Gender perspectives in travel behaviour of motorcycle passengers in Nigerian intermediate cities

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ABSTRACT: Although provision of transport services often de-emphasises the gender dis-aggregation, access to contemporary mode of transport seems to pose constraints on the physical mobility of women within the cities in Nigeria. The use of motorcycle as important means of public transport shows greater proportion of the female urban trip makers are becoming disadvantaged. With many more people finding it difficult to maintain their vehicles and other means of private transportation, it is argued that the use of motorcycles would further compounds the mobility and accessibility problems of women in the cities.

The paper reveals that females frequently use motorcycle mode for long and short-distanced trips more than males and that the use of motorcycle has significant effect on the pattern of dressing of women. More importantly, two of every three passengers that have motorcycle accidents are women. The paper suggests sustainable public transport systems that cater for all social groups.

1 INTRODUCTION

Planning for transportation in different parts of the world has not been gender neutral. This is based on the assumption that male or female, transportation services are for all. Obviously and historically, there might not be need to be gender specific when planning for transportation services. However, recent events show that there is indeed the need for gender consideration in the transportation planning process, particularly where there has been high level of disparities in access to services.

Many policy discussions on development (recently assuming poverty alleviating) strategies, particularly in sub-Saharan Africa have de-emphasised the gender disagggregation of the access to activities that pose serious constraint on the physical mobility of women in the city. This is not to say some of these strategies in the continent have not been gender sensitive. However, many of these strategies have been restricted to female education, on and off farm labour and access to capital to the mere neglect of access to basic forms of transport in the cities. This in a way is not unconnected with the lack of understanding of the fact that, there have been a noticeable increase in female labour force participation and the increase in the volume of trips generated by women in the past decade. The lack of understanding of women's travel pattern in spite of their role as primary caretaker of households and family obligations generally varies significantly comparable to men. This observed roles differentiation and increase work force participation of women has serious implications for access to various mode of public passenger transport systems in the cities. At the aggregate level, differences exist between men and women in terms of reasons for travel length and frequencies of trips, mode choice and the complexity of trip making (Schintler 2001). The differences must be taken into consideration when developing appropriate transport policy and provision of transport related services.

This paper is based on a pioneered study on gender perspectives in mobility crisis in the Nigerian cities. The paper explores some differences between men and women in terms of their use of motorcycle as public transport mode of transport in four (4) Nigerian cities. The paper primarily examines the frequency of trips using the use of motorcycle, sensitivity of the passenger to male ridership of the passenger mode of transport and differences that exist along gender lines in the accident rate of the use of motorcycle. The paper draws some conclusions on the need to address the sensitive issues on public transport systems.

2 METHODOLOGY

This paper is based on larger study on gender differentiation in travel behaviour of motorcycle riders and passengers in Nigeria cities. The study was conducted to obtain information on the social-

economic characteristics of the passengers of motorcycle as public transport mode in the four (4)-selected cities. In addition, data were obtained along gender lines on frequency of trips and rate of accident, reasons for using motorcycle, effect of the use of motorcycle on mode of dressing and overall impact of the use of motorcycle in achieving basic objectives of trip generation.

The study is based on household survey in four major intermediate cities in Nigeria between 1999 and 2000. 3600 respondents in the four (4) cities were sampled using the questionnaire as the instrument of survey. About seventy percent of the respondents indicated that they depend on motorcycle as means of urban public transport for feeder trips to other public transport services or as a dominant public transport service. The city selected are Abeokuta (in the southwest, having a population of about 400,000, 1999 estimate); Ijebu-Ode (also in southwest, population 166,000), Abuja, the federal capital (located in the central part of the country, population of 650,000) and Jos (in the north central part of Nigeria, population 800,030). The choice of the cities was based on fact that they are intermediate, defined as having population of between 100,000 and 1million people and have significant proportion of urban trips made by motorcycle (Ogunsanya & Galatima 1993; Oyesiku 2001).

