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Full Length Research Paper

Gender disparity, susceptibility and mobility strains coping approaches in Nigeria

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The exploding rate of growth of vulnerable groups and transport insecurity in developing cities poses great challenges to planners and policy makers. In the light of this, the paper examined vulnerability and mobility stress coping strategies differentials among male and female in a developing city-Lagos, Nigeria. The study used primary data, which were obtained through a questionnaire survey of 356 respondents in Lagos. Indices of individual coping strategies and the weighted sum reflecting frequency and severity of respondents mobility stress coping strategies were used as a proxy for indicating the vulnerability of male and female respondents to mobility stress. Variables used include socio-economic characteristics such as number of vehicle in household, purpose of daily trip, number of trips, trip distance, travel time, income, age and travel difficulties. The result shows that female respondents were more vulnerable to mobility stress than the male. Sources of stress are basically associated with travel difficulties. There was higher prevalence of long- waiting at bus stop, prolong travel time, uncomfortable means of travel and expensive cost of travel among female respondents. This implies that female respondents had less access to and utilization of comfortable services transport and are therefore more transport -in secure than their male counterpart. The paper emphasis the need to improve the current state of transport infrastructures in the country. Female and their counterparts (male) need transport enlightenment in order for them to be able to cope with stressful mobility conditions.

Key words: Vulnerability, stress, mobility, coping strategies and transport insecurity.

INTRODUCTION

Over the course of last decade, gender analysis is becoming a major issue in transport sector; as the huge cost of transport externalities to national economies and individual households becomes increasingly apparent. Indeed, transport planners and policy makers all over the world have increasingly recognized the fact that, the differences in travel and activity pattern between men and women are a central and recurring feature in transportation systems all over the world (Peters, 2001). Despite improvement in building women's capabilities, gender gaps in efficient means of travel continue to persist (Oyesiku, and Odufuwa, 2002; Asiyanbola, 2007). This is often reflected in unequal opportunity and capabilities to access and utilize existing means of mobility (Okoko, 2007). Mobility disparities have serious implications on the livelihoods of not only the women, but also their families and the society at large (Odufuwa, 2007; Oyesiku and Odufuwa, 2002). In Sub-Saharan Africa, women have less access to transportation services than their male counterpart (Okoko, 2007; Odufuwa, 2007; Starkey et al., 2002). It should be noted that, the right to own, use and manage private automobiles or vehicle is often limited among Sub-Saharan African women (Odufuwa, 2007; Starkey et al., 2002).

A growing body of academic literature has emerged over the last few years addressing the complex relationships between transportation and gender, both in developed (Rosembloom, 1993; Hanson and Hanson, 1978 and 1985; Jenkins and Gregory, 1991; Peters, 1999; Schintler, 2001; Jones, 1990) and developing countries (Turner and Fouracre, 1995; Fernando, 1997; Grieco and Turner, 1997 and Grieco et al, 1996; Oyesiku and Odufuwa, 2002; Okoko, 2007; Odufuwa, 2007;

Overton, 1994; Asiyanbola, 2007). Matalon (1992) confirmed that, the travel behaviour of individuals is not uniform and he attributed this difference to sex (gender). Okoko (2007), expantiate further that, difference in travel behaviour of men and women stems on the fact that women are vulnerable to a number of factors in their choice of travel (mode or in their travel behaviour). A study by Fadare and Morenikeji (2007) on gender bias in intra-urban trip pattern in Niger State, Nigeria, shows that, there was a remarkable difference in the travel behaviour of men and women. Also, Hanson and Hanson (1980) noted that women travel less frequently than men and they travel shorter distances than men do and rely on bus (public transport) to a greater extent than men. Despite the transport bias against women, scholars emphasized that, there would be an increase productivity, improved nutrition and health for children and the society at large when gender discrimination against women is eliminated in terms of accessibility (Blackden and Wodon, 2006; Okoko, 2007).

