain, Railway transport, Nigerian economy, Economic development.

INTRODUCTION

An efficient transport system, especially railway transport, plays a significant role in any economy through the movement of people and goods from one destination to the other safely. In essence, an effective and efficient transport system aids commerce and helps economic activities of any country. Rail transport therefore plays a significant role in commerce and economic activities of the Nigerian economy due to its ability to haul large volumes of cargo and carry large numbers of passengers at a very low cost.

Nigeria is endowed with a total land mass of 351,649 sq. miles (910,771 sq. km) with a total population of about 170 million (Sanusi, 2014). The movement of people and goods is currently done inefficiently through road transportation, but in contrast, efficient rail transport could provide an efficient distribution that is both cost effective and assists in achieving Nigeria's economic development initiatives. Jaekel, (1997b,) argues that "an efficient NRC will act as an aid to the development of other

sectors such as agriculture, mineral resources, tourism and manufacturing, through the effective transportation of people and goods throughout the country to and from the seaports, linking companies with the outside world".

Odeleye (2010), in concluding a research paper, noted that, "today, Nigeria's economy ultimately relies on road mode for sustenance of its economic activities." Ironically, the road mode is largely constrained due to its limited carrying capacity relative to rail transport. According to (Nworji and Oluwalaiye, 2012), the total collapse of the roadway infrastructure, due to the lack of infrastructure investment, poor maintenance and over use of the existing roads, will further restrain the transportation boost required for speedy economic growth. In order for Nigeria to join the league of world developed economies by 2020, as per its projected national plan, it requires a mode of transport, like rail, which not only has a

Table 1. Historical Phases of the Construction of the Railway System Network in Nigeria

No	Year	Section	Gauge Type	Distance
1.	1898 – 1901	Lagos – Ibadan	Narrow	193
2.	1901 – 1909	Ibadan – Jebba	Narrow	295
3.	1907 – 1911	Kano – Baro	Narrow	562
4.	1909 – 1915	Jebba – Minna	Narrow	255
5.	1914 – 1916	Port Harcourt – Enugu	Narrow	243
6.	1916 – 1924	Enugu – Markurdi	Narrow	220
7.	1922 – 1927	Kaduna – Kafancha	Narrow	179
8.	1922 – 1927	Kafancha – Bukuru	Narrow	101
9.	1958 – 1961	Bukuru – Bauchi	Narrow	238
10.	1961 – 1963	Bauchi – Gombe	Narrow	166
11.	1963 – 1964	Gombe – Maiguduri	Narrow	302
12.	1990 – 2003	Itakpe - Ajaokuta - Warri	Standard	287
13.	2011 - 2016	Port Harcourt – Onne (Under Construction)	Standard	330
14.	2011 – 2016	Kaduna – Abuja (Completed)	Standard	457
Total Distance (Kilometres)				3,828

Source: Nigerail magazine Jan-June (1987, p. 10) BPE Journal 2005, p. 35 & Authors' Survey (2016)

capacity advantage over other land modes, but also enjoys the advantages of energy efficiency as cost-effectiveness. Therefore, a rejuvenation of the existing railway structure and construction of a new rail network, will act as a spring board for sustainable economic development and growth in the country (Oni, 2010).

Historical Background and Construction of the Railway Transport Network

The railway in Nigeria was originally a government department in 1898 which later metamorphosed to NRC as created by the act of 1955 (amended by 1990 Act). NRC was therefore established to carry on its activities among others including the movement of passengers and haulage of freight in a way that offers full scale transportation services, ensure value for money, adhere to the corporate goals, meet the expectations of passengers, ensure safety of operation with maximum efficiency, meeting the social responsibility of the corporation in the manner that meets and satisfy the needs of the rail users, industry, the general public and other stakeholders (Adesanya, 2010).

The establishment of the corporation took place in October 1955, by an act of Parliament which also granted the corporation a monopoly power. In total, at the official inauguration, Nigeria had a 3505 kilometer narrow gauge single-track railway network system (Abubakar, 2006; Odeleye, 2010).

As discussed earlier, the perceived benefits of efficiency and a cheaper cost of transportation of farm produce to the European market acted as the motivator for early construction of the rail lines in Nigeria by the colonial administration. Construction of the railway lines started in 1892 (Table 1) and went on until 1965, however, this early construction was without foresight and consideration of the full potential social benefits of railway system to the community. Hence in expressing an opinion, the pursuit of cheaper and modest investments in rail transport could also mean that geographical terrain that was deemed too costly for

construction was avoided. This probably explains why deep cuttings, high embankments, long bridge spans, tunnels and viaducts which would have potentially increase the cost of construction were avoided. Foresight could have however dictated that the increased cost of construction could have also off-set the benefits of service efficiency, effectiveness and the connection of major towns and villages across Nigeria. The line, therefore, runs diagonally (Table 2), from South-West to North-East and from South-East to North-West with junctions in Kafanchan and Kaduna respectively (Jaekel, 1997b; Okanlawon, 2006).

The short-sighted construction created a rail system that was not favourable for the movement of traffic intended for internal east-west developments leaving vast areas of the country unconnected (Figure 1). These areas remained comparatively under-developed until the construction of roads and national highways was started after the country became independent in 1960. In addition, travel times were also elongated and travel speed was slowed to a maximum of 65km/h due to the steep curves, poor track equipment, sharp bends and the narrow gauge of the rail lines (Table 3). Although there is over 100,000km of national highways, there is a dire need for an extension of the present railway system, construction of new lines serving specific industrial project areas and better integration of the country by providing a cheaper means of transportation (Jaekel, 1997; Oni, 2010; Ademiluyi and Dina, 2011).

