

**Gender and Safety in Public Transportation: An Explorative Study in  
Lagos Metropolis, Nigeria**

**MASTERS COURSE IN URBAN MANAGEMENT  
AND DEVELOPMENT**

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## LIST OF TERMS- DEFINITION

<b>Gender:</b>	Differences of roles and travel experience of men and women in the society.
<b>Crime:</b>	Danger due to antisocial behaviours, assaults, theft, harassment, rape, etc.
<b>Safety:</b>	Freedom from crimes
<b>Vulnerability:</b>	weakness and possibility to fall victim of unwanted situations
<b>Trips:</b>	Movement from a point of origin to a destination using any available modes of travel
<b>Broken Window:</b>	Inadequacy of transportation elements or system
<b>Travel Environment:</b>	Distance from destination to and from bus stops, bus stops, in-transit
<b>Sustainable Transport:</b>	Transport system that takes care of present generation without affecting the transport needs of future generation
<b>Environmental backcloth:</b>	Social and legal characteristics of physical Infrastructure that are required to be examined in order to address issues of criminal activities
<b>Public Transport:</b>	Transport service render to users based on agreed fare, cost or charges
<b>Equity:</b>	Consideration or planning with the needs to users, fairness in resource distribution
<b>Availability:</b>	Adequate supply of the service when needed
<b>Oppression:</b>	Travel environment which through their vast scale and authoritarian nature diminish women identity
<b>Para-transit:</b>	Small passenger transport vehicles operating informally on a fare-paying basis.

## **Abbreviations**

<b>CST:</b>	Centre for Sustainable Transportation
<b>TRB:</b>	Transport Research Board
<b>GDP:</b>	Gross Domestic Product
<b>NPC:</b>	National Population Commission of Nigeria
<b>MDGs:</b>	Millennium Development Goals
<b>DETR:</b>	Department of Environment, Transport and Regions
<b>UNDP:</b>	United Nations Development Programme
<b>WCU:</b>	World Conservation Union
<b>UNEP:</b>	United Nations Environment Programme
<b>WWF:</b>	World Wide Fund for Nature
<b>WCED:</b>	World Commission on Environment and Development
<b>PCSD:</b>	United State Presidential Council for sustainable Development
<b>ESCAP:</b>	Economic and Social Commission for Asia and Pacific



## EXECUTIVE SUMMARY

Given the importance of the topic, it is surprising that apart from studies from developed countries; hardly any literature explores the gender perspective of criminal activities in public transport in most developing countries. This study was conducted in Lagos Metropolis (South Western part of Nigeria). Questionnaire, field observations and informal interview formed major research instruments. Data for the study were obtained through primary and secondary sources. The study addressed and discussed the question of how women are affected by unsafe or insecure public transportation services. Safety in the context of the thesis goes beyond freedom from accidents and impact of emissions, but it entails injuries, harassment, rape, assaults experienced by women when using public transport. The study was rooted within four objectives that include: (i) to theoretically examine the concept of gender, safety and sustainable public transport, (ii) examine the travel environment of women in the study area; (iii) identify types of crime experienced by women in public transport, and (iv) analyze the need for integrating a gender sensitive transport policy in Lagos.

The study was conducted in four Local Government Areas of Lagos Metropolis. The area was stratified into high, middle and low income density, based on the existing stratification status of the residents and population densities. Stratified random sampling and purposive sampling techniques were used to sample 95 female users of public transport – respondents; 15 males were chosen as a control group. Data collected were analyzed using simple descriptive statistics such as, frequency distribution, cross tabulation, percentages and ratios. In addition, more scientific evaluations such as correlation, regression and factor analyses were done to test the study hypotheses and draw valuable inferences from the analysis. Findings show that more women than men are afraid of crime when using public transport and above 70% of women sampled were victims of crime with serious impact or high intensity, when compared to men. Physical harassment assaults, sexual harassment, raping, pick-pocketing, kidnapping, robbery etc., were common crimes revealed in the study. It is disturbing to note that women compared with men are mostly affected by all types of crime ranging from pick-pocketing to rape or sexual harassments. Findings also show that public transport has “*led to death of innocent ladies who are victims of rituals*”. One other implication is that high rate of crime in public transport is grossly affecting the level of patronage of the service, thus hindering interactions and leads to loss of valuable properties. Most criminal activities occur while waiting for buses, “okada” (commercial motorcycles) etc. This finding highlights inadequacy in the design, location and management of bus stops in the study areas. Criminal activities in public transport have continuously affected the travel pattern and livelihoods of women. From the study; current situation of crime and fear of crime in public transport is a pointer to the urgent need for solutions to curtail or minimize this “wicked” mobility problem facing most users, specifically women in the study area, and other cities in the country.

