
URBAN TRANSPORTATION CHALLENGES: THE IMPACT OF THE LAGOS BRT-LITE

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ABSTRACT

Lagos being a mega city, where the public transport sector has suffered neglect for quite some time. This neglect, coupled with escalating urban population, has resulted in chaotic, unsustainable, time and money wasting transport system. Out of the intention to alleviate traffic anarchy and creating a functional, liveable and sustainable city, the Lagos BRT was created in 2008. This study looks at how the BRT scheme has been able to impact on the transportation challenges in metropolitan Lagos. Data were generated using well structured questionnaire, administered on 100 randomly selected respondents in the metropolis; and these were analysed using descriptive analysis and inferential statistics. From the result of the analysis, it is observed that the BRT scheme has imparted positively on the transportation system in Lagos metropolis. However, there is need to expand the system to cater for haulage, the disabled members of the society, the transportation of infants on pushchairs as well as the aged in order to alleviate the transportation challenges in the society.

Key-words: Mega city, Transportation, Bus rapid transit, Challenges, Lagos

INTRODUCTION

Transportation is the cornerstone of civilization; it plays a key role in economic growth and development by providing avenues for linking different parts of the society together. Nigeria has been experiencing rapid population growth as a result of improvement in the health care system. Besides, with increasing rural unemployment and poverty, leading to rural-urban drift, the pressure on the infrastructural facilities in the urban area, especially transportation, continues to rise. Lagos being a mega city, has been a victim of this phenomenon, where the public transport sector has suffered neglect and with escalating urban population, has resulted in chaotic, unsustainable, time and money wasting transport system. Out of the intention to alleviate traffic anarchy and creating a functional, liveable and sustainable city, the Lagos BRT was created in 2008. Since the BRT has been introduced for over three years now; there is therefore the need to examine the extent to which this scheme has been able to address the urban transportation challenges in Lagos. This study therefore looks at how the BRT scheme has been able to impact on the transportation challenges in metropolitan Lagos. The rest of the paper is divided into four sections. The first section following this introduction presents the literature review. This is followed by the historical development of Lagos State in Section three. Section four reviews the operation of the BRT system in Lagos. The fifth section discusses the sources of data and method of analysis whiles the sixth section we present and discuss the result. The seventh section, which is the last, concludes the paper.

LITERATURE REVIEW

Transportation plays an important role in the political, economic and social development of any society. It constitutes the main avenue through which different parts of the society are linked together. Hailey (1957) opined that there seems to be no other type of development which can speedily change economic and social conditions of backward nations except transport. Olomola (2003) is of the opinion that inadequate provision of transportation infrastructure is the basis of the high incidence of poverty across various Nigerian communities. Transportation infrastructure facilitates the mobility of the means of production thus improving productivity and reducing cost, thereby enhancing competition. It moves goods and people to facilitate production and trade and consequently spurring growth. A good transport system is the connecting basis of all socio-economic interactions and economic activities linking and integrating the country to the world. The demand for effective transportation increases when economic activities and organisation expand. Transportation includes sea, rail air and road transportation. Road transportation is the most common type of transportation in Nigeria. It is responsible for moving substantial proportion of goods from the rural areas to the urban centres, and for moving goods from the interior to the ports for exportation. The challenges of road transportation are many. These include dilapidating condition of roads, lack of maintenance culture, abandoned road projects, and inadequate passenger capacity among others (Oni and Okanlawon, 2008). The need for adequate and efficient road transportation in urban centres, especially Lagos cannot be overemphasised given its position as the commercial nerve centre of the nation and with the perpetual rural-urban drift in the nation.

Historical Development of Lagos: Lagos State was created on May 27th, 1967 through the State (Creation and Transitional Provisions) Decree No. 14 of 1967 which restructured Nigeria into a Federation of twelve states. However, Lagos as a trading port has a recorded history dating back to the Portuguese explorers of the 16th century. Situated in the south-western corner of the country, the elongated state spans the Guinea coast of the Atlantic Ocean for over 180km. From the Republic of Benin on the west to its boundary with Ogun state in the east, it extends approximately from latitude 6°2'North to 6°4'North, and from longitude 2°45'East to 4°20'East. Lagos State lies to the south-western part of the Federation. The smallest State in the Federation, it occupies an area of 3,577 sq km. 22% or 787sq. km of which consists of lagoons and creeks.

The state has a population of 17 million out of a national estimate of 150 million. The UN estimates that at its present growth rate, Lagos state will be third largest mega city in the world by Y2015 after Tokyo in Japan and Bombay in India. Of this population, Metropolitan Lagos, an area covering 37% of the land area of Lagos State is home to over 85% of the State population. Current demographic trend analysis revealed that the State population growth rate of 8% has resulted in its capturing of 36.8% of Nigeria's urban population (World Bank, 1996). According to UN habitant, Lagos having a population exceeding 10 million is without any organized public transport system. As a result, personal mobility relied on a large fleet of approximately 75000 minibuses (Danfo) together with much smaller numbers of midi buses (popularly known as Molue) and shared taxis (Kabukabu)). Local journey employed commercial motor cycles (Okada).