(Ademiluyi and Dina, 2011) observed that “despite all these inherent defects, the rail mode had, until the 1960s, enjoyed a real monopoly in the transport sector.” It was further noted that, by the middle of the 1970s, the quality of rail service began a fast decline. The apparent decline of the corporations’ services observed at the time still persists today as a result of inadequate funding and near neglect by successive administrations of the country (Ademiluyi and Dina, 2011). In addition, the intermittent government interventions have not helped the growth of the NRC. The respective government involvements have been mostly for political propaganda and usually a short-term measure for the new

Table 2. Distribution of the Railway Network in Nigeria

No	State	Capital	Kilometers
1	Abia	Umuahia	158
2	Adamawa	Yola	0
3	Akwa – Ibom	Uyo	57
4	Anambra	Awka	0
5	Bauchi	Bauchi	272
6	Bayelsa	Yenagoa	0
7	Benue	Makurdi	58
8	Borno	Maiduguri	201
9	Cross – River	Calabar	52
10	Delta	Asaba	0
11	Ebonyi	Abakaliki	33
12	Edo	Benin City	0
13	Ekiti	Ado – Ekiti	0
14	Enugu	Enugu	160
15	Gombe	Gombe	117
16	Imo	Owerri	35
17	Jigawa	Dutshe	137
18	Kaduna	Kaduna	533
19	Kano	Kano	140
20	Katsina	Katsina	64
21	Kebbi	Birni Kebbi	0
22	Kogi	Lokoja	0
23	Kwara	Ilorin	150
24	Lagos	Ikeja	33
25	Nasarawa	Lafia	104
26	Niger	Minna	532
27	Ogun	Abeokuta	193
28	Ondo	Akure	0
29	Osun	Osogbo	97
30	Oyo	Ibadan	64
31	Plateau	Jos	255
32	River	Port – Harcourt	37
33	Sokoto	Sokoto	0
34	Taraba	Jalingo	0
35	Yobe	Damaturu	22
36	Zamfara	Gusau	110
37	FCT	Abuja	214
Total			3828

Source: Nigerail Jan-June (1996, p. 11) BPE Journal 2005 p.36 & Authors' Survey (2014)

government to achieve acceptance. These have resulted in the present state of rail infrastructure deficit and poor performance of the NRC till date (Akwaru et al., 2014).

Distribution of the Railway Network between States of the Federation in Nigeria

According to Odeleye (2000), the administration of Nigeria at the time of independence from British rule was regional: The Northern, Eastern, and Western regions, all of which were autonomous. After the civil war which ended in 1969, in order to facilitate the reconstruction, reconciliation and development of the destruction that had taken place during the civil war, in 1970, the regional administrative system of the former colonial administrator was abolished with the introduction of the twelve States of the Federation, all in line with the provision of the first national development plan in Nigeria (Odeleye, 2000; Ademiluyi and Dina, 2011).

In 1976, at the beginning of the transition programme to the Second Republic, seven more states were created to reflect the stages of development and to enhance the phases of change in Nigeria. This was also in line with the objective of bringing the phase of development to the grassroots level, gaining closeness to

the rural dwellers in order to discourage rural urban migration, where the necessary amenities are lacking or inadequate (Okanlawon, 2006).

Odeleye (2000), noted that in 1986, just at the start of another transition programme to the Third Republic which was terminated without materializing in June 1993 by the then military head of state, six more states were created with the same objectives as set in the national development plans. And in 1995, prior to the start of another transition programme, five more states were created, also in accordance with the changes and diversity of the economic and political environment in Nigeria. To date the total number of states of the Federation in Nigeria stands at thirty-six plus the Federal Capital Territory, Abuja, the present seat of government. Despite all the divisions and the creation of more states, the railway network still did not reflect the federal government agenda (Odeleye, 2010). The distribution of the railway system network in Nigeria is shown in (Table 2).

Additionally, railway connectivity, and other forms of transportation such as land, air and sea, in all of the states of the Federation is not efficiently distributed to enhance the purported economic development agenda that drove the various state creations. As a result, large areas of the Federation are not



Figure 1. The Railway Network in Nigeria

Source: <http://www.nigeriaexport.com/news/02maptren.jpg>.

Table 3. Nigerian Railway Corporation Profile – 2016

Track	Single track, steel/timber, sleepers.
Gauge	1067mm or 3’6”, 3505 route km, 4332 track km.
Traction	Conversion of locomotive engines to diesel fuel occurred mid 1950’s and led to a complete withdrawal of steam locomotives in the early 1970s.
Maintenance	Nigerian Railway Corporation
Management	Nigerian Railway Corporation
Technical Support	China Civil Engineering and Construction Corporation (CCECC).

Source: NRC Journal (2013, p. 15), BPE Journal (2005, p. 40) and Authors’ Survey (2016)

connected or serviced by a railway network (Figure 1 and Table 2). For example, none of the Nigerian airports are currently connected by rail; sea ports have limited connections (Okanlawon, 2006; Adesanya, 2010; Odeleye, 2010).

The Current and Future Development of NRC

Jaekel (1997b) observed that “the opening of the bridges in Jebba and Markudi was a land-mark in linking the northern to the southern parts of the country. In the struggle for the country’s independence, Nigerian Trade Unions, led by the Nigerian Union of Railway Men (NUR), were a powerful influence, and the Imuodu-led general strike of 1945 was a significant event that gave rise to moves toward independence. The railway system had

proven to be a strong unifying factor long before the system of the road network was developed. NRC is now seen as an important provider of rail transport services to meet the political, cultural, social and economic needs of the people.”