Based on the empirical analysis some public transportation planning and management implications and policy recommendations for future directions were given. These include improving the performance of public transport service in Lagos and Nigerian cities as a whole as part of regional development policy; the effective design, location and management of bus stops; the establishment of Public Transport Police; partnering with private sector in design and maintenance of bus stops and the provision of other transport elements, integrating gender dimensions of the transportation planning and management should be accorded consideration in transport and nation development.

**Keywords:** *Gender, Crime, Sustainable transport, Livelihoods, and public transport*



## CHAPTER ONE

### INTRODUCTION

*“A sustainable transport system is one that, allows the basic access and development needs of individuals, companies and societies to be met safely; in a manner consistent with human and ecosystem health, and promotes equality within and between successive generations; is affordable, operates fairly and efficiently, offers a choice of transport mode, and supports a competitive economy, as well as balanced regional development and limits emissions and waste within the planets ability to absorb them, uses renewable resources at or below their rates of generation, and uses non-renewable resources at or below the rates of development of renewable substitutes, while minimizing the impact on the use of land and the generation of noise”- (Centre for Sustainable Transportation,2002)*

*“Development of a sustainable, efficient and effective public transport system is to a large degree related to the levels of safety experienced by commuters”- (Kruger, T and Landman, K, 2008)*

#### 1.1: BACKGROUND

Over the years, sustainable public transport has being viewed as not just a technical issues or questions, but as an inevitable need. This stemmed on the premise that, without adequate consideration of social, economic and political conditions of public transport service sustainable development cannot be realized (Litman, 2008; Fujii et al; 2009; Sohail, 2005 and Enyedi, 2002). In other words, sustainable transport cannot be said to be achieved if it is not coupled with an effective and efficient programme that enhances livelihood of people. Sequel to this discourse, there is need for improved transport infrastructural services as components required to achieve sustainable development. Interestingly, the significance of transport sector towards achieving sustainable development and as a component of sustainability have been stressed by scholars over the years. For instance, Owen, (1964), a renowned transport analyst, emphasized that “immobility perpetuates poverty”. This connotes that, transportation have a resultant effects on almost every human being in the course of their daily activities. Thus, it is rare to conceive a situation over space where transportation does not play a notable role in the life of any individual or society at large. Similar to this view, is the assertion of Geerlings et al, (2005), that “the issue of transport is partly a derived effect of the fulfilling of all sorts of needs, varying from economic needs to social needs”. This justified the fact that, transportation is a “derived demand” and there is “no escape from transport”. Sustainable transport system according to CST, (2002) forms a basic foundation that facilitates movement of goods and services in the present generation and capable to take care of incoming generations. In other words, it should be affordable, efficient, available, safe, and supports economic development. In recent time, passionate interest is being given to transportation and gender (women) as a vital element of sustainable development (Loukaitou-Siders, et al; 2008; TRB, 2004; Anand, et al; 2006, TRB, 2009)

Nigeria is a developing country of about 923,768 sq km (356,669 sq miles) surface area with the largest population (140million- 71.7million men and 68.3female) in Africa. Being a low-income country, it has population growth rate of about 3.2percent. The country is noted for oil production and agriculture activities. Oil export have override agricultural sector in the country in the past years. Oil exportation provides close to 20% of the country GDP, while about 95% and 65% foreign exchange and budgetary revenues comes from oil exploration and export<sup>1</sup>.

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<sup>1</sup> Nigerian Population Census, 2006

Geographically, Lagos is a notable city in South West of Nigeria; covering about 335,000ha (3,350sq.km), it occupies about 0.4 % land area of Nigeria's total land area. However, relatively close to 608km or 17% out of the state's land area is covered by rivers or water bodies. Lagos is a promising commercial centre of Nigeria. It has a population of 9.1million (NPC, 2006), and it is the major urban agglomeration state in the country. Also, it accommodates virtually all tribes of the country and often refers to as an heterogeneous city.