3 EMERGENCE OF MOTORCYCLE AS PUBLIC TRANSPORT MODE

The global economic recession and the fall-out of the structural adjustment programme between 1987 and 1993 in Nigeria have greatly affected the purchasing power of the government and the populace to replace existing public transport fleets of buses and taxis.. By the late 1980s the transportation sector of the economy began to feel the impact of the steady drop in the supply of transport services and the mobility problems started assuming a crisis dimension.

Adeniji (1987) stress that by mid 1980s most of the publicly owned public transport companies were operating at a loss and far below capacity, partly because many of the buses have broken down and spare-parts were often short in supply. In addition to these were problems of revenue leakage, particularly through misappropriation of funds, over-staffing, undue government interference and poor monitoring and evaluating the performance of government initiated public transport agencies (World Bank 1990). Oyesiku (1996) noted that in spite of the federal and state governments huge investment in public transport services provision, there are still shortage and in-adequacies of public transport services compared to the surging demand in many urban centres. As a result of these inadequacies of government operated and controlled public transport companies there emerged other modes of public transportation among which are the motorcycle and tricycle (auto-rickshaw).

The use of motorcycle for public transport is not a new commercial public transport system in Nigeria. It has being the common mode of inter-city transportation in most riverine areas of the country. In the dispersed settlements of eastern states, the use of motorcycle as a mode of transportation cannot be waived-off simply because of it's immeasurable role in the inter-rural and rural-urban movement or transport of goods, people as well as commercial services. Invariably, motorcycles have now invaded the suburbs and inner cities, towns and local areas of the country as big commercial transport business (Fasakin 2001).

Despite the general acceptability of the use of motorcycle as a mode of transport in all cities, the para-transit public transport system is still being viewed as a temporary phenomenon. It has equally not been receiving attention in studies and analyses by many researchers in generally and government urban transport management programmes in particular. This lack of interest over-shadows the un-perceptible observation of distinct behavioural differences in the use of motorcycle as a mode of travel by both gender. Before the discussion on this distinct differences, it is important to highlight the major reasons for the emergence of the motorcycles as urban public transportation service.

Motorcycle public transport in Nigeria, as in many West-African states, has come to stay in the cities and has gradually become a part of the public transportation system. This is due to:

(i) Inadequacy and ineffectiveness of the conventional modes of transportation such as the buses and taxis, and ferry and train in very few cities. The overland modes have been unable to provide a door to door services, more so that there were no defined bus stops and specific public transport routes.

(ii) Larger proportions of the urban road network are unpaved, while as much as sixty percent of the paved roads are in poor condition (Torres Martinez 2001). This situation invariably makes it difficult for commercial motorists link several routes and access to many activities areas. Whereas, motorcycle operators can easily manoeuvre the bad roads.

(iii) Adverse economic situation of the country that has eroded purchasing power of the working population makes it impossible for many to afford a personal vehicle. In addition, exorbitant cost of new and used imported vehicles and their spare parts make operation of commercial public transport by buses and taxis to be concentrated to areas having paved road network and easily accessible.

(iv) Preference of the populace for faster means of transport service in the face of poor road condition and persistent traffic congestion.

(v) High level of unemployment and underemployment provide the impetus for the secondary and university graduates to earn a living and a steady income. There is no policy on who should operate commercial motorcycle service, as such there is an easy entry for operators of motorcycle. Most motorcycle operators get involve in motorcycle service just to secure a temporary employment.

(vi) Uncontrolled development at the settlement frontiers of the cities and poor management approaches to curtail limp-frogging of physical development activities. The rate at which new settlements emerge with all types of economic activities far outstrip existing moribund development plans and manpower to monitor physical developments are inadequate. These activities generate trips that require transport services. In absence of conventional public transport services, the motorcycle operators quickly fill the gap and have a field day in determining fares and types of services to render.