In supporting Jaekel’s study, Gwilliam (1997), added that “Nigeria was currently passing through a critical period of national reconstruction of her political, economic and social factors. As part of this viable process of transformation, the Nigerian Railway is undergoing expansion and modernisation. The gauges are being expanded and new coaches acquired.” These efforts will enhance the developmental objectives of successive governments and play a significant role in achieving the success of the strategic developmental plans of the politicians.

Table 4. Government Investments and NRC Total Revenue

Year	Investment \$'000	Total Revenue \$'000	No of Passengers '000	Freight Hauled Tons	Regime
1983	32,000	67,969	13,012	1,619	Shagari
1988	88,000	8,726	3,629	294	Babaginda
1995	528,000	3,466	1,729	108	Abacha
2003	52,220	2,238	1,622	58	Obasanjo
2004	840,000	2,072	1,731	62	Obasanjo
2006	8,300,000	1,487	708	41	Obasanjo
2009	81,300	1,769	1,285	52	Yar'Adua
2012	1,490,000	5,912	4,155	182	Jonathan
2013	41,019,200	8,869	4,329	99	Jonathan
2014	25,100,000	10,461	18,178	962	Jonathan
2015	N/A	6,710	20,759	1,115	Jonathan

Source: NRC (2015), Authors' Survey (2016)

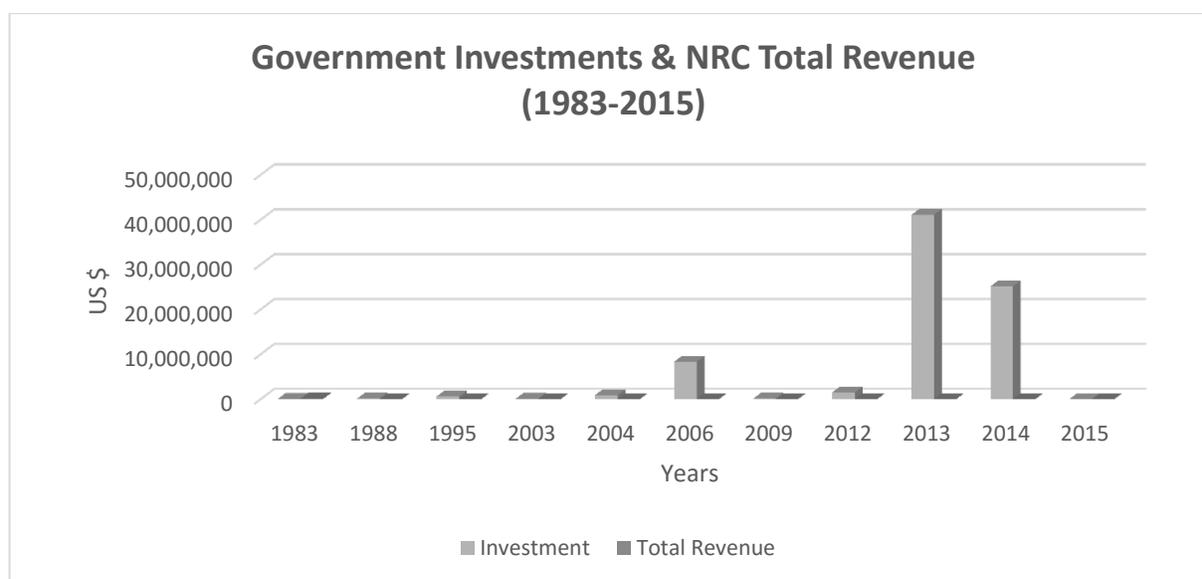


Figure 2. Government Investments and NRC Total Revenue
Source: NRC (2015) & Authors' Survey (2016)

Therefore, enhancing the sustainability of these efforts is part of the focus of this research.

Part of the government's current focus is to rehabilitate and improve the railway through the elimination of sharp curves, leveling of steep gradients and installing modern signaling equipment to improve train speed and track safety. It also includes the supply of locomotives, coaches, wagons and rail cars to increase operating capacity, effectiveness, efficiency, customer satisfaction and overall productivity. To enhance the safety of passengers and equipment and a faster train service, a contract for the supply and installation of a comprehensive microwave Digital Backbone Communication network was awarded and is under construction.

The NRC currently has single track, narrow gauge covering the majority of the rail network with very limited standard gauge which over the years have been managed by different consortia. At present, the profile of the Nigerian Railway System is shown in (Table 3).

In spite of the government's desire to give rail transport adequate attention and invest in the system, it is not adequate, consistent or sustained. Results, however, show that there is an appreciable increase in the level of operational activities, as well as an appreciable increase in revenue. However, the improved operational results are usually very short lived as shown in (Table 4).

From (Table 4) indicated government spending in respective years of which in spite of the colossal amounts of money spent, the NRC service provision is still inadequate in comparison with other developing or developed countries with a railway system (Tables 3 and 5). Also, it is clear that government investment is very inconsistent and not sustained. Furthermore, the return on investment is grossly disproportionate to the level of government investment as shown in (Figure 2).