Surprisingly, and despite the important roles of the state to the economic development of the country at large, the state due to an array of reasons could not provide sustainable urban transportation services to commensurate with the rate of population growth. Urban public transport in Lagos is witnessing a relatively drawback because of the increasing demand for public transport services that outrage the supply and inadequate transport management in terms of policy framework among others. Public transport problems according to scholars over the years can be traced to rapid industrialization, unguided urbanization, collapsing infrastructure, inadequate supply and galloping demand. Apart from these, urban transport in Lagos is frustrating due to series of transport externalities that ranges from congestion, discharge of ambient air pollution and accidents etc. Inefficient, unaffordable, inaccessible unreliable and unsafe, crimes are disturbing issues grossly affecting public transport service in most Nigerian cities, particularly Lagos. The notable effects of these situations are; overcrowding, prolong travel and waiting time and poor security or safety. For instance, poor transport planning procedures and lack of transport policy framework that is not gender sensitive.

Women constitute an important proportion of the general population in the World. In most developing countries like Nigeria, gender dimensions of transportation planning and management have been one of the least considered aspects of urban transportation and development. Harassment, sexual assault and loss of property are huge threat faced by women when using public transportation and transport infrastructure in cities. Hundreds of thousands of women in Nigeria cities and other developing countries lack reasonable access to adequate supply of safe public transportation services (Odufuwa, 2007; Oyesiku, et al; 2002; Lynch, et al; 1988). The problem manifest in countless cities in Nigeria, literature shows that, most Third World cities in regards to public transportation offer little or no perspectives for women (Fernando, et al; 2002; World Bank, 2001 and TRB, 2006), and the general quality of life of women is substantially lower than the general population (Adereti, 2005 and Rakodi, et al; 2002). The Word Bank in recent time emphasized the need for gender concern and integration of mobility needs of women into transportation planning and management.

Most recently, Bus Rapid Transit System was introduced by the Lagos State Government to motivate people towards the use of public transport. This bold step is not only aiming at reducing the number of private automobile and congestion, but to provide safe, reliable/ flexible and readily available public transport for all. However, the prevailing concerns about crime, safety and security in the city and specifically in public transportation services needs to be given appropriate consideration in the approach. The widening social and economic disparity or inequality as well as the rising wave of unemployment, especially among young school leavers, have being attributed to be responsible for the accentuated wave of urban crime in Nigerian cities (Agbola, 1997). It can be deduced from this situation that, crime have gender, spatial and non-spatial distribution, which resultantly affects the general livelihoods of most people, particularly women. This however needs empirical justification. The fear of criminal activities and affection for security of life and properties in recent time are obviously a limiting factor to frequent and levels of usa of public transport (Levine and Wachs, 1986; Benjamin, et al, 1994 and Newton, 2004). It is important to note that, this issue is not limited to developing countries only (Kruger, et al; 2007; Brody, et al; 2008; Newton,

2004, Yavuz, et al; 2006); but the level or intensity of the crime differs greatly. For instance, According to Baker et, al; (2001), security in public transportation in Merseyside (UK) demands an prompt intervention through improvement of facilities. These according to them will safe guard the users and non-users of the service. It also revealed the fact that crime in public transport is not limited to developing cities like Lagos. Studies on gender issues in transportation planning connote moving or shift from thinking that women and men are unrelated phenomenon. However, both women and men need to be examined or considered in relation to dynamic, complex and parallel needs through which tasks and resources are allocated. This study however aims at examining the effects of criminal activities in public transport from gender perspective in Lagos, Nigeria.

## **1.2: STATEMENT OF PROBLEM**

Frequent announcements of various types of criminal activities in Nigeria public transport over the years have become a disturbing issue to users, non-users and particularly the policy makers. This have gone beyond local or national discourse, as International communities keep given warning notifications about the insecurity of Nigerian public transport services. For instance, the Times International of London, (1985) commented on the alarming rate of criminal activities in Nigeria. While, the Travel Warning United States Department of Bureau of Consular Affairs also gives warning statements about the insecurity of public transport in the country, particularly for the foreigners. For example, travelers were warned to avoid night travel, and about poor modes of public transport and infrastructure and driving conditions. More dishearten, is the fact that; the international communities ascertained the fact that Nigerian public transport service poses risks simply because of the possibility of criminal activities to effectively take place when using public transport service.

