APPRAISAL OF TRAVEL BEHAVIOUR OF PUBLIC ROAD TRANSPORT USERS IN OSOGBO, NIGERIA

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ABSTRACT

This study examines the travel behaviour of public road transport passengers in Osogbo Osun *State, Nigeria. It examines passengers' travel characteristics, operators' and passengers' travel challenges, and differences in the passengers' travel characteristics. The study used primary data which were obtained through structured questionnaire administered to 10 percent of 2,560 passengers. The 256 respondents were from four purposively selected motor parks in the study area. Frequency and percentages were used to analyze travel characteristics and challenges, while Analysis of Variance (ANOVA) was used to examine differences in the travel characteristics of passengers. The study revealed that, the average age of passengers was between 31-45 years, while average income ranges between N18, 000 -N25, 000. Average passengers' waiting time for cab was less than 15 minutes, while average travel frequency was 8 times per week. Between 20-40 minutes was the average travel time per trip and 1.5 kilometers was average travel distance per passenger. Accidents, vehicle malfunction and frequent stops were the major challenges faced by passengers. Analysis of Variance (ANOVA) shows that there is no significant difference in the travel characteristics across the selected motor parks in the study area. The study recommended pragmatic strategies such as the provisions of more cabs, fare subsidies, pegging of age limit for drivers of public transport among others. This will enhance a more efficient public transport system in the study area.*

Keywords: Travel Behaviour, Public Transport, Road Users

Introduction

The level of public transport provision in the developing nations, particularly Nigeria is very low. The demand for Public transport far outweighs the supply. This is due to rapid urbanization and the increasing economic activities in the developing countries which makes it difficult for the transportation needs of the people to be fully satisfied (Aderamo, 2012).

Public transport system, which is an aspect of the country's transport sector, had all along been in the hands and control of Nigerian private entrepreneurs. Thus, the private owners dictated largely the modus operandi of the nation's public transport system. In the early 1960s, the macro-economic indicators, which are yardsticks for measuring all aspects of the growth of Nigeria's economy, were consistently positive. This was because the nation depended much on agricultural products for its foreign exchange earnings and a low proportion of the population was engaged in white-collar jobs. During this period, a number of private individuals owned private vehicles, which they used for both intra and inter-urban movements, especially in large cities (Ogunbodede, 2008).

Studies in urban transportation confirmed that more than 75% of population in cities depends on public transport while about 25% depends on private transport system (Ogunbodede, 1990; Ogunjumo, 1986; Okpala, 1981; Mrakpor, 1986). The socio-economic variables of Nigerians contributed in no small measure to this pattern.

The problems facing the urban centres of Nigeria are many and complex; one of the most apparent, being inter and intra-town mobility (Badejo, 1996). Intra-town transportation problems include traffic congestion, poor road facilities, poor environmental condition, road degradation, insufficient right of way, air and environmental pollution (LAMATA, 2010) among others.

The problem with linkages within Nigerian cities had existed for a long time but in recent years, Osogbo has come to be known for its massive traffic congestion (Ladele, 2010). Presently, the traffic management apparatus is neither efficient nor effective and this indirectly contributes to the problems rather than solving them. Most of the existing body of knowledge on the analysis of travel behavior of road transport users has been cursory in nature, especially in Osogbo.

It is against this background that, this study focused on the nature of public transport passengers' travel behaviour in Osogbo, Osun State, Nigeria. This is with a view to understanding the challenges of the passengers and suggests measures to ameliorate it. Passengers' travels characteristics are examined alongside the challenges and constraints faced by the passengers and vehicle operators in the study area. The study also tested the hypothesis that there is no difference in the passengers' travel characteristics in the study area.

Literature Review

Public Transport Situation in Nigeria

Transport problems in the last two decades in Nigeria have been serious. These problems result from influx of population into the urban centers, industrial growth and the inability of transport facilities to cope with the demand (Badejo, 1996). The problems manifest in terms of extended waiting time for vehicles, traffic congestion, parking problems and road traffic accidents. There is a general shortage of public transport service in Nigeria relative to demand. The public owned transport facilities in the few states where they exist are inefficient and the private sector operators of para-transit transport system are substandard and disorganized (Badejo, 1996).