From (Figure 2), investments funds are made available at the beginning of each regime's government just to achieve the peoples' acceptance. For instance, the Shagari administration invested \$32 million in 1983 at the start of his civilian regime,

Table 5. Comparative Analysis of NRC's Infrastructure (1945 – 2016)

Indicators	1945	1995	2005	2013		2016		
				Total	Usable	Total	Usable	Repairable
Locomotive engines	257	70	172	172	28	69	35	34
Passenger vehicles	339	150	601	675	153	331	155	176
Freight wagons	3,885	1,500	3,483	3,597	635	1,219	484	735
Narrow Gauge Track	3,405	3,505	3505	3505		3,505		
Standard Gauge Track	-	-	287	617 completed 457 under construction		Itakpe – Ajaokuta-Warri: (Construction in process) Abuja-Kaduna: (95% completed) Lagos-Ibadan Standard gauge (Contract awarded)		
Population	21,000,000	88,500,000	120,000,000	167,000,000		177,000,000		

Source: NRC Rail Magazine (1998, p. 12), BPE Journal (2005, p. 41), NRC (2015) and Authors' Survey (2016)

**Figure 3. Rail Rooftop Riders**

Source: <http://cdn.pmnewsnigeria.com/wp-content/uploads/2014/08/train.jpg> (PM News, August 9th, 2014).

and then there was no further investment funding thereafter for 5 years until Babangida came to power in 1986, when his military regime invested \$88 million in 1988; Also 8 years after, Abacha came to power in 1994 and invested \$528 million in 1995; Similarly, another 4 years passed until Obasanjo came in 1999 and he invested in 2003, 2004 and 2006 respectively, while Yar'Adua began in 2007 and he invested in 2009; and the government of Jonathan started in 2011 and his investment in the system began in 2012 and continues to May 2015 (Table 4 and Figure 2). In spite of all these colossal sums of money spent on the rail system, the revenue of NRC continues to decrease except in 2012 when there appears to be an increase in revenue and number of passengers carried and subsequent

years due to the continuous funding and investments in NRC (Table 4 and Figure 2).

The Buhari's new administration (inaugurated on May 29, 2015) is equally looking at a fast moving train as part of fulfilling his election manifestoes. However, despite all the government investments to improve the performance of this public enterprise, its services are still not yet operating optimally, let alone satisfying adequately the service needs of commuters. As shown (Table 5), in spite of all the various sums of money invested in the system the current capacity and total infrastructure at the disposal of the Nigerian Railway is still grossly disproportionate to the total population. Comparatively, there is a severe dearth in the infrastructural capacity of the

Table 6. NRC Performance Overview

Year	Number of Passengers '000	Passengers Total Revenue ₦'000	Freight Tonnage '000	Freight Revenue ₦'000	Total Revenue ₦'000	Total Revenue \$'000
1970	8,942	4,676	1,311	18,438	23,114	46,228
1975	6,755	11,003	1,612	14,724	25,727	41,765
1980	10,855	25,394	1,620	30,382	55,776	83,664
1984	155,552	33,938	1,458	33,335	67,273	87,939
1985	11,709	37,527	1,182	34,247	71,774	80,284
1986	9,912	39,088	825	27,776	66,864	33,101
1989	6,520	24,318	270	18,155	42,473	5,747
1990	6,345	31,403	319	35,911	67,314	9,109
1995	1,729	39,402	108	133,915	173,317	7,572
1996	1,784	39,560	138	161,350	200,910	9,178
1997	2,974	126,200	270	136,228	262,428	11,989
1998	3,060	138,200	1,513	375,200	513,400	23,454
1999	1,788	88,882	737	404,346	493,228	22,532
2000	2,610	142,920	116	155,865	298,785	3,475
2004	1,731	206,772	62	62,575	269,347	1,403
2005	752	87,178	84	110,011	197,189	986
2006	708	84,322	41	108,948	193,270	994
2007	1,478	145,100	36	82,811	227,911	1,249
2008	1,996	233,513	47	78,600	312,113	1,778
2009	1,285	204,573	52	60,711	265,284	1,151
2010	1,514	205,241	138	81,822	287,063	1,268
2011	3,493	410,482	341	269,691	680,173	2,844
2012	4,155	615,723	182	318,313	934,036	3,936
2013	4,329	987,300	99	435,024	1,422,323	8,869
2014	4,686	1,043,507	210	609,562	1,757,420	10,461
2015	2,581	947,687	161	388,504	1,336,191	6,710

Source: Nigerian Railway Corporation – Financial Statements (Various Years) and Authors' Survey (2016)

corporation as it is grossly inadequate. For instance, in 1945 with a population of 21 million, the corporation had 257 serviceable locomotives and 339 passenger vehicles. Meanwhile in 2016, with a total population of 177 million, the corporation has just 69 serviceable locomotives and 331 passenger vehicles. At this level of infrastructure capacity, an improved performance, as well as high return on investment cannot be achieved. The poor level of infrastructure will discourage patronage by making the service unattractive to commuters. This is responsible for the present attitude of commuters, which has led to rooftop free riders shown in (Figure 3).

(Figure 3), photo is evidence of the massive rail patronage, but due to largely inadequate locomotives and the unavailability of passenger coaches to satisfy the demand of commuters, there has been a rise of rooftop free riders. The implication of this scenario is very serious in terms of the number of train accidents, which could result in injuries and even death, in extreme cases. The menace of rooftop free riders is currently being tackled by the management of the corporation in collaboration with the Nigerian Transport Police and the Lagos State Government. Additionally, to deal with the associated risk factors of this menace, extra transport police are deployed on platforms to ensure compliance, mount barriers, building of perimeter fences along the rail lines and impose severe and punitive penalties including jail terms for any member of the public arrested for fare evasion (Akwaru et al., 2014).

