

Full Length Research Paper

Impact of socio-economic characteristics on formal and informal public transport demands in Kwara state, Nigeria

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This paper looks at the impact of socio-economic characteristics of formal and informal public transport demand in Kwara State, Nigeria. The study is based on a purposively selected set of 256 respondent commuters in the parks of the randomly selected transport enterprises. Evidence from the study shows that income and cost of the trips played prominent roles on the public transport demand in the study area. Further analysis revealed that the respondents who own private transport, also patronize public/private transport companies because their vehicle were not in good condition, and that many factors such as political, economic, social, and technological made them to be off the road at the time of the survey. The paper suggests that government must totally support the informal and formal public transport sectors (private transport companies) by providing well-articulated policies to improve the performance of operations and services.

Key words: Partransit, formal, Informal, public transport, passengers, socio-economic and vehicles

INTRODUCTION

The necessity for people to meet social and economic needs often results in increasing transport demand (Fadare and Salami, 2004). From the record of Raft (1918), it is evident that man has been involved in the transportation of foods, materials, information and other services from prehistoric times. By so doing people have used favourable routes to accomplish varying movement demands (Canoe, 1972). Orski (1975), however noted that urban transportation problems started with increasing urbanization, population and industrial development. Arising from this, the demand for public transport became inevitably high, particularly where many households were constrained to own private automobiles. In a developing country where people are more dependent on the automobile, the rates of traffic congestion, pollution and accidents are high (Huntersville 1975).

Research has revealed that, the demand for public transport is dependent on two major factors:-

- i). The desire to make a particular trip at all and the drive to do so by public transport, and
- ii). Possibly the characteristics and nature of public transport modes that are available (Thomson, 1969). These two factors found to be influenced by individual socio-economic characteristics. In essence, choice of mode or the demand for public transport is influenced by sex, education, age, car-ownership, employment, income, type of work, cost of trips, and the nature and characteristics of available modes (Fadare, 1998; Hazayyin and El-Hawary, 1984).

The main goal of this paper therefore is to examine the impact of socio-economic characteristics on formal and informal public transport demand in Kwara State, Nigeria.

Formal public transport

Formal public transport system is high passenger occupancy vehicles, which are usually provided by government and other government and non-governmental agencies at users' costs in the form of fares. Formal public transport system is deemed significant because of the following reasons;

(i) The growth of private car-use tends to intensify congestion costs, environmental hazards, energy costs, which are socially and politically unacceptable.

(ii) For reasons of age, disability or poverty a large proportion of the population may never own private vehicles hence there is need to provide public transport for them (Passweel and Reeker, 1978 and Hay, 1984).

The supply of formal public transport vehicles varies from place to place all over the world. Major cities in the developed world are known to operate relatively sophisticated public transport systems, such as tramway, underground metro system buses and trains. In many advanced countries, the supply of public transport far exceeds the demand for it. For example, United States and most European countries subsidize transit passengers to attract people to use the modes (Pulcher, 1988). However, in less developed countries, the supply of public transport is far below the demand for the mode. Furthermore the public transport systems are grossly mismanaged and in most case inefficient. In Nigeria Ngoka (1988) noted that corruption, nepotism, favouritism, mediocrity and the average Nigerian workers' lackadaisical attitude to public work, have hampered, efficient public transportation services. Apart from the above, social, psychological problems, economic problems, confronting the public transportation management in many states of Nigeria also had a negative influence on the transport system in the country. The supply of formal transportation modes was grossly inadequate, and the Structural Adjustment Programme in Nigeria has made the situation even worse (Adeniji, 1983).

Informal public transport

The relative short fall of the conventional public transport in many countries led to the consideration of a novel innovative mode of operation now known as unconventional or Para transit as the case may be (Orski, 1975; Nutley, 1988). This has been the case in places where public transport supplied is insufficient to meet the travel needs of the population. In Nigeria, the private sectors is involved in the business of procuring different types of vehicles that are believed to be cost effective in meeting peoples demand for mobility. Informal public transport modes vary in size, type and operation from place to place all over the world. In Madras, Caracas and Delhi; Duto and Pedicab, bicycle, rickshaw, lorries and hand cast are informal transport modes used for goods and passenger movements (Parker, 1979; Plumber, 1979). In the U. S. A. the informal transport modes are in the forms of jitney, dial and ride, subscription bus, vanpool, shared taxi and auto rapid transit (Kirby et al., 1975). In Buenos Aires, Microbus, a form of informal public transport mode is used for 54% of all trips and 75% of public transport trips (Roth, 1984). Barreth (1985), reported that 50% of the trips made in Calcutta, 41% in Sao Paulo, 23% in Rio

de Janeiro in 1980 were made in paratransit modes.