Threats to live while using public transport have become a disturbing issue to most Nigerians. These issues in recent time have dominated an array of debates involving policy makers and city managers. Presently, the situation has taken different dimension with the use of emerging public transport modes to perpetuate criminal activities and it makes live in most Nigerian cities like Lagos and other developing ones more frightening. It should be noted that, not only is the incidence of crime becoming more frequent and alarming, the nature of the crimes; especially physical assault, sexual harassment, pick-pocketing etc., have become more heinous. It has become a daily rhythm to people, often daily announcements of bolder and sophisticated crimes taken place in most cities appears not to spear any heads. Both the rich and the poor bears the brunt; but the fact worth mentioning is that, women who are the majority users of public transportation appears helpless in the face of crime when using public transportation in Lagos.

Women in most developing cities since the last decades, have being witnessing increasing numbers of threats to urban safety and security in public transport. It should be noted that, while some of these public transport menaces takes place or occurs in different forms, many have been a reflection of the nexus of inadequate public transport and differential capability to cope with the poor quality of public transport services. Safety and criminal activities pervading public transport services in most cities, have led to increasing discourse about how to mitigate it. Most women face the threat of insecure public transport and the possibility of sexual and physical harassment among others. These mobility problem have being on the increase in most Nigerian cities like other developing countries during the last few years.

In recent time, this causes great personal suffering, vast injuries and material damages and lost. It also place enormous burden on the livelihood of women as weaker sex in the

society. It is important to mention that only few women have the ability to withstand the constraints pose by inadequate supply and management of public transport in the city. In other words, the prevailing insured or unsafe public transport and travel or mobility differentiation along gender dimension interacts closely with urban livelihoods of the concerned people, particularly the vulnerable group – women.

As a result of these shortcomings and a host of others, women over the years have been victims of different crimes. The city of Lagos in terms of transportation services, particularly public transport service offers no promise for this group of people, and the general quality of life of women is substantially lower than the male counterpart. It should be pointed to that; this society anti-behaviour is not limited to Nigerian cities or Lagos, but cut across most developing cities and developed cities. The forms and intensity of the crime makes the difference. To justify this fact, study conducted by Sohail et al, (2006) on public transport services in Colombia, Tanzania, Pakistan, Sri Lanka reveals that lack of transport infrastructure, maltreatment of young ladies and frequent rape attempts on women along side with physical attacks etc; grossly discourage this vulnerable groups from using public transport. Similar to this is the case of sexual harassment on public transport in Peru and Lima that resultantly debar women from using public transport. Also, Baker et al; 2001; DETR, 1999; Cozens, et al; (2004) explained using their various findings in developed cities that, personal security of both users and non-users of public transport should be an area of urgent improvement.

### **1.3: JUSTIFICATION OF THE STUDY**

In recent past, transport planners and policy makers globally observed the differences in travel patterns of women and men. In other words, studies have focused on travel pattern of women (Porter, 2008; Sicat, 2007; Asiyanbola, 2007; Odufuwa, 2007); and it has been widely recognized that, women have a “triple role” (Frank, 2009). This includes reproductive work to maintain the labour force and productive work for the generation of income, for instance, involvement in informal enterprises (Moser, 1981; Roldan, 1985 and Afshar, 1985), and also community management. However, studies on gender and public transportation, specifically in most developing countries like Nigeria have not been accompanied with empirical studies on criminal activities in public transport and its resultant effect or implications on the livelihoods of women. Most past and recent transport studies in relation to gender have focused on women and men differential patterns of intra and inter city travel (Asiyanbola, 2007 and Oyesiku, et al; 2002 ). The importance of these studies on transport planning and urban development is not in doubt, their contributions nevertheless reveals only a small portion of gender and transportation problems and the overall urban public transport service planning and management situation. Though, studies of Oyesiku, et al; 2002; Morenikeji, et al; 2001; Odeleye, 2001 and Asiyanbola, 1997 and 2007) shows the importance of gender dimension in analyzing transport issues as well as planning of cities. Very few of these studies examine the safety or criminal activities faced by women when using public transport in the country, and the effect of this towards meeting the contemporary individual livelihoods development activities.