Performance of the NRC: Financial and Operational

(Table 6), highlights periods which indicate years where there are increases in turnover as a result of an increase in NRC services as a direct result of the government investment programme in the railway system in Nigeria. The reported NRC performance therefore corroborates with the research argument, on the believe that, if the railway system has a continuous and planned approach to investment in its infrastructure, which is sustainable and consistent, this could lead to an improvement in rail performance indicators (effectiveness, efficiency, productivity, infrastructural investment and profitability). Equally, this could also lead to an improvement in the NRC's operational measures, which will enhance customer satisfaction and increase confidence as well as result in an increase in the NRC's turnover (Table 6).

(Figure 4), show the operational performance of the NRC in terms of passengers carried from 1970-2015. It can be observed that after 1984, the number of passengers carried declined and has been on the decline since, but with a slight increase in 2012 in response to government investment in the rail system and subsequently in the later years.

(Figure 5) shows total freight hauled from 1970 to 2015. It also follows a declining pattern similar to the passenger performance, in spite of the government's high level of investment in the corporation. Although the operational measures are not proportionate to the amounts spent on the system however, all the spikes observed are all in relation to injections of funds in the system.



Figure 4.NRC - Total Passengers Carried
 Source: Nigerian Railway Corporation - Financial Report (Various issues) and Authors’ Survey (2016)

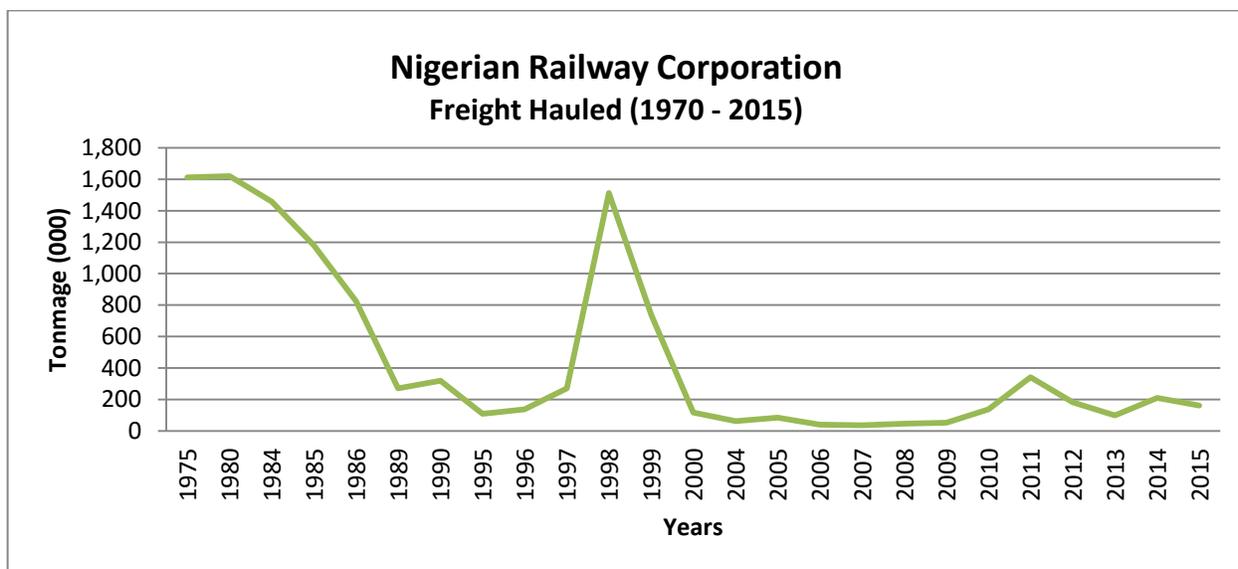


Figure 5.NRC – Total Freight Hauled
 Source: Nigerian Railway Corporation - Financial Report (Various issues) and Authors’ Survey (2016)

NRC and its Contribution to Economic Development in Nigeria

As mentioned earlier, an efficient transport system will aid trade and commerce, therefore, placing an emphasis on the creation of an efficient rail transportation system should be viewed as an essential transport feature that will aid trade and improve economic activities and development as a whole. Uzundu (2011), observed that a strong “rail system of transportation has become a major catalyst in sustainable economic development. For instance, in Britain, USA, Canada, Russia, France and China, railways are playing an important role in these countries’ economies.”

In essence, to achieve the desired and sustainable economic development, a holistic, coherent, integrated, efficient and reliable transportation system is needed. It is equally important that railway development, infrastructural investment is put into proper historical perspective in Nigeria to fully appreciate its importance in social and cultural development as well as the new approach of an effective intermodal transportation system, transportation planning culminate the development of railway transport in Nigeria (Ozoemena and Idonor, 2006).

Therefore, an efficient railway could enhance the reduction of the production cost in all the other sectors of the economy. This, in itself, could leverage other production factors in terms of competition with industries outside the country.