4 GENDER AND MOBILITY

Gender as used in this context refers to the culturally specific pattern of behaviour either actual or normative which may be attached to sexes. Gender distinguishes between masculine and feminine and is culturally determined and highly variable. It does not necessarily refers to biological differences as in the case of sexes (Andrews 1982; Oppong & Abu 1987). The term also refers to socially created distinction between femininity and masculinity, while the term sex is used to refer to biological differences between men and women. Thus, development studies explicitly takes into account the socially created gender structure of the society and therefore articulate commitments and strategies towards the alleviation of gender differentiation or inequality in the short term and towards its removal in the long run. The role of transport in ensuring effective spatial interaction and therefore minimise the gap in the spatial inequality in accessibility to goods and services can only be appreciated through a study on which this paper is based.

The activities of women in terms of mobility or movement vary differently along gender lines. There are observable gender differentiation in travel behaviour in the space which can be traced to numerous factors that range from age, income level, societal perception, time, distance, family size, etc. Thus, due to some conditions faced by the female and which invariably make them to be viewed as subordinate, inferior and innately gentle being, there is the need to examine the inequality in travel behaviour over space and with respect to emerging unconventional transport system in developing countries.

Over decades, there have been drastic changes in transportation and thinking regarding gender and their well being (World Bank 1990). In developing countries, there have been very scantly researches on gender dimension in general until very recently. However, researchers focusing on women and transportation are very rare. Whereas, in advanced nations, there have been some researchers that view travel behaviour along gender lines as important in transportation planning.

Some of such researches on the travel pattern of women have focused on the home-to-work trips and highlighting only economic variables such as income as determinant of frequency of trips generated with little exploration of non-work activities. However, some recent studies have investigated non-work trips like recreation, shopping, and religion with non-economic variables being considered. Such non-economic variables include marital status, age and number of children as well as domestic obligations.

Tivers (1982 cited in Peet & Watts 1996) provided a modified perspective on constraints and access by women to facilities. She classifies constraints, not in time-space terms, but into categories of "societal" and "physical" constraints. The most important societal constraint, she argues, is the 'gender role constraint' that restricts opportunities for both women and men by pre-determining social roles. Physical constraints such as mobility, and activity patterns are seen as subject to societal norms. Pickup (1983 cited in Peet & Watts 1996) uses the concept of gender role constraint to show how women's access to job locations is reduced by social expectations about women's family role as well as their poor physical

mobility, which itself derives from their subordinate position in the family. Hanson and Hanson (1980) found that Swedish working women made more shopping and domestic trips than their spouses did and fewer trips for social and recreational travel. They also show that men travel 29 percent to work more than women. Men also have their work places were closer home and directionally biased than women.

. It is widely recognised that the mobility of many households has improved very greatly since 1945, due largely to increased car ownership. Nevertheless, many geographical studies do ignore an important aspect of this increased mobility, which is that individual mobility is not the same thing as household mobility. In particular, there is great difference between the levels of access to a car of women and men. Even in a household with a car, it is not available to the majority of women for use during the day. Women, and especially those caring for young children, have specific problems of mobility as they cannot easily substitute public for private transport. Consequently, this group of women particularly requires "local" facilities within walking distance.

The travel behaviour of male and female in some of the studies discussed shows that all employed female with children have different travel patterns or behaviour than comparable male. The travel pattern changes as the children in the family grow up. Moreover, single mothers have remarkably different travel patterns to either married female or male with children. With conventional public transport, service provision may be gender neutral. However, the operation of para-transit services, including motorcycle has been observed to put women at disadvantaged position. This observation is what is discussed in what follows..

5 GENDER DIMENSION OF MOTORCYCLE PASSENGERS

Of the total number of respondents in the survey, 29.9 percent indicated that they do not use motorcycle as a means of urban public transport. The description of the pattern of motorcycle users is based on the 2,781 respondents in the four (4) cities sampled during the study. The gender differentiation in the use of motorcycle is illustrated in Table 1. The passenger demand for motorcycle has no distinct gender differences, as there is equal number of male and female that use motorcycle.

Table 1. Use of motorcycle by gender

Gender	Respondents	%
Male	1488	53.51
Female	1293	46.49
Total	2781	100.00

Source: Authors' survey 2000.