It is pertinent to note that gender and transportation study has in recent time entered the public consciousness (TRB, 2009). Newspapers barrage readers with stories of pick-pocketing, assaults, snatching of valuable properties, stabbing, raping and ritual in public transportation. The reality of criminal activities pervading public transport services in most cities all over the world and the imperative to act or do something about it is now widely accepted. With specific reference to Lagos, physical assaults, harassment, sexual abuse and psychological torture faced by women using public transport has remained unexamined. The

present stage of development of the city (Lagos) requires study like this. This is pertinent because of the intrinsic relationship between transport and individual and national development. As rightly noted by scholars, public transport is germane to sustainable livelihood of women, and women are dominant users of public transport in most developing countries. More importantly, public transport is like “blood in the vein of human”, lack of it or inappropriate functioning of this element has a resultant effect on the other sectors and the concerned individual. As earlier mentioned, it is interesting to note that public transport has over the years being an inevitable mode of travel. Thus, improvements and specifically safety of the service is essential to improve and enhance access to occupation, education, health, and other opportunities for its users.

The challenges for governments, particularly in developing countries are to address the problem of shortage of public transport services and prevailing criminal activities when using the mode in a lasting and sustainable manner. Many, like Nigeria have adopted the use of mass transit service owned and operated by the government, introduction of three-wheeler vehicles, etc, but experiences tells that such responses often collapsed or remain staggering because resources were depleted or grossly mismanaged and improper institutional management framework (Adeniji, 2000; Oyesiku, 2002; Filani, 1988). The relevance of and urgency for safe and adequate public transportation are partly related to population upsurge and the persistent criminal activities in the use of public transport in cities. An effective means of movement or travel is important, as transport helps to fulfill both productive and reproductive functions. In other words, adequate public transport service improves or enhances opportunities for health, education, employment etc. Above all, effective transport system fosters a country’s economy.

Knowledge on adequacy and safety or otherwise of public transport system is important as it may facilitate effective realization of integrating gender sensitive transport policies in different countries, particularly Sub-Saharan African cities; where the state of public transport is grossly inadequate compared with developed cities. Gender and public transport planning and management study like this can provide an insight to the extent to which women are physically excluded as a result of unsafe and inadequate public transport system, and thus partly provide an explanation for their backwardness in terms of quality of livelihoods. This study is important in the context of urban management and development and simultaneously relevant for future public transport planning and management strategies. The outcome is directed towards policy makers and the general populace. A deeper understanding of the issue and effective implementation of suggested policy directions will be important for current and future management of transportation services. Furthermore, it is hoped that the outcome will contribute to a better understanding of the transportation needs and safety of women and more specifically gender perspectives of public transportation planning, development and management. It will equally contribute to discussions on the concept of sustainability with focus on gender and transportation issues; and it will assist in any discussions about the need for consideration of gender needs or issues in planning and management. Finally, it will improve the data base for crime, gender and public transportation planning and management, and contribute to measures that can be adopted to curtail or reduce criminal activities in public transportation system, and it is hoped that empirical knowledge on this disturbing issue will be instrumental in guiding decisions for integrating gender sensitive transport policy in Lagos and the country as whole.

#### **1.4: RESEARCH OBJECTIVES**

Given the drawbacks of current studies on this matter, new study that will generate or catalyze operationally useful knowledge and empirical backing facts on the need for safe or

crime-free public transport services for women and others is a matter of urgency. This study sets out to address and discuss the question of how women are affected by unsafe or insecure public transportation services. Safe in this context goes beyond freedom from accidents and impact of emission, but it entails injuries, harassment, rape, assaults experienced by women in the use of public transport. It covers criminal activities that take place while walking to and from transport facilities, at boarding points and on board.