Table 7. Comparative Cost Analysis (Railway Tariff and Road Transport Fares)

KM	1985				1990				2000				2015			
	Passenger		Goods		Passenger		Goods		Passenger		Goods		Passenger		Goods	
	Bus N: K	Rail N: K	Lorry N: K	Rail N: K	Bus N:K	Rail N: K	Lorry N: K	Rail N: K	Bus N: K	Rail N: K	Lorry N: K	Rail N: K	Bus N: K	Rail N: K	Lorry N: K	Rail N:K
1	0.50	0.10	2.40	0.87	1.00	0.27	3.00	1.40	10.00	0.84	10.00	3.75	20.00	1.86	11.94	7.10
5	2.50	0.50	16.00	4.35	5.00	1.35	20.00	7.00	20.00	4.20	50.00	18.75	40.00	9.28	59.70	35.50
10	5.00	1.00	32.00	8.70	10.00	2.70	40.00	14.00	30.00	8.40	100.00	37.50	100.00	18.56	119.40	71.00
50	25.00	5.00	160.00	43.50	50.00	13.50	200.00	70.00	60.00	42.00	500.00	187.50	250.00	92.78	597.00	355.00
100	50.00	10.00	320.00	87.00	100.00	27.00	400.00	140.00	150.00	84.00	1000.00	375.00	954.00	185.57	1,194.00	710.00
500	250.00	50.00	1600.00	435.00	500.00	135.00	2000.00	700.00	1210.00	420.00	5000.00	1875.00	4,770.00	861.74	5,970.00	3,550.00
1000	500.00	100.00	3200.00	870.00	1000.00	270.00	4000.00	1400.00	1400.00	1015.00	10,000.00	3750.00	5,420.00	1,714.03	11,940.00	7,100.00

This was computed based on the USAID/Nigeria report (August 2015, p.6) which stated road transport between Lagos and Kano comparable with the international bench mark at \$0.06 per ton-kilometer (tkm) and converted at CBN official rate of ₦199: US\$1.00

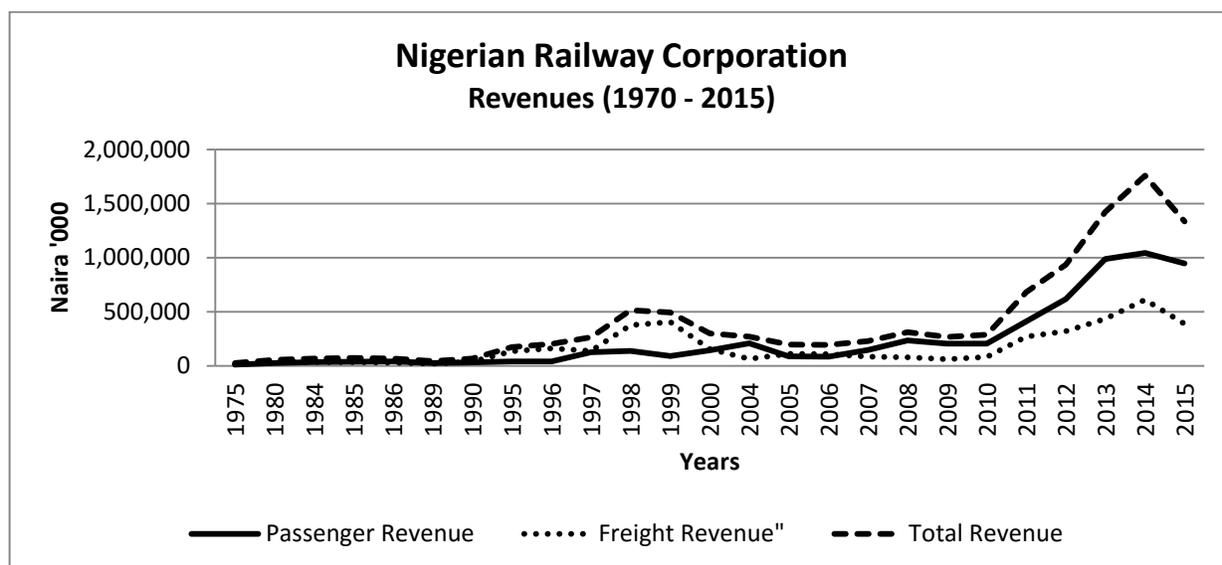


Figure 6. NRC – Total Revenue

Source: Nigerian Railway Corporation - Financial Report (Various issues) and Authors' Survey (2016)

Table 8. Comparative Analysis (Road and Railway Transport Accidents in Nigeria 2000-2012)

Year	Road Transport			Rail Transport
	Total Accidents	Deaths	Injuries	Total Accidents
2000	16,606	8,473	20,667	107
2001	20,530	9,946	23,249	89
2002	14,544	7,407	22,112	84
2003	14,364	6,452	18,116	84
2004	14,274	5,351	16,897	89
2005	9,062	4,519	15,779	51
2006	9,114	9,131	19,200	53
2007	8,477	4,673	17,794	81
2008	11,341	6,661	27,980	78
2009	10,854	5,693	27,270	44
2010	5,334	5,330	18,095	51
2011	13,196	6,054	17,464	121
2012	13,262	6,092	21,721	139
2013	13,583	6,523	40,057	125
2014	10,380	5,996	32,063	106
2015	9,734	5,440	30,478	83

Source: Nigerian Police Force Report, National Bureau of Statistics Report (various years), FRSC (2015) & Authors' Survey (2016)