While different studies have examined various aspects of the urban transport and gender, hitherto, there is no study in the developing country; and in Nigeria in particular that has empirically examined the mobility stress coping strategies. Yet such a study is very pertinent as it would inform decision-making on the provision of attractive urban transport in the developing countries. In this paper, an attempt is made to fill this identified gap using the former capital of Nigeria- Lagos as a case study. The main objective of this study is to examine vulnerability and mobility stress coping strategies differentials among male and female. The need for gender analysis of vulnerability and mobility stress is based on the fact that men and women perceive transport security differently and respond to it differently; indicating that the causes and consequences of transport insecurity are gender-related; (Oyesiku and Odufuwa, 2002; Okoko, 2007; Odufuwa, 2001; Asiyanbola, 2007); study of this type will guide policy makers in knowing the more vulnerable groups in the society to which future intervention strategies would be directed.

METHODOLOGY

The study first examined the literatures and complemented by surveys in the former capital of Nigeria-Lagos to examine vulnerability and mobility stress coping strategies. Lagos State is located on the South-Western part of Nigeria, with a coverage area of 335,000 ha (3,350 sq.km) (Figure 1): which is just about 0.4% of the country's total land area. It should be mentioned that, 608 km or 17% out of the state's land area comprises of lagoons and water bodies. The state was selected for this study for certain reasons: it has a population of 9.1 million (NPC, 2006), consequently high level of motorisation and this is heterogeneous with most parts of the nation being represented. Secondly, despite the relocation of the country's Federal Capital to Abuja, Lagos still remains strongly the commercial capital of Nigeria. It harbours almost all the headquarters of the multinational companies in the country. Data used in the paper was obtained from a questionnaire survey of 356 respondents; drawn from different socio-economic sectors in Lagos state.

The choice of this sample size was influenced by the fact that some respondents particularly female were uncooperative during the study. Respondents were drawn from different residential density areas and different socio-economic groups using the multi-stage sampling method. Adopting the sampling procedure in social research (Bailey, 1982; Babbie, 1998) and ability to arrive at valid conclusions and generalizations (Okoko, 2007); a non-probability sampling technique called purposive or judgmental sampling was also adopted to sample 356 respondents. Is worth mentioning that, in purposive sampling, researcher relies on his judgement about which respondents to choose; and picks only those who best meet the purpose of the study (Okoko, 2007; Babbie, 1998 and Bailey, 1982) . This was necessary because some of the respondents had to be contacted in their places of work, at home and from urban traffic.

The questionnaire was designed to collect information on travel activities. It was divided into three parts. Part one probed into the socio-economic background of the respondents. The second part consist of some variables on travel decision, mode of travel, household vehicles, driving status, number of trips, transport cost, travel distance and difficulties. The final part was based on mobility stress and coping strategies of respondents, what is responsible for the stress and its implications to general livelihoods.

The simple proportions, percentages and cross-tabulation of key variables were done to analyse the data. The product moment correlation analysis was used to examine the relationships between socio-economic variables of respondents and their involvement in mobility stress. Also, the determinants of vulnerability of respondents to mobility stress was examined by applying an ordinary least square regression model to estimate 8 variables against the weighted sum reflecting frequency and severity of respondents coping strategies.

Conceptual and theoretical undertones

The growing emphasis on promoting sustainable means of transport as a means to enhanced livelihoods has over the years motivated conversation or discourse among scholars in different fields. Mobility and transport security of people is determined within the context of their livelihoods. In other words, people's capabilities and assets, is partly a determinant of their travel pattern. Livelihoods are considered to be sustainable if people can recover from stress and shocks without jeopardizing or destroying the natural resource base. Arguments have been advanced for the need to worry about the vulnerable (Wratten, 1995; Adereti, 2005; Meludu and Bajowa, 2008); but within the context of this paper, it is pertinent to understand; who the vulnerable groups are? Where they live? What are their peculiar economic circumstances and why are they vulnerable? Answering these questions is quite logical but important before designing policies that aim at the vulnerable. This will enhance the location and distributional strategies of policy makers and questions on who gets what and what goes where can be provided with sustainable responses for actions.