In term of age distribution, users are concentrated between the ages of 18 and 40, but there is no significant difference between male and female within this age bracket (Table 2). Table 3 illustrates the point that single females make use of motorcycle than male. However, married males are in greater proportion than their female counterparts.

Table 2. Age distribution of Motorcycle passengers

Age group	Male	Female
	%	%
< 18 years	5.68	3.56
18 – 30 years	34.16	21.68
31 – 40 years	8.52	14.92
41 – 50 years	3.74	3.85
Above 50 years	1.40	2.48
Total	53.51	46.49

Table 3. Marital status of motorcycle passengers

Marital status	Male	Female
	%	%
Single	21.61	21.72
Married	29.05	18.97
Divorced	2.12	4.06
Widowed	0.72	1.76
Total	53.51	46.49

Table 4 shows the educational background of motorcycle passengers. It is interesting to note that highly educated passengers even make more use of this mode of public transport than less educated ones (Table 4). Again, there is no significant difference along gender lines in the distribution of the users according to their educational status.

Table 4. Educational background of motorcycle users

Educational Status	Male	Female
	%	%
No formal .education	3.20	2.12
Primary	1.08	2.95
Secondary	6.87	17.91
Diploma	17.44	4.28
University	24.92	19.24
Total	53.51	46.49

Table 5 illustrates the frequency of use of motorcycle for various urban trips. It is unmistakably clear that over 85 percent make use of this mode of public transport either daily or at least four (4) days in a week. The table also shows that more women make use of the mode on daily basis than male. This is attributed to the fact, female make shorter trips than male counterpart and do more of routine activities that include shopping, market and visit than the male. In other words, the females make frequent use of motorcycle and therefore have greater demand for this mode of public transport.

Table 5. Frequency of use of motorcycle by gender

Frequency	Male	Female
	%	%
Daily	24.85	25.31
4 days a week	20.14	15.35
3 days a week	8.16	4.06
2 days a week	0.00	1.76
Once a week	0.36	0.00
Total	53.51	46.49

Despite the greater demand by female for the use of motorcycle, the survey shows that this mode of public transport has an effect on their dressing pattern. This can be illustrated by a preference for 'yes' option in Table 6 taken from the survey in year 2000. Indeed, there is a clear gender differentiation in this regard. Of about 47 percent of the female in the survey, over 95 percent of them stressed that the use of motorcycle affects their mode and pattern of dressing. Whereas as high as 78 percent of the interviewed male stated that they are not affected by the use of motorcycle. Invariably, the commercial motorcycle services in the city have significant effect on the mode of dressing of most female users. It is observed that most especially the young ones have neglected the use of native or traditional dresses and have adopted the use of trousers for casual and occasional wears. Indeed, head tie, wearing of spectacles or glasses and fashionable traditional wears are just not amenable to motorcycle riding as a passenger. Most women have to contend with the wearing of tight dresses and girdles on daily trips.

The reason for this is not far-fetched as passengers must appear and look smart and have the ability to adjust to any condition that may arise while on the motorcycle. It is perhaps in the course of wearing loose dresses and adjusting to the sitting position when just mounted motorcycle that many accidents occur. It takes a minute or two for female to adjust to sitting position and sometimes loose balance that result in accident.

Table 6. Motorcycle use having effect on dressing mode.

Having effect	Male	Female
	%	%
Yes	11.76	44.19
No	41.75	2.30
Total	53.51	46.49

The pattern of accident by the use of motorcycle deserves thorough attention. About 75 percent of the people involved in motorcycle accident are killed every year on Nigerian roads, while relatively few are indeed injured (Oyesiku 2002). Most of those that are injured have brain and chest injuries, while more than half of those killed in accidents involving all vehicles are motorcycle riders and passengers. The author also notes that through this faster means of transport for short distances and the poor condition of roads, motorcycle-passenger deaths have been on the increase between 1989 and year 2000 and the extent of fatality of the accidents on the rise yearly.