Danfo and Molue are of low quality, with difference in fares. Journey with these vehicles are slow and uncomfortable for passengers and they ply relatively short distances in the interest of maximizing profit rather than serving demand of the passengers. The drivers of these vehicles are notoriously known for aggression. Besides the poor nature of commercial vehicles, other factors responsible for the chaotic transport situation in Lagos include: inadequate and inefficient road network; lack of maintenance culture of the road and high rate of car ownership. To tackle this challenges the then governor of Lagos State, Senator Bola Ahmed Tinubu appointed a special adviser on transportation and sought development assistance from the World Bank Group. Based on earlier studies the Lagos Urban Transport Project (LUTP) began by building the capacity to manage the transport system and identifying the priority actions which need to be taken, investments and enabling measures needed for its improvement. The project was able to adopt a multimedia transport approach recognizing the need for developing rail and inland waterway mass transit for integration with the core road passenger transport network.

However, after an extended period of consultation with and education of the leadership of the operator, unions and associations, agreement was reached to test both the regulatory reforms and the fleet investment in a pilot scheme using the private - public financing framework envisaged in the establishment of LUTP, LAMATA therefore, provide the enabling frame work, which are traffic system management measures in the corridor and the provision of passenger terminals and a deposit /workshops complex for the new fleet, however, the operators would accept the regulatory enforcement and commit to procurement of appropriate buses. By August 2006, Integrated Transport Planning Limited (ITP) was appointed and embarked on a feasibility study for a starting corridor for the Lagos Bus Rapid Transit (BRT) system. The study looks at infrastructure, operation, regulatory and institution reforms. The aim of the study was to develop a BRT system that aimed at efficient level of service, adequate institutional framework and regulation, high social economic benefits, especially for low income earner of the population, maximize the level of private expenditure and liability and finally reduce the negative environmental impacts of the BRT system.

Operation the Bus Rapid Transport (BRT) in Lagos

Lagos state because of its chaotic and traffic jam coupled with its exponential increase in the population size which has led to the launching of the Lagos Bus Rapid transit (BRT) - Lite in March 2008, the new Bus Rapid transit (BRT) system provides Lagos commuters with a clean, affordable, and reliable means of transport. In addition, the BRT ensures fast, comfortable and cost-effective service. The pilot BRT corridor was chosen through the feasibility study and today BRT-lite operates along Ikorodu road, Western Avenue and Eko Bridge, a key radial highway that marks the 22km connection between mile 12 and Lagos island. Prior to implementation, the highway enjoyed a wide dual carriage way varying between two and three lanes in each direction. It should be noted that, the BRT system is the first of its kind in Sub Saharan Africa. The Lagos BRT -lite draws from the experience of Bogota (Colombia) and Curitiba (Brazil) but uses the concept in African context as BRT-Lite (i.e high quality bus system that is affordable in the local context but retaining as many of the most desirable BRT characteristics as possible). The BRT-Lite system operates along a 22 kilometer route of which 65 percent is physically segregated from the regular roadway and 20 percent separated by road markings.

SOURCES OF DATA AND METHODOLOGY

The study made use of primary data which were obtained from questionnaires administered on 100 randomly selected respondents at Ikotun, Igando and Oshodi areas of Lagos state. Of the 100 questionnaires distributed, one was returned unusable, with 99% being valid and thus analysed. 26 questions were asked and 6 relate to the personal characteristics of the respondents. The study made use of simple percentages, chi-square, as well as crosstabs. The Formular for the Chi-Square is as shown below:

$$\text{The } \chi^2 \text{ cal.} = \sum_{i=1}^3 \sum_{j=1}^5 \left(\frac{(o_{ij} - e_{ij})^2}{e_{ij}} \right)$$

$$e_{ij} = \frac{RT \times CT}{n}$$

- where e_{ij} = Expected frequency
- o_{ij} = Observed frequency
- I = no. of rows
- j = no. of columns
- RT = Row total
- CT = Column total
- n = Grand total
- Degree of freedom = (r - 1) (c-1)

The five scales used in the analysis are: Strongly Agree (SA), Agree (A), Undecided (UD), Disagree (D) and Strongly Disagree (SD).

- Decision Rule: Reject H_0 If χ^2 calculated > χ^2 tabulated
- Accept H_0 If χ^2 calculated \leq χ^2 tabulated

The characteristics of the respondents were first discussed followed by description of their responses to questions related to the issues at hand.