Vulnerability is a concept often used to describe household's position relative to poverty and economic stress (Wratten, 1995). In this paper, a broader view determined by households and societal resource characteristics (economic, political, social, demographic, psychological, transportation and environmental) and, in this case, their appropriateness in reducing the likelihood of mobility stress. Indeed, transportation sector is generally recognised as being in a state of crisis, particularly in Nigeria (Filani, 1988). Thus, mobility needs in Nigerian cities have continued to increase in recent time; and, transport supply falls below the demand. Therefore, transport shortfall is increasing vulnerability to mobility stress amongst different categories. For instance, high transport demands have

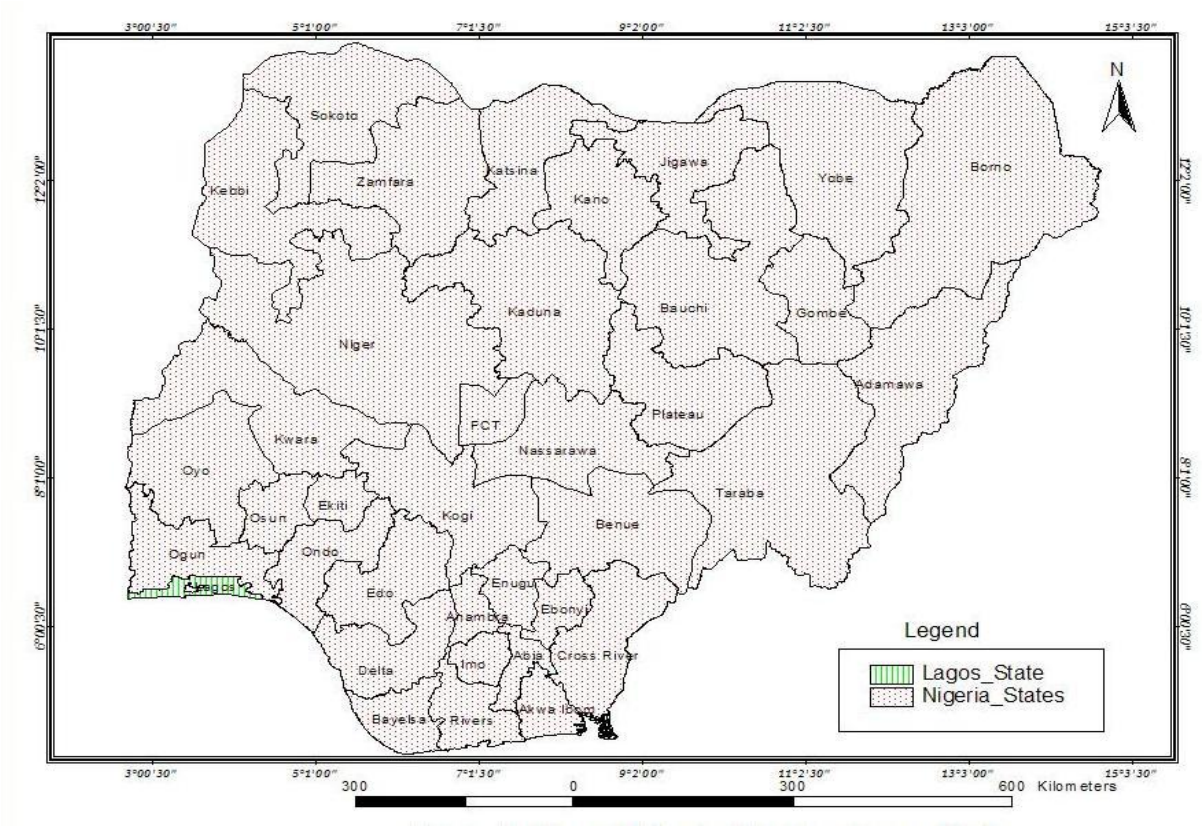

Figure 1. Lagos State within the context of Nigeria.
Source: Lagos (Nigeria); Microsoft Encarta online