Recent focus of MDGs is on issues of urban poverty, mortality, as it affects women and interested in finding solution to these problems. This study was designed in relation to the MDGs goals, with focus on mobility of women through the use of public transport. The main aim of this study is to explore ways by which increasing wave of criminal activities in public transport services in Lagos metropolis in Nigeria is affecting the livelihoods of women. In other words it aims at exploring the implications criminal activities in public transport on the livelihoods/ travel pattern of women). It is hoped that empirical knowledge on this disturbing issue will be instrumental in guiding decisions for integrating gender sensitive transport policy in Lagos and the country as whole. Objectives of the study are to:

- (i) Theoretically examine the concept of gender, safety and sustainable public transport
- (ii) Examine the travel environment of women in the study area
- (iii) Identify types of crime experience by women in public transport
- (iv) Analyze the need for integrating gender sensitive transport policy in Lagos

### **1.5: AN OVERVIEW OF STUDY AREA**

Lagos was created in 1967 and served as the capital of Nigeria till 1991. It goes beyond doubt that, Lagos remains the most complex metropolitan locale of regional population and organization (Agbola, 1997). After Abuja- the Federal Capital; Lagos is still the commercial nerve centre of the country and the commercial / industrial capital, as well as the major port of entry and exit from the country. Lagos is an important and most significant city in the country. It is interesting to note that, local and national role play by Lagos comes from multi functions exhibited within the metropolitan area of the state. It should also be noted that, functions display by the city ranges from essential economic activities such as manufacturing to more socially oriented ones. Nevertheless, major decisions affecting the general welfare of the country are made in Lagos; likewise, the city remains a major point of origin for the development and diffusion elsewhere, of significant innovations of all kinds. According to Agbola, (1997) the human density of the metropolis, its pace of daily life, the complexity of its transactions, and the cosmopolitan reach of its flow of products, and people, have all combined to project Lagos as a member of the world metropolitan club. These attributes of the metropolis are usually regarded as the stimulants to cultural creativity and change that maintain the metropolis as a dynamic node within the national settlement system.

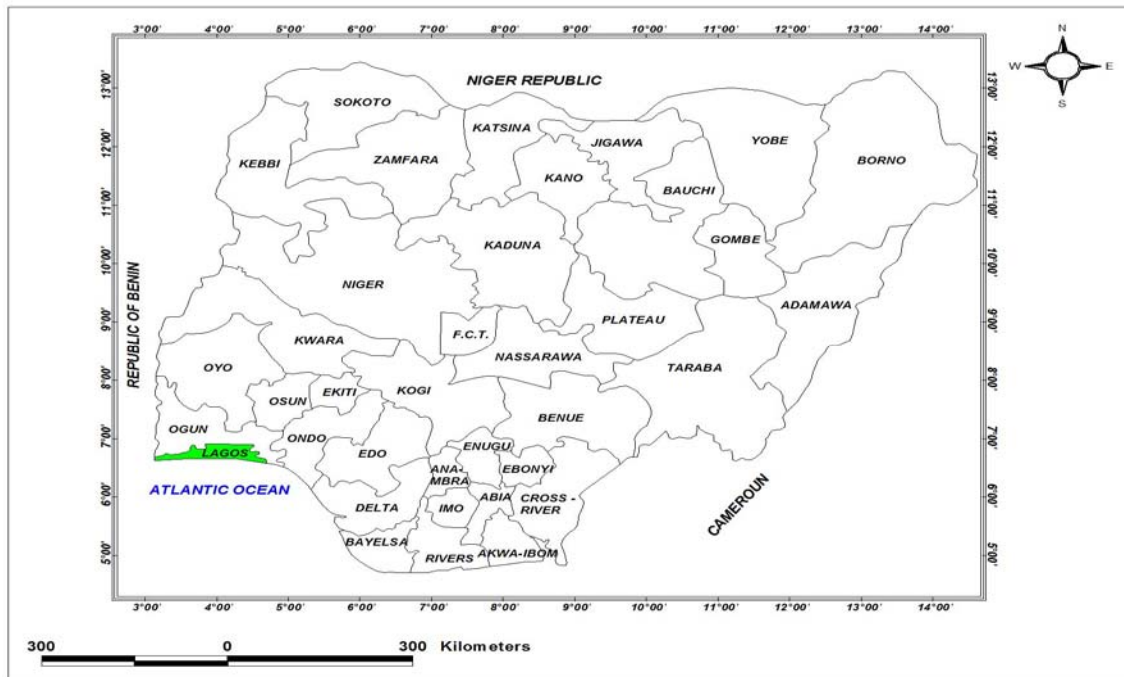
On the other hand, however, the transportation situation in most parts of Lagos leaves much to be desired. Many residents depends on road based public transport system, which are old and poorly designed, inadequate, overcrowded, unreliable and slow (Odufuwa, 2006). Local buses commonly called “danfos” – flying coffins; “molue”- moving morgues and the influx of motorcycles- “okadas” are not only viewed as death traps for millions of users, but they constitute notable avenue through which criminal activities are perpetuated in the city. As noted by Braimoh, et al; (2007), Lagos still faces numerous challenges, despite its economic importance to the country as a whole. For instance, inadequate supply of public



transport services often leads to disorder behaviour when using the services and this often degenerates to criminal activities.