It is noteworthy that significant differences exist between male and female involvement in accidents (Table 7). More females have been involved in accident on three or more occasions in a year than males. The reasons for this is unconnected with explanation given in the previous paragraphs, particularly as related to more frequent use of motorcycle by female and traditional mode of dressing of the female that are not just suitable for motorcycle ridership. It is also important to note that the sitting position on the motorcycle that often placed the two legs of the women to the left of the motorcycle further exposes them directly in the direction of fast moving motor traffic and greater danger. Some-

times, making bends at roundabout and junctions simply throw the female passengers off the motorcycle.

Table 7. Frequency of involvement in motorcycle accidents.

Accident Occurrence	Male	Female
	%	%
Once a year	3.78	1.91
Twice a year	7.23	2.45
Thrice or more .a year	39.99	40.38
Never	2.52	1.76
Total	53.51	46.49

It is worthy to note that sometimes female passengers are usually in two or three in a group for a particular trip. This group-trip making is usually made up of members of the household especially with infants and toddlers. More significantly, the infant are usually at the back of the women and on several occasions, mother have to attend to any little discomfort arising from exposure to externalities of urban traffic. In course of doing this, they became unstable and put the life of both the toddlers, usually sandwich between motorcycle driver and themselves in danger. Table 8 illustrates the gender differentiation in the number of people in a group making use of motorcycles for a particular trip.

Table 8. Usual group size on a trip

Group size	Male	Female
	%	%
1 person	44.16	4.03
2. persons	8.67	13.35
3 or more . persons	0.68	29.09
Total	53.51	46.49

The social costs inherent in the road fatality involving the use of motorcycle as urban public passengers transport comprise of material damage, productivity loss, and medical cost. Since the women are to a considerable extent in charge of family productivity and production activities and they are economically disadvantaged in relation to their male counterpart, the social costs in motorcycle road transport are extremely high and the impact this has on the family structure is very great.

Moreover, the physical damage to children (infants and toddlers) who often accompany the on trips make the safety cost in motorcycle transport extremely very high. It is in this regard that there is an increasing awareness for effective strategies to cope with the negative externalities of motorcycle passenger transport systems and to ensure that the mode of public transport is a sustainable one in the continent. Finally, the reasons for the use of motorcycle for urban trips are shown in Table 9. Though there are no significant differences between male and female, the latter indicated convenience in preference to flexibility and availability. Of course, convenience has overriding implications, some of which have been earlier highlighted. The poor conditions of roads, which hinder extensive use of taxi for public transport in many parts of the cities do not significantly affect the services of motorcycle operators. They are able to manoeuvre their ways through the bad roads and also less affected by traffic congestion because of their flexibility and disregard for the simple conventional traffic size and regulations. Though riders and passengers are exposed to the external cost and difficulty of traffic congestion particularly, environmental pollution and fatalities, they often make up for this through the fastness of their operation thereby saving sometime in traffic congestion. Though there is need for thorough research in assessing the trade off between times saved in traffic congestion and environmental pollution and fatalities. It is abundantly clear, that in attempt to save time, many riders and passenger have been exposed to greater danger, arising from exposure to air pollution, noise annoyance and fatality. Indeed, what is gained by time is a matter of share luck to be alive.

Table 9. Reasons for the use of motorcycle for urban trips.

Reasons	Male (%)	Female (%)
Cheapness	2.34	1.98
Fastness	3.67	2.88
Efficiency	1.55	1.73
Safety	0.00	0.00
Availability	10.25	8.85
Flexibility	9.82	4.82
Convenience (door-to-door)	25.89	26.25
Total	53.51	46.49

6 CONCLUSIONS

Lack of awareness on gender issues has meant that researchers have failed to ask whether the location, type and quality of facilities provided reflect or rein-

force patriarchal relations. Likewise, they have failed to examine how systematic differences between women's and men's mobility are related to differences in their economic and social power. Thus, the orthodox approach of planners to problems of accessibility, which takes types of facilities for the mobility of different groups as given, offers only an incomplete analysis.