encouraged the use of unconventional means of mobility (Adeniji, 1987, 2000; Asiyanbola, 2007). For instances most buses commonly refers to as "Danfos" or "Molue" are death traps, but commuters have no choice but to use the buses, because of the expensive taxi fares. Also worth mentioning, is the proliferation of motorcycle and autorikchaws in most parts of the city (Oyesiku, 2002; Oyesiku and Odufuwa, 2002). Though they are meant to complement the formal public transport and an avenue to get rid of poverty or make a living. They are however the easiest means to heaven. This stemmed on their reckless mode of operations and an avenue to commit crime.

It is interesting to note that, an individual is vulnerable if he/she is particularly open to adverse external events or shocks and cannot make the necessary adjustments to protect his/her self. It should also be pointed out that, some individuals may be poor and not vulnerable, this stemmed on the fact that, they are not affected by external events; or simply because they can readily cope with the changes in their environment. Similarly, others can be vulnerable but not poor. Meanwhile, vulnerability refers to a condition of living that is detrimental to the psychological condition of individual's communities and several groups (Odufuwa and Momodu, 2007). The mobility pattern of women in most cities worldwide is however similar, but worst in most African cities (Venter et al., 2006; Okoko, 2007; Peters, 2001). Thousands of women in developing world have few options but to travel by means that are appallingly or apparently poor. Women's mobility constraints have been recognised as having an impact on women's time, security and position in society (Venter et al., 2006). More generally, women's mobility constraints have been linked to lack of economic growth and social sustainability in households and communities, and as having an impact on the success of development strategies (Mbara, 2002) and (Arosanyin, 2000). Mobility stress can be viewed as a situation when all people at all times, have physical and economic difficulties to utilize comfortable means of mobility. This view integrates access to vehicles, availability and utilization and stability of means of mobility. These factors are interrelated (Filani, 1988). Having access to vehicle, for example, means little if poor transport infrastructure impinges on people's ability to utilize the available means of mobility. Likewise, earning income to purchase automobile matter less if insufficient transport infrastructure is available in the society and a functional transport system is irrelevant to those who do not earn income to purchase vehicle (Ogunsanya, 2002; Odufuwa, 2001). The concept of vulnerability in transport security or mobility stress free context refers to the propensity to fall, or stay below pre-determined transport/mobility security threshold in the future. Therefore, the term vulnerable groups is used to refer to both the potentially transport insecure and the mobility insecure segment of the society. These include the aged, children, women, illiterates and physically-challenged etc. Vulnerability is a function of exposure to risks/shocks and the resilience to these risks.

RESULTS AND DISCUSSION

As revealed by Hoddinott (1999), indices of household/

Table 1. Comparisons of coping strategies used to combat mobility stress.

Coping Strategies	Male (%)	Female (%)	T-test
Travel by Non-Motorised means	53.65	46.35	0.71 Ns
Readiness to high fare	38.48	61.52	1.30 Sig.
Cancellation of trips	33.43	66.57	1.27 Sig.
Travel in company of relatives	16.29	83.71	0.92 Sig.
Reduced number of trips	34.27	65.73	0.13 Ns
Purchase of private automobile	32.87	67.13	0.14 Ns

Source: Authors' Analysis, 2008.
Notes: Ns= Not Significant, Sig. = Significant.

Table 2. Determinants of Individual's Vulnerability to mobility stress.