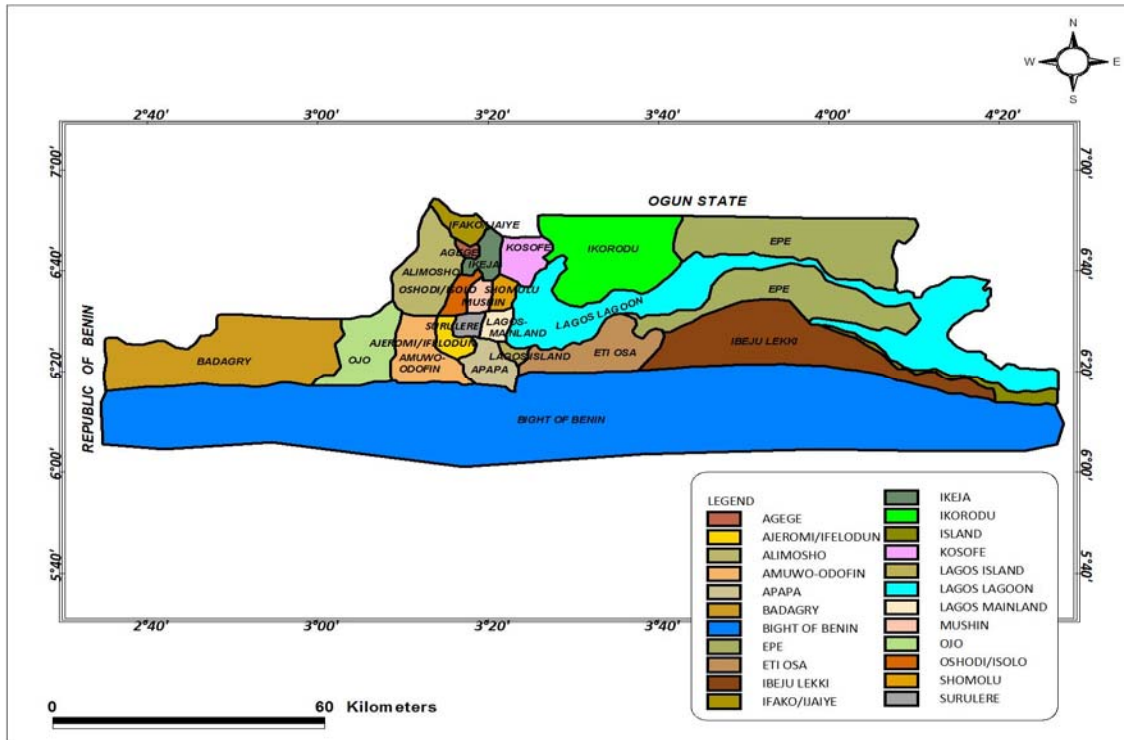
## 1.6: HISTORICAL GROWTH OF LAGOS

Lagos is located in the South-Western part of Nigeria; between latitude  $6^{\circ}$  and  $7^{\circ}$  north of the Equator, and between longitudes  $3^{\circ}$  and  $4^{\circ}$  east of Greenwich (See Fig.1.1). It has a coverage area of 335,000 hectares (3,350sq.km) Odufuwa, (2007); in terms of spatial development or growth, Okude, et al; (2006) noted that Lagos originated as a traditional settlement of close to 3.85sq km in about 1881 and has grown to over 1,183 sq km in recent time. Expansion of Lagos was due to the growth of the colonial economy (Agbola, 1997). Having served as the seat of government between 1914 and 1992, after which the Federal capital was relocated to Abuja, Lagos remains the largest seaport and the most pertinent railway terminus, and enjoys prominence in the export-oriented economy of the country. Also, worth mentioning is that, Lagos metropolis lies generally on low lands, with about 17,500 hectares of built-up area of which residential areas occupy the single largest proportion of 8,939 hectares (51.9%), commercial 821 hectares (4.8%), industrial, 1,444 hectares (8.4%) institutional and special use 2,366 hectares (13.7%) open spaces 453 (2.6%) and transportation 3,205 (18.6%) Oduwaye, (2005). The metropolitan Lagos according to scholars constitutes about 33% of the state. This accounted for close to 455sq km of the metropolis (Okude, et al; 2006; Oduwaye, 2005) (see fig. 1.2)