PRESENTATION AND INTERPRETATION OF RESULT

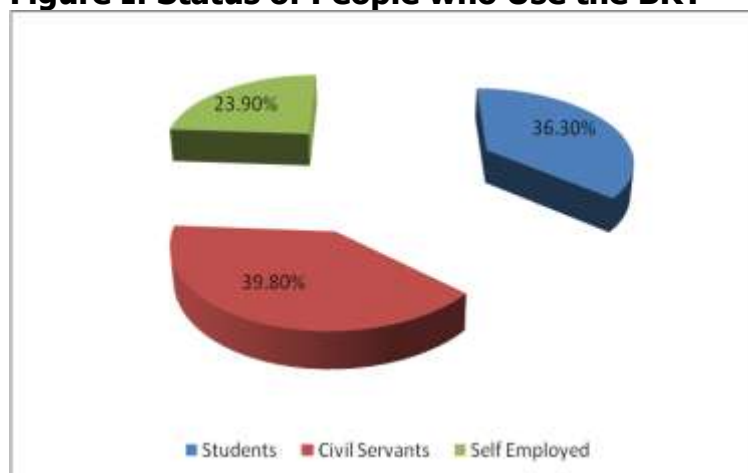
Characteristics of Respondents

Of the 99 valid questionnaires, only 96 of the respondents indicated their ages; of these 96 (74%), 71 are representing 40 years and below, while 25 (26%) are above 40 years, 97 respondents indicated their sex, of which 32 were females representing 33% and 65 (representing 67%) were males. 35 (36%) of the respondents were students while the remaining 64% claimed they are employed, 6.3% of the respondents said they do not possess formal education while the remaining 93.7% have formal education ranging from first school leaving certificate to graduate training. 75% of the respondents claim to they earn below N50,000 per month while 16% earn between 51,000 and 100,000 per month. The remaining 9% earn above N100,000. Of the 99 respondents, 24 claim they own a car while the remaining 75 do not have a car of their own. 78% of those who use the BRT claim they use the BRT regularly while the remaining 22% use it once in a while.

Table 1: Socio-economic characteristics of Respondents

Parameters	Relative Frequency (%)
Gender	
Female	33.0
Male	67.0
Total (%)	100
Age	
Below 20 years	10.4
21 -30	43.8
31 - 40	19.8
41- 50	11.5
Above 50	14.5
Total (%)	100
Educational Background	
No formal Education	6.3
SSCE and below	45.3
OND/NCE	26.8
HND/BSC and Above	21.6
Total (%)	100
Average Income (Per Month)	
N18,000 – 50,000	75.1
N51,000 – 100,000	15.8
N101,00 – 150,000	3.9
Above N150,000	5.2
Total (%)	100

Source: Field Survey, 2011

Figure I: Status of People who Use the BRT

Source: Field Survey, 2011

The figure above shows the status of people who use the BRT. Majority of those who use the BRT are employed people. They probably use the BRT because the perceived advantages of the scheme. Of the 88 people who use the BRT, 19 of them representing 22% claim to have a car of their own. This indicates that some people who have cars also patronise the BRT for some reasons. Of those who use the BRT, majority of them (67%) agree that the BRT is faster than using their own cars or other commercial buses. This is probably due to the fact that the BRT have dedicated lanes in some routes. 91% of the respondents agree the BRT is safer than other commercial vehicles. A similar percentage

agree the BRT is more reliable than the conventional buses, probably because the BRT uses new buses which are less likely to break down like the older conventional buses. In the same vein, 92% agree that the BRT is more comfortable than the conventional buses. 4% do not agree it is more comfortable. 93% of respondents said the BRT buses are cheaper than conventional buses while only 7% said it is not. 46% claim the BRT buses take care of their luggage while 54% do not agree with this view. Perhaps for small luggage, the BRT still accommodates such; however, large luggage cannot be accommodated because there is no provision for luggage in the buses. On transporting luggage or ware with BRT buses, 38% of respondents claim they have challenges in transporting their luggage with BRT, this is probably due to the fact that the buses are meant for passengers only, without provision for goods. 34% of respondents claim they carry their babies while using the BRT, however, a greater percentage (66%) said they do not carry babies when using the BRT. Not carrying a baby when using the BRT could be because there is no provision for carrying baby chairs or that these people do not need to go with their babies when using the BRT.