Variables	Coefficients	Standard Error	T-Value
Age	0.1624	0.1539	1.05 Ns
Household size dependency ratio	0.1103	0.0523	0.28Ns
Level of Education	-0.1565	0.0248	-0.45 Ns
Access to private automobiles	0.0174	0.0327	1.14 Ns
Access to traffic education/ enlightenment	-1.1573	0.3276	1.25 Sig.
Household type	0.2147	0.1781	1.42 Sig.
Amount spent on mobility	0.0016	0.0002	0.43 Ns
Government traffic policy	0.2726	0.0963	0.06 Ns
Employment	0.2563	0.1458	1.53 Sig.

Source; Author's Analysis, 2008. Dependent Variables: Weighted sum from frequency and severity of use; Ns = Not Significant; Sig. = Significant; Testing at 0.05 level of significance.

individual coping strategies, directly captures notions of adequacy and vulnerability of households. In other words, the larger the number of coping strategies use; gives a reflection of poor and vulnerability to transport externalities. For instances, the higher the sum of the mobility coping strategies, the more transport or mobility insecure the society or individuals are. Table 1 show that female respondents used a significantly higher mobility coping strategies to mobility shortfalls compared to male respondents. Results further reveal that there was significant difference in the readiness to pay more transport fare, cancellation and reduced number of trips between men and women as a coping strategy to mobility stress. There was also significant difference in the number and mode of travel. There was however signify-cant difference between female and male respondents in terms of cancellation of trips in the last seven days and the utilization of less comfortable means of travel as coping strategies. The female respondents used more of this strategy and it implies that female were more likely to be insecure and more vulnerable to mobility stress or difficulties than the male.

Testing at 0.05 level of Significant.

Further analysis was done to examine the determinants of individuals' vulnerability to transport insecurity. To achieve this, model comprising 8 variables was estimated. Table 2 present the regression estimates for the determinants of individual vulnerability to transport insecurity. The table reveals that individuals became more vulnerable to mobility stress and transport insecurity as the age of individual, household size, dependency ratio increased. On the other hand, the respondents are less vulnerable to mobility stress as the education level, income level, status, number of private-automobile increased.

The implication that was deduced from this finding is that; male and female respondents that have average educational levels can effectively plan their daily mobility. In other words, levels of education, family status and access to private automobile have a relationship with mobility stress and transport insecurity. For the female respondents, high income level gives them the opportunity to secure a private automobile along with the driver; this will limit their driving stress and eliminate the struggle for unavailable public transport service. The male on the other hand, can easily fashion-out an alter-native, that is, a mobility stress coping strategy which their counterpart (female) cannot do. Interestingly, empirically tested hypothesis emphasized that, there is significant relationship between the marital status, in-come, household size, accessibility and traffic awareness programme and their involvement in mobility stress

Table 3. Correlation analysis of selected variables and vulnerability to mobility stress.

Variables	R	P	Decision(s)
Marital status	-0.14	0.09	Significant
Educational level	-0.10	0.06	Not significant
Income	0.16	0.02	Significant
Age	0.02	0.89	Not significant
Household size	0.19	0.02	Significant
Accessibility (distance)			
Availability of facilities	0.13	0.02	Significant
Traffic awareness			
programme	-0.01	0.79	Significant
	0.15	0.01	Significant

Field Survey: 2007-2008; Tested at 0.05 level of significance

(Table 3).

Conclusion

This study reveals that mobility stress and vulnerability to transport insecurity were higher among female respondents than the male. In other words, male respondents have more mobility stress coping strategies than the female. It should however be noted that, factors responsible for this scene can be partly due to bias in private automobile ownership and usage among men and women in the society. To reduce the level of vulnerability to transport insecurity among male and female, the educational level of individual should be increased. This will indirectly enhance the traffic educational level and transport management measures that individual can adopt. Also, personal income, access to improve public transportation services, amount spent on private automobile maintenance and transport infrastructure should be increased. Generally, rationales for action that pays more attention to gender in transportation have to be increased and convincingly voiced by scholars in our society. In actual fact, targeting women as a vulnerable or special group must be considered a valid intervention although not a permanent solution to mobility stress and transport insecurity.

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