From the studies carried out on the public transport vehicles in Nigeria, the popular modes of public transport are taxis, minibuses (locally called *danfo*) and adapted vehicles which were built on truck chassis, locally called either *Molue* or *Bolekaja*, and the conventional buses to some extent (Hawkins, 1958; Adeniji, 1983a, 1983b, 1983c). The paratransit modes and their operations have common features and characteristics in most of the places where they are operated. For example they offer personalized services, particularly for passengers going to specific directions or places. Another common feature observed is that informal public transport vehicles offer more flexible services than mass transit. They offer more convenient door-to-door services or drop passengers on request at specific un-predetermined destinations. Inadequate vehicle maintenance, neglect and desire to maximize profit as much as possible resulted to standard of services and over-use of vehicles. Consequently many of the vehicles used as informal public transport are noisy, smoky, rickety and jolty, which pose specific environmental problems to the road and none road users (Fadare, 1990).

Thus, the system works although at a considerable risk to the operators and high cost to the users. People patronize them because the household budget is too low to secure alternative modes and the available formal transport vehicles are too few to accommodate the moving masses. The informal transport services provided by *gbakas* in Cote d'Ivoire in 1983 had a daily traffic of 15,000 vehicle trips that carried about 200,000 passengers on two main routes adjacent to the city centre, while the public company carried 160,000 passengers on the same routes. Since 1980, the service provided by the informal sector on these routes has jumped by 75 percent in one and 21% on the other (Lehuen, 1983).

The costs of *gbakas* per seat – kilometer were roughly similar to the costs for the public standard buses. The public service operates with a heavy deficit, whereas the privately owned *gbakas* were making comfortably profits. The difference in performance especially in terms of revenue generation could be attributed to more strenuous working conditions of the *gbaka* employees, who ran three times as many vehicle – kilometers more than the public bus employees, and to higher loading factors, which average 73 – 85% a day, compared with 45 percent for the public bus company (Francis, 1989). In Khartoum, there is non-availability of spare-parts for the locally assembled vehicles known as *bakassi* because of their box-like appearance. As a result, passengers have to be on waiting line for hours and consequently there existed intolerably crowded conditions (Wynn, 1981).

RESEARCH METHODOLOGY

For the purpose of this study, Ilorin, the administrative seat of Kwara State, Nigeria was chosen. New commercial and residential activities are springing up in all

Table 1. Socio – Economic Profile of Commuters/Passengers

	Parameters	Relative Frequency (%)
(i)	Gender	
	Male	65.70
	Female	34.30
	Total (%)	100.00
(ii)	Age	
	Less than 15	10.10
	16-30	47.10
	31-45	30.10
	46-6	10.60
	Over 60years	2.10
	Total (%)	100.00
(iii)	Educational Level	
	No formal education	10.30
	Primary School	8.90
	Secondary School	33.80
	Post Secondary	47.00
	Total (%)	100.00
	(iv)	Occupation
Company employee		20.60
Civil Servant		10.00
Teaching		8.30
Students		24.00
Self		21.30
Employees		
Unemployed		15.80
Total (%)		100.00
(v)	Income Level (N)	
	Up to 6,000	42.50
	6,100-9,000	24.70
	9,100-12,000	15.30
	12,100-15,000	10.00
	Above 15,000	7.50
	Total (%)	100.00

Source: Field Survey, 2005.

areas of the town. The data on which the study here is based were collected from a total of 300 respondent commuters contacted to indicate among other things their usual mode of travel to work, proportion of income, cost of trips, age and other factors. The sample was drawn from four strategic areas believed to be homogeneous in terms of density, environment, quality of transport enterprises and perceived socio-economic characteristics of the people in the area (Fadare, 1993). The sampling method(s) adopted in the selection of respondent commuters for survey were purposive and incidental sampling

techniques. The total number of copies of questionnaires completed was 256 out of 300 that is, 85.33% response rates were analyzable and provide a basis of discussion in the paper.

RESULTS AND DISCUSSION

Survey findings of commuters/passengers in both formal and informal public transport

The socio-economic characteristics of commuters are analyzed in terms of their gender, age structure, educational background, occupational categories, income level and the proportion of monthly income spent on transport.