A small proportion of respondents claim there is provision made for babies in the BRT, however, majority said there is no provision for babies in the BRT. 84% of the respondents said they have seen the elderly people using the BRT. 88% admit there is no special provision for the elderly. Although about 50% claimed that they have seen the disabled using the BRT but majority (82%) said there is no special provision for these disabled. Among those whose income is below N50, 000, majority of them (51) uses the BRT. Of those whose income is between 51,000 and 100,000; eleven of them use the BRT. For those respondents who earn above 100,000; only 6 of them use the BRT. This result suggests that those who use the BRT are mostly low income earners. Relating education to the use of BRT, no clear direction is indicated because , for those with university degree among the respondents ,virtually all of them have use the BRT one time or the other, while for those with no formal education and those with OND/ NCE, about 80% of them claimed to have used the BRT . This implies that education did not have much to do with the using of BRT. This is no significant difference between male and female in the use of BRT as 94% of female respondents said they use the BRT while 88% of male respondents have used the BRT. 92% of young people below 30 years claim they use the BRT while 86% of the respondents above 30% do use the BRT. 91% of the students respondents use the BRT and 90% of civil servants among the respondents use the BRT . A lesser proportion of self-employed among the respondents (88%) use BRT, indicating that BRT use covers all classes of people. On whether the people are satisfied with services of the BRT, majority (70%) claimed they are not satisfied. The reasons adduced for dissatisfaction are the fact that they have to queue for long to board BRT buses; and that the BRT tickets are not available at all bus stops . They either have to buy the tickets in advance or have to get a BRT terminus to get the ticket. This they claim excluded a lot of people from using the BRT. Besides some claim they cannot use the BRT to transport their big luggage such that they are naturally excluded from enjoying the services of BRT whenever they have big luggage on account of no boot or luggage cabin in the BRT.

In analysis the impact of BRT on urban transporting challenges, we used questions that as for people's response on how reliable, how safe and how fast they feel the BRT is, using

the chi-square technique. The Table of responses and the analysis of response are presented in Tables 6 and 7.

Table 2: Response on Impact of BRT on Transportation Challenges

	Freq											
	SA	Freq, (%)	A	Freq, (%)	D	(%)	SD	Freq, (%)	Not Sure	Freq, (%)	Total	(%)
BRT Fast	33	33.67	33	33.67	16	16.33	4	4.08	12	12.24	98	100
BRT comfortable	60	61.22	30	30.61	3	3.06	1	1.02	4	4.08	98	100
BRT is more reliable	50	51.02	39	39.80	2	2.04	1	1.02	6	6.12	98	100
Total	143		102		21		6		22		294	

Source: Field Survey, 2011

Table 3: Analysis of Responses

	SA	e _{ij}	A	e _{ij}	D	e _{ij}	SD	e _{ij}	NOT SURE	e _{ij}	Total
BRT Fast	33	47.67	33	34	16	7	4	2	12	7.33	98
BRT comfortable	60	47.67	30	34	3	7	1	2	4	7.33	98
BRT is more reliable	50	47.67	39	34	2	7	1	2	6	7.33	98
Total	143		102		21		6		22		294

$$df = (r-1)(c-1) = (3-1)(5-1) = 2 \times 4 = 8$$

$$e_{ij} = \frac{RT \times CT}{n}$$

At the 5% significant level the χ^2 calculated (36.22) is greater than the χ^2 tabulated (15.51); we therefore reject the null hypothesis and accept the alternative hypothesis. This suggests that the operation of the BRT in Lagos are has contributed significantly in reducing the transportation challenges in urban Lagos.

DISCUSSION OF RESULT

From the data obtained, it is observed that majority of the respondents agreed that the BRT buses are cheaper and more convenient than the conventional buses, majority (53%) are of the opinion that the BRT buses did not cater for their luggage. Besides the fact that the BRT did not cater for luggage and did not make provision for carriage of babies, a lot were suggested on how the BRT can serve the people better. It is been suggested that provision should be made for luggage by having another type of vehicle solely for luggage; in this case people would hand in their luggage at BRT terminus and they would be given a tag to claim it at their destination, while the owner of such luggage can use the passenger BRT bus to his or her destination to claim the luggage with the tag given. It is also suggested that the tickets should be made available in all bus stops while more BRT buses should be provided, more routes should also be created. BRT shelters should be built at all bus stops to provide shade for commuters waiting for buses. Drivers of BRT buses should be continuously trained so as to imbibe the culture of courtesy. The road

network should be improved while smaller buses should be provided for shorter routes at reduced fares. Some respondents suggest that the BRT should be free for the disabled and the elderly while they should be given preference when boarding the BRT. The BRT buses should start their operation early in the morning and close late so as to take care of early risers and those who close late.

SUMMARY AND CONCLUSION

While the Lagos BRT is an innovation in solving the transportation problem in the city of Lagos and given the fact that it is a welcome innovation, the scheme is still beset with some problems ranging from inadequate buses and coverage as well as bad road network. It is therefore suggested that the coverage of the BRT should be expanded while increasing the number of buses at the existing routes. Smaller buses should be provided for shorter routes while the tickets should be made easily accessible. In addition, it is suggested that the elderly and disabled should be given preference at boarding points while provision should be made for transporting of luggage and push chairs for babies.

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