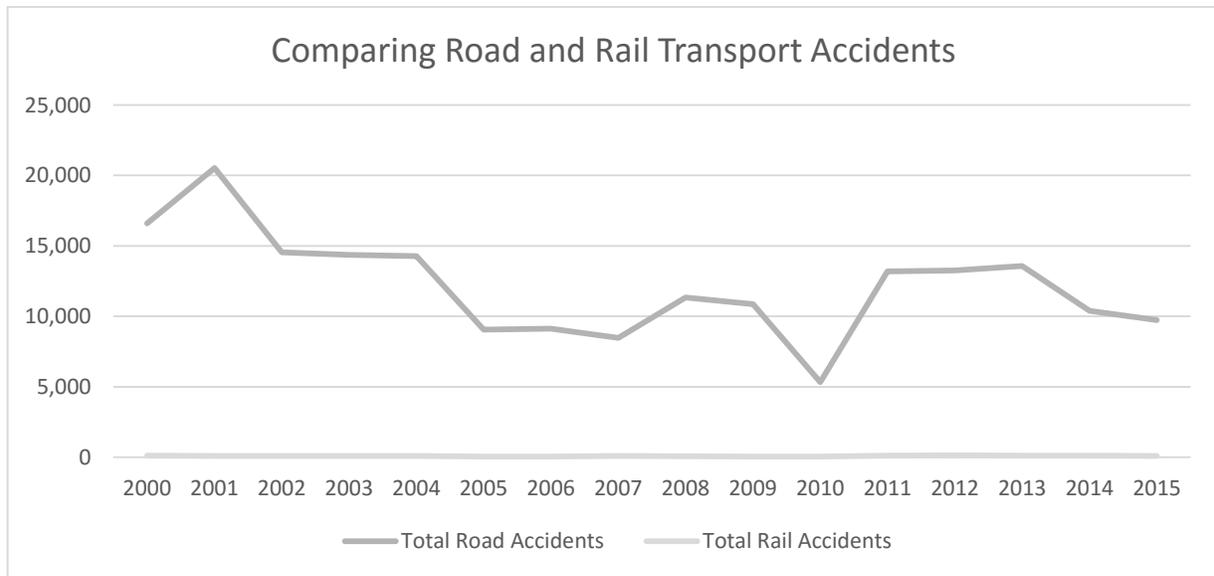


Figure 7. Accidents Statistics - Comparatives Analysis

Source: Nigerian Police Force Report, National Bureau of Statistics Report (various years), FRSC & Authors' Survey (2016)

(Figure 6) shows the pattern of total revenue of the Nigerian Railway Corporation from 1970-2015. The railway should therefore be seen and capable of being a catalyst in bringing about so many other factors such as political, social and regional developments in Nigeria.

From (Table 7), an efficient railway corporation would encourage freight of passengers and bulky goods. This would bring about a reduction in the prices of local commodities, resulting in cheaper cost of living and better living standard. In addition, travelling time on the roads could be minimized as many more people would be encouraged to use the rail service as opposed to the use of cars, also helping the environment by reducing the poisonous toxic emissions of road transport pollution. This could also lead to a reduction in the cost of road maintenance, resulting in more funds for other social amenity provisions (Oni, 2010; Ademiluyi and Dina, 2011; Akwara et al., 2014). In addition, financial viability depends upon the improvement of operational measures which could lead to attracting more passengers and freight and improving the quality of service which will allow the railway to raise prices toward road pricing levels (Table 7).

Furthermore, there is relatively lower accident rates recorded in train operations compared with road transportation, which makes railway transport relatively safer (Table 8 and Figure 7).

Also in justifying government intervention programme in the investment drive in NRC, it was observed that no government have invested in the entire system prior to 1999, hence the Obasanjo administration developed a comprehensive agenda for the re-development, modernisation and expansion of the NRC to meet the socio-economic, political, cultural and integration objectives of his political manifestoes (Ozoemena and Idonor, 2006).

The position described above has been the lack luster nature and the lip service successive governments have adopted on the NRC and have been the trend in the management and the

operation of the corporation for a while. This was responsible for the situation of the system until the recent re-launch, in December 2012, of the Lagos-Kano train service. The re-launch signaled the official completion of various rehabilitation projects awarded by successive (previous and present) governments. In particular, the government of President Jonathan also took keen interest in the resuscitation and restoration of the NRC to its past glory of the late 1970s and early 1980s. Reporting on some of the pay offs of the investment drive, the NRC transported 450,000 liters of diesel from Lagos to Offa in December 2012, which also signaled the commencement of cargo transportation through the tracks (Odeleye, 2010; Ademiluyi and Dina, 2011).

CONCLUSION

The research paper attempts to amplify the benefits of an equitable distribution of rail network among the 36 states of the federation. It equally shows how an efficient rail transport system can increase economic activities, promote development and provide both primary and secondary source employment opportunities. The research also shows that the reasons for the deterioration of equipment and consequent deep decline in productivity were as a result of the first, second, third and fourth development plans which gave priority to other modes of transport. The railways were, therefore, neglected despite the fact that they consume comparatively far less energy than other modes of transport (Odeleye, 2000). This neglectful decline was also in contrast to the growing transportation needs of the people in both the urban and rural areas, as a result of an increase in population and economic activities. The urban and regional planners did not take these clear advantages into account in the allocation of developmental resources in the transport sector. All of the major international airports in the country are still not linked by rail and there are currently no

plans to connect the rail system with the national and international airports (Odeleye, 2010; Ademiluyi and Dina, 2011).

In conclusion, Nigeria can support a viable railway network to cover a wider area and scope than the existing one. The railway, depending on the choice of locomotive, can use all primary sources of energy: hydraulic, coal and nuclear, through electrification. The railway has a very high safety margin; better space economy; better overall speed, when fully developed; environmental friendliness; and can support national security through the movement of troops (Ademiluyi and Dina, 2011).

Recommendations

A review of the various development issues of the NRC, its contribution to the economic growth and development of the country, the distribution among the states as well as the economic and financial analysis was examined. It is therefore recommended that an effective operation of NRC will depend solely on adequate funding, investment in operational machinery and effective management. All the aforementioned are of paramount importance to the successful operation of the rail system in Nigeria. From the above analysis therefore, it is apparent that with the injection of cash and capital the Corporation can increase its output as well as improve its revenue. However, Odeleye noted that since 1963 the Corporation has not returned to surplus other than a brief period in 1989-1992 (Odeleye, 2000).