In Nigeria, two distinct public transport systems can be identified. These are the municipal bus services provided by government owned transport corporations and the various Para - transit services provided by the private operators. Public transportation in Nigeria has also been dominated by private operators. These private entrepreneurs operate with uncontrolled abandon and provide erratic and unreliable services (Adeniji, 1983). Usually no clearly defined routes are being plied by these private operators who are essentially demand responsive. A World Bank report (1992) revealed that in 1987, more than 98 percent of all urban public transport journeys in Nigerian urban centers were provided by private operators using taxis, minibuses (danfos) and buses (molues). This contrasts sharply with the situation in advanced countries where in most cities; public owned bus operators have the monopoly of public transport provision (Nash, 1997; Ludlow, 1986.

Materials and Methods

The data for this study were sourced from primary and secondary data. The primary data were obtained using structure questionnaire and personal observation. **The sample frame for this study consists of motor parks in Osogbo. Eight (8) motor parks are in existence in Osogbo metropolis, out of which 4 were randomly selected for the study. They are: Oke fia Motor park, Ilesha garage, Old garage and Power line. Questionnaire was administered on commuters in the selected motor parks** and the study adopted the total number of passengers in each cab (bus) for single round trip of a particular day as minimum sample size. The average capacity per cab on these routes is sixteen (16) persons and on the average there were 20 cabs in each of the motor parks at any point in time, making a total of 320 passengers. The pilot survey showed that, normally a cab travels 2 times daily (two round trips), which puts the entire average number of passengers at 640 for a particular day in each of the Motor park, in view of the fact that the cabs must be fully loaded before embarking on any journey. Consequently, a total of 2,560 passengers would travel in the four selected motor parks per day. Questionnaire forms were administered on 10% (256) of this total, representing the total number of respondents for this study. Additionally, all the 80 drivers were interviewed in order to obtain data on the challenges they face on the job. Remember 20 cabs (drivers) were said to have present in the 4 selected parks making a total of 80 drivers. The purposive sampling technique was used for this study. This is necessary due to lack of pre-determined consistent population and passengers' chances of not being selected. In order to obtain a general understanding of the operations, travel characteristics including challenges faced by respondents were also examined. Frequency cross tabulation and percentages were used to analyze the information on passengers' characteristics. Analysis of Variance (ANOVA) was used to examine differences in passengers' travel characteristics in the study area.

The Study Area

The location of Osogbo Township is on the intercept of Latitude 9° 7`and 9° 21` North of the equator and Longitude 4° 5`and 4° 26` East of the Greenwich meridian. Administratively, it serves as the Headquarters of both Osogbo and Olorunda Local Government Areas with secretariats at Oke – Baale and Igbona respectively. The average height of land is about 500 meters above sea level. The figure 1 shows Osogbo Road Transport Networks.

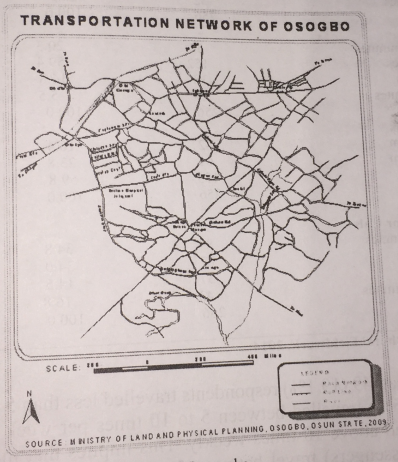


Figure 1: Osogbo Road Transport Networks

Results and Discussion

Travel Characteristics of Passengers in the Study Area

The study examines the characteristics of passengers in their quest to make various trips in the study area. Some of the travel characteristics include travel time per trip, time spent per trip, length of trip, passengers waiting time for cab and travel cost.

Table 1: Travel Characteristics of Passengers

	Frequency	Percentage (%)
Weekly Travel time		
Less than 5 times	49	19.1
5 – 10 times	155	60.5
Above 10 times	52	20.3
Total	256	100.0
Time spent		
Less than 20 minutes	52	20.3
20 – 40 minutes	152	59.4
41-60 minutes	38	14.8
Above 60 minutes	14	5.5
Total	256	100.0
Length of trips		
0.5km – 1.00km	42	16.4
1.00km – 1.5km	61	23.8
Above 1.5km	153	59.8
Total	256	100.0
Waiting time for Cab		
Less than 10 minutes	89	34.8
10 – 15 minutes	87	34.0
16 – 20 minutes	37	14.5
More than 20 minutes	43	16.8
Total	256	100.0

Source: Authors' Fieldwork, 2014

It is observed that, 49 (19.1%) respondents travelled less than 5 times per week, 155 (60.5%) travelled between 5 to 10 times per week while 52 (20.3%) travelled above 10 times weekly. This implies that majority of respondents (passengers) travel between 5 to 10 times in a week. The reason for this high frequency of traveling might be due to the fact that traders form the bulk of respondents interviewed. They have to travel

regularly to buy their stock (see table 1).