The observed socio-economic characteristics of respondents, which were considered for the study, are presented below:

The gender breakdown or sex characteristics of respondents' shows that 65.7% were male while 34.3% were female. This should however not be interpreted to imply that there are more male than female commuters in study area. It simply reveals that more male than female commuters responded to the questionnaire (Table 1).

Table 1 reveals that the analysis of the age structure of commuters in the sample shows that 10.1% were less than 15 years, 47.1% were 16 – 30 years, 30.1% were 31-45 years, 10.6% were 46 – 60 years, while 2.1% were over 60 years. This reveals that 87.7% of the respondents were within the working age group of 15 - 60 years, and possibly explains the predominance of work trips in the analysis.

About 10.3% had no formal education, 8.9% had primary education, and 33.8% had secondary education while the remaining 47% had attended either colleges of education, polytechnics or Universities. The distribution reveals that majority of the respondents (89.7%) had acquired one level of education or the other (Table 1). This presupposes that they were generally able to appreciate the need to make use of either or both public and private transport companies' services.

Disaggregating the respondents into their occupational categories indicates that students, the self- employed and company employees predominated. Table 1 reveals that about 90% were unemployed which perhaps suggests a low accessibility of unemployed to private transport companies due to inability to pay the slightly high fare compare to subsidized public transport.

The analysis of income level of commuters reveals that 42.5% earned up to ₦6,000 per month, 24.7% earned ₦6,100 - ₦9,000; 15.3% earned ₦9,100 - ₦12,000, 10% earned ₦12,000 - ₦15,000 while only 7.5% earned over ₦15,000 (See Table 1) . In the past, especially before the advent of Structural Adjustment Programme (SAP) employees earning at least ₦6, 000 per month would normally own private/personal cars while this implies that since real income in terms of consumers' purchasing power was very high and car advance system was then well in place. Cost of procuring a motor vehicle was with

Table 2. Proportion of Income Commuters Spent on Transport

Proportion of Income Spent	Relative Frequency (%)
Up to 10%	37.00
11-20%	30.00
21-30%	22.00
31-40%	4.00
41-50%	3.00
More than 50%	4.00
Total (%)	100.00

Source: Field Survey, 2005.

Table 3. Vehicle ownership distribution

Ownership of Transport	Relative Frequency (%)
Yes	17.80
No	82.20
Total (%)	100.00
Types of Vehicle Owned	Relative (%)
Bicycle	1.50
Motor Cycle	14.50
Motor Vehicle	20.30
No Vehicle	63.70
Total (%)	100.00

Source: Field Survey, 2005.

in the reach of this group of workers.

Meanwhile, since the inception of the Structural Adjustment Programme (SAP) in Nigeria in June 1986, the inflation has skyrocketed thereby greatly eroding the real income of consumers (Olanrewaju et al., 1985). Thus, Nigeria's real per capita income declined more than three folds from over US\$ 1,000 in the early 1980s to about US\$ 3000 by the early 1990s. The current economic situation has turned many marginal car owners into Public/Private riders. The emerging trend is that many people, regardless of their income level, now depend on public/private transport services for mobility as car ownership increasingly becomes out of reach of the masses. This had led to a rapidly expanding demand for public transport services.

Proportion of commuters' income spent on transport

Further analysis in Table 2 reveals that 37% of the commuters spent up to 10% of their monthly income on transport, 30% spent 10 - 20%, while the remaining 33% spent over 20% of their monthly income on transport. Included in this category are commuters who patronize high priced modes such as taxis, car hire and paratransit such as *KabuKabu*. This finding confirms the high cost of transportation in developing countries often underscored in the literature and has a serious implication for the wel-

fare of commuters in the study area. The proportion of income spent on transport is sufficiently high to put the other essentials of human survival (housing, feeding and clothing) at stake.

Transport characteristics of commuters

The transport characteristics of respondents were analyzed in terms of vehicle ownership and public transport patronage.

Table 3 reveals that only 17.8% of the respondents own one form of private transport or the other (motor car, motor cycle or bicycle) . About 20% own motorcars, 14.5% own motorcycles while 1.5% own bicycles. The remaining 63.7% depended entirely on public/private transport for their mobility needs.

Further investigations revealed that the respondents who own private transport, also patronize public/private transport companies because their vehicle were not in good condition, and that many factors such as political, economic, social, and technological made them to be off the road at the time of the survey. Most of the vehicles had been in that state for some months prior to the time of survey; due to inability of the owners to effect the necessary repairs as a result of financial constraints.

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