The current wide fare differential is a reason to be optimistic that railways in Nigeria can be financially viable (Table 7). Therefore, looking at various factors in the country, particularly the issues of political instability, policy inconsistencies, the myopic view of most of the urban and regional planners and insufficient knowledge about the needs of the populace, the only viable option that would guarantee the constant flow of cash and capital necessary for the survival of the NRC is the involvement of private operators through the privatisation of the entire network. For example, after several years of neglect, the Federal Government, in 1997, contracted the Chinese Government to redevelop the entire structure, including the supply of locomotives, coaches and wagons. In 2004, only 30% of all equipment supplied was operational (Table 5). The simplest explanation to this scenario is what explains the issue of ownership, control and responsibility, which also supports the researchers' ontology stance and can aptly be described as a situation where when government owns, nobody owns; and when nobody owns, nobody cares. This is part of the factors responsible for the current state of neglect of the NRC by the successive governments (Odeleye, 2000; BPE, 2005).

Hence, to achieve a vibrant rail network in Nigeria, there should be an increase in the level of investment and a physical presence in all states of the Federation: An efficient railway network could be achieved through private sector involvement via privatization. The state distribution of the network could enhance the effective decentralization of the Corporation, whereby each of the states would own and run the tracks while leasing out the running of the passenger and freight services to

private operators. For instance, proceeds from the sale of the network could be used to dualize the networks in each of the states and, subsequently, the maintenance of the tracks could either be held by the state government or leased out to private operators as well. However, private running of the entire network could guarantee the required funding and investments necessary for the success of the railway system in Nigeria.

Conflict of interest

Authors have none to declare

REFERENCES

- Abioye O (2016). Privatization of the Nigerian Railway Corporation: An evaluation of critical choices. PhD thesis, submitted to Cardiff Metropolitan University. Repository.cardiffmet.ac.uk
- Abubakar AA (2006). Nigerian Railways: Past, present and future perspectives. *Rail News*, 4(6): 4
- Ademiluyi IA, Dina OA (2011). The Millennium Development Goals and the Sustainable Future for Nigeria's Urban Environment: A Railway Strategy. *J Hum Ecol*, 33(3): 203-209
- Adesanya A (2010). Bringing the Nigerian Railways Back on track – challenges and options. Paper presented at monthly NISER seminar series, held at the NISER conference room, November.
- Akwara AF, Udaw JE, Ezirim GE (2014). Adapting Colonial Legacy to Modernism: A focus on Rail Transport Development in Nigeria. *Mediterranean Journal of Social Sciences*. Vol 5. No 6. April. ISSN 2039-2117.
- Gwilliam K (1997). Sustainable Transport and Economic Development. *Journal of Transport Economics and Policy*. Vol 31. No. 3. September. Pp 325-330. & p335.
- Jaekel F (1997). *History of the Nigerian Railway (Vol.2)*, Spectrum Books Limited, Ibadan.
- Nworji ID, Oluwalaiye OB (2012) Government spending on road infrastructure and its impact on the growth of Nigerian Economy. *IJMBS*. Vol.2, Issue 2, April-June. ISSN: 2230-9519 (online), ISSN: 2231-2463 (Print).
- Obasanjo O (2006). Broadcast on Nigerian Railway Modernization and Expansion Programme. Abuja. August.
- Odeleye JA (2000). Public-Private Participation to rescue railway development in Nigeria. *Japan Railway and Transport Review* 23, March.
- Odeleye JA (2010). Politics of Rail Transport Development in Developing Countries: Case of Nigeria. 12th WCTR, July. Lisbon, Portugal.
- Okanlawon KR (2006). "Towards Enhancement of Light Rail System in Efficient Transportation of commuters in Lagos State" in *Journal of Social Policy and Society*, Volume 1, Number 1, pp. 22 - 27.
- Oni OAG (2010). Tackling Road Traffic Congestion in a Developing Country – A Contemporary Approach. *Journal of Applied Sciences Research*, 6(5): 529-542. INSInet Publication.
- Ozoemena C, Idonor D (2006). Modern Rail System - \$8.3bn Contract Under Way - Obasanjo. *Daily Champion/All Africa Global Media via COMTEX*. August.
- PM News Nigeria (2014). Railway moves 280,549 tonnes of cargo in 2 years. <http://cdn.pmnewsnigeria.com/wp-content/uploads/2014/08/train.jpg> PM News, August 9th, 2014. 11.25am.
- Sanusi LS (2014). Overcoming the fear of vested interests: Sanusi Lamido CBN Governor. http://connectnigeria.com/articles/2014/01/14/tedx-maitama-overcoming-the-fear-of-vested-interests-sanusi-lamido-cbn-governor/?wmpmp_tp=3
- Sumaila F (2013). Road crashes trends and safety management in Nigeria. *Academic Journals. Journal of Geography and Regional Planning*. Vol 6(3). Pp53-62. May.
- USAID/NIGERIA (2015). Lagos-Kano-Jibya (Lakaji) Corridor Performance Assessment: 2015 Update on the time and cost to Trade Goods. Nigeria Expanded Trade and Transport Program (NEXTT), August.
- Uzundu J (2011). Rail Transportation: A Ray Of Hope. *Nigeria NewsWorld Magazine*. Tue, 11/15/2011 - 15:35.