Table 1 also revealed that 20.3% of the respondents spend less than 20 minutes per trip daily, 59.4% spend between 20 to 40 minutes per trip, 14.8% spend between 41 to 60 minutes per trip while 5.5% spent above 60 minutes per trip daily. It can be inferred from this analysis that the majority of respondents spent between 20 – 40 minutes per trip daily. The implication of this is that those who travel within the cities form the majority of respondents.

Furthermore, the length of trips of the perssengers reveals that 16.4% of respondents travel 500-1000 metres, while 23.8% and 59.8% travel 1000-15000 meters and above 15000 meters respectively. It is observed that most of the passengers travel above 1500 metres, which equivalents one and half kilometers. This shows that majority of passengers make long journeys.

The waiting of passengers for cab in table1 shows that about thirty nine percent of passengers wait less than 10 minutes before they get cab, 34.0% of passengers agreed that they usually wait between 10 and 15 minutes before getting cab, while 14.5% and 16.8% of passengers maintained that they wait 16-20 minutes and more than 20 minutes respectively before their cab takes off to the various destinations. This implies that, bulk of respondents wait less than 15 minutes before they get cab to their various destinations.

Table 2 Travel Cost

Travel cost	Frequency	Percentage (%)
Below ₦100	13	5.1
₦100 – ₦200	42	16.4
₦200 – ₦300	51	19.9
₦300 – ₦400	50	19.5
Above ₦400	100	39.1
Total	256	100

Source: Authors' Fieldwork, 2014

The travel cost incurred by respondents shows that, 5.1%, 16.4%, 19.9%, 19.5% and 39.1% of respondents pay below N100 between N100 - N200, between N200 - N300 naira, between N300 - N400 and above N 400 respectively as transport fare per trip in the study area. This infers that the highest ratio of passengers usually pay above N400 as transport cost while traveling. This might be attributed to the fact that passengers do make inter-city travel very often in the selected motor parks in the study area.

Table 3: Trip Purpose of Passengers

Trip purpose		Percentage (%)	
		Yes	No
Business		40.2	59.8
Work		94.1	5.9
Children School		88.3	11.7
Childcare		40.2	59.8
Personal Healthcare		40.0	60.0
Shopping		59.8	40.2
Recreation		19.9	80.1
Religion		30.5	65.5
Fetching Water		60.5	39.5
Waste Disposal		59.4	40.6
Social functions	Wedding	40.2	59.8
	House warming	19.9	80.1
	Funerals	19.9	80.1
	Visit to Relatives & Friends	59.4	40.6
Others		44.9	50.1

Source: Authors' Fieldwork, 2014

The purpose for which passengers travel as revealed by respondents in table 3 shows that majority make most of their trips for work (94.1%), to children's school (88.3%) and for shopping (59.8%). Social functions such as visits to relatives (59.4%) also gain prominence in the type of trips that passengers make in the study area.

Operators and Passengers' Challenge

In this sub-section, attempt is made to examine the challenges faced by the public transport operators and the passengers. Some of the issues germane to this include vehicle malfunctioning, fuelling difficulties, motor accidents, long journey times and frequent stops while on a trip. It should be noted, however, that the target respondents here are the public transport operators.

Table 4: Operators and Passengers' Challenge

Break down of Vehicle	**Frequency**	**Percentage (%)**
Less than 2 times	50	62.5
2 – 4 times	20	25.0
5 – 6 times	10	12.5
Total	80	100
Fuelling Difficulties	**Frequency**	**Percentage (%)**
Less than 2 times	70	87.5
None	10	12.5
Total	80	100
Occurrence of Accidents	**Frequency**	**Percentage (%)**
Less than 2 times	30	37.5
2 – 4 times	10	12.5
None	40	50.0
Total	80	100
Long Journey times	**Frequency**	**Percentage (%)**
Yes	60	75.0
No	20	25.0
Total	80	100
Frequent stops	**Frequency**	**Percentage (%)**
Yes	70	87.5
No	10	12.5
Total	80	100