This paper has discussed how gender relations affect the particular way in which women's access is limited by distance and mobility constraints, by the cost of facilities or travel, by incomplete knowledge of opportunities, or by restrictive assumptions about gender roles which are built into service provision. The downturn in the economy of the country has made mobility more difficult for all, but most female. Thus, the use of motorcycle (Okada) as a means of public transportation by female in the cities is a serious issue for concern as most motorcycle accident in the metropolis involved female. Women also make frequent use of motorcycle more than male due to the nature of their trips that are usually short and their family and child rearing roles. During their trips on motorcycles, they are more likely to be more than one passenger and thus becoming susceptible to having accidents. As Cheater and Gaidzanwa (1996) noted, women urban travel pattern vary significantly with the age of their youngest child. For instance, all employed women with children make more trips and have different travel pattern compare to men. Thus, the travel pattern of women changes as the child in the family grows up.

Furthermore, ridership of motorcycle in the selected cities has affected greatly the mode of dressing of most female users. As most female respondents confirmed that motorcycle services has changed their mode of dressing: especially from traditional dressing pattern to the western (foreign) dress. Observation shows that most female users usually put on jeans, underwear girdles and tight shirts and blouses.

The emergence of motorcycles for commercial public transport is an attempt to provide local services, though without conscious transportation planning control in many towns, cities and their unplanned suburbs. Even then, the services provided are still inadequate in terms of quantity and quality. In many unplanned areas of the cities the situation is often far worse. Provision of local services or improvements to local mobility are however, only partial (and often contradictory) solutions to women's problems of access. Indeed, such 'solutions' may only present further problems by reinforcing women's isolation and restrictions in dominantly residential environments. There must be equal access to transport services that is safe and comfortable for all. Commuters are indeed going through mobility crisis in Nigeria and with widening gap between demand for public transport and provision of buses and other commercial vehicles, there is the tendency to depend on motorcycle as dominant mode of public transport in many areas of the cities..

More people are living in urban centres and the cities are getting larger especially in the developing countries with limited control on physical development. The increase in the population and physical development have led to greater economic activities that in turn lead to increasing demand for transport and the wealth that this creates results in higher use of cars, vans and trucks. A prominent outcome of this is road congestion with its economic costs and environmental damage. In the longer run, increased use of private transport encourages more dispersed settlement patterns which require more energy to sustain, consume valuable land, produce more pollution and are more difficult to serve by public transport. As this cycle turns, it leads to less and less sustainable urban transport systems.

Addressing the problems of gender differentiation of motorcycle users in Nigeria cities and that of motorcycle transport service in general, a sustainable urban transport should be adopted. Though there is no universal definition of sustainable urban transport, but transport sustainable development in this regard should start with comprehensive transportation planning for the cities. As it were, many cities do not have transport plans, neither do they have structural plans for the overall physical development and growth. Public transport services and other basic infrastructure are integral part of the physical and economic development of the cities. There ought to be a physical development plan for the cities along with provision of transport infrastructure, particularly paved roads within the residential areas and commercial districts. Effective development control of physical development activities is also a prerequisite to orderly city expansion, particularly within and around the suburbs and rural-urban fringes.

With specific reference to the use of male dominated motorcycle operators, curtailing the rate of accidents is dependent on the effective implementation of the regulation on the use of crash helmet. Though many motorcycle passengers, and mostly women too, opposed its use. They contend that putting on a crash helmet affects their mode of dressing just like riding on motorcycles frequently does. Some argue that the use of crash helmet is at variance with their culture and religion. Ironically, there is still no alternative to crash helmet if the pattern of demand for

motorcycle public transport services still persists and the need to reduce the rate of accidents involving motorcycle riders and their passengers remain the concern of researches and policy makers. Enforcement of this regulation requires consultation with all stakeholders, particularly the various women groups and motorcycle riders associations. The riders associations must be officially recognised and properly structured in the cites where they operate in order for the transport management agencies of the government have a target group to liase with. Activities of the numerous un-organised motorcycle transport owners' and riders' associations that have given room to illegal operation of faceless groups of operators must the properly co-ordinated. Obviously, this would be part of the envisaged urban public transport policy that is not in place in many cities.

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