Source: Authors' Fieldwork, 2014

Table 4 shows that 62.5% of respondents reported that their vehicles usually break down less than twice in a month, while 25% and 12.5% of the respondents disclosed that their vehicles break down 2-4 times and 5-6 times respectively. This implies that the highest proportion of respondents have less than 2 incidence of vehicle malfunctioning per month.
It is also observed from table 4 that public transport operators do have fuelling difficulties in less than two times, representing (87.5%) in a year.
Occurrence of accident is not also common in the study area, as noted by the majority of public transport operators. This is the position of public transport operators in the study area as contained in table 4. Accordingly, 37.5% of respondents mentioned occurrence of accidents in a year was less than 2 times, while 50.0% of respondents were of the opinion that they had occurrence of accident in a year.
Table 4 further reveals that majority of respondents accounted for long journey times (75.0%) and frequent stops (87.5%), while those who stated otherwise were 25.0% and 12.5% respectively.

Variation in the Passengers' Travel Characteristics in the Study area

Analysis of variance was used to test if there are significant differences in passengers travel characteristics in the study area. The result in Table 5 revealed that variation in passengers travel characteristics is not significant at 0.05. This implies that there is no significant differences in the passengers' travel characteristics across motor parks in the study area

Table 5: Analysis of Variance (ANOVA) of differences in passengers' travel characteristics

ANOVA

		Sum of Squares	df	Mean Square	F	Sig
travel time	Between Groups	.043	3	.014	.036	.991
	Within Groups	100.922	252	.400		
	Total	100.965	255			
time spent per trip (minutes)	Between Groups	.016	3	.005	.009	.999
	Within Groups	145.219	252	.576		
	Total	145.234	255			
length of trip (metres)	Between Groups	.012	3	.004	.007	.999
	Within Groups	146.859	252	.583		
	Total	146.871	255			
passengers' waiting time for cab (minutes)	Between Groups	.641	3	.214	.184	.907
	Within Groups	292.844	252	1.162		
	Total	293.484	255			
travel cost	Between Groups	491.797	3	163.932	.108	.955
	Within Groups	381651.6	252	1514.490		
	Total	382143.4	255			

Source: Authors' Fieldwork, 2014

Planning Implication and Policy Issues

In the last few years, researchers, planners and transport experts have been raising alarm over the unregulated growth pattern of settlements without corresponding and complementary public transport (LAMATA, 2010). It has become quite obvious that public transportation has failed to keep pace with the rate of expansion and demands of economic growth in most of Nigerian cities.

Most of the existing body of knowledge on the analysis of travel behavior of road transport users has been cursory in nature, especially in Osogbo. It is in the light of this that this study focused on the nature of road public transport passengers' travels in Osogbo, Osun State, Nigeria. This study however, serves as a data base on the travel behavior of public road

transport users in terms of their travel characteristics and demand as well as challenges they are usually faced with. This study hereby suggested the following for policy considerations:

1. Provision of additional cabs and buses at the motor parks, in order to eliminate unnecessary waiting time by passengers. Government policy statement on public transportation at the local level, on passengers' travel demands that will encompass passengers' travel-friendly rules for an efficient system is also essential.
2. Reduction in travel time enhanced through continuous maintenance of the road and efficient repair of the vehicles used for public transport, there is also need for the provision of motor parks at the various activity areas within the study area, in order to distribute the trips that will be generated appropriately and as a response statement to the challenge of frequent stops while journeying.
3. Waiting time of the passengers for cabs should be maintained and reduced if possible, through the operators' interventions by their respective associations. Operators' and passengers' challenges suggest the need for cab test before they start operations and seasonal cab checks by the motor park association. This can also be done after the drivers commence operations in order to avoid break down of vehicles.
4. Adequate fueling of vehicles should be done at filling stations closer to the parks in the mornings, so as to serve operations for the entire day in order to curb the fueling challenge. **As a policy, age limit for public transport drivers should be specified as not below 25 years and preference should be given to married above single drivers in selection for job placement.**

Conclusion

This study examined travel behavior of public road transport users in Osogbo. Though the travel difficulties in Osogbo has not yet assumed the dimension of Lagos, Ibadan, Port-Harcourt and other bigger urban centres in Nigeria, signs of potential problems are already emerging. Therefore, it is essential that effective strategies are required to improve public transport

system in the study area.

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