*Figure 1.1: Location of Lagos within the context of Nigeria*

*Source: Author's digitized map*



**Figure 1.2: Lagos and its metropolitan areas**

**Source: Author's digitized map**

As earlier said, Lagos is not only an important commercial/ industrial centre in Nigeria and West Africa as whole, but also seat of government and learning, as well as an important cultural centre. These factors are partly responsible for high trend of migration into the city of Lagos. However, apart from being the smallest city in regards to landmass, and according to Lagos state statistics, the state accommodates or has the highest population (over 17.5 million) (Lagos State Statistics, 2006), in the country and regards as the second fastest growing city in Africa. It should be mentioned that, based on the importance of Lagos; in the most recent National population census have controversial population figures. According to the National Population Commission of Nigeria, the state have about 9,013,534 million (9.1 million) (see table 1.1); while the Lagos State official population census also conducted in 2006 stated that the state has a population of about 17,552,942 million (17.5 million) (see table 1.2). However, based on the United Nations population projection, Lagos is expected to be the second most populated city by the year 2015 with population size of about 20 million.

**TABLE 1.1: National Population Figures of Lagos State**

<b>Local Government Areas</b>	<b>Population</b>	<b>Male</b>	<b>Female</b>
Badagry	241093	121232	119861
Ojo	598071	310100	287971
Amuwo-Odofin	318166	167856	150310
Alimosho	1277714	649460	628254
Agege	459939	242520	217419
Ifako-Ijaye	427878	218993	208885
Ikeja	313196	169233	143963
Oshodi-Isolo	621509	321767	299742
Mushin	633009	328197	394812
Surulere	503975	261265	242710
Ajeromi-Ifelodun	684105	352238	331867
Apapa	217362	119556	97806
Lagos Island	209437	108057	101380
Lagos Mainland	317720	166163	15557
Shomolu	402673	207649	195024
Kosofe	665393	350120	315273
Ikorodu	535619	272569	263050
Eti-Osa	287785	160396	127389
Ibeju/Lekki	117481	59544	57937
Epe	181409	91105	90304
<b>Total</b>	<b>9013534</b>	<b>4678020</b>	<b>4335514</b>

**Source:** National Population Commission of Nigeria, 2006.

**TABLE 1.2: Lagos State Population**

<b>Local Government Areas</b>	<b>Male</b>	<b>Female</b>	<b>Total</b>
Agege	564,239	468,825	1,033,064
Ajeromi-Ifelodun	723,644	711,651	1,435,295
Alimosho	1,099,656	947,370	2,047,026
Amuwo-Odofin	301,012	223,959	524,971
Apapa	264,728	257,656	522,384
Badagry	187,427	192,993	380,420
Epe	153,360	170,274	323,634
Eti-Osa	460,124	523,391	983,515
Ibeju-Lekki	49,613	49,927	99,540
Ifako-Ijaiye	380,112	364,211	744,323
Ikeja	328,778	319,942	648,720
Ikorodu	364,207	324,838	689,045
Kosofe	527,539	407,075	934,614
Lagos-Island	461,830	398,019	859,849
Lagos-mainland	326,433	303,036	629,469
Mushin	684,176	637,341	1,321,517
Ojo	507,693	433,830	941,523
Oshodi-Isolo	514,857	619,691	1,134,548
Somolu	517,210	507,913	1,025,123
Surulere	698,403	575,959	1,274,362
<b>TOTAL</b>	<b>9,115,041</b>	<b>8,437,901</b>	<b>17,552,942</b>

*Source: Lagos State, 2006*

It is worth mentioning that about 75% of the total population of the state resides or earn their living in less than 800km<sup>2</sup> metropolitan part of the state (Braimoh, et al; 2007), and the rapid rate of uncontrolled and unplanned urbanization in the state has brought with it complex problems or strains of existing infrastructural facilities, particularly transportation and housing. The Lagos state road network as revealed in fig. 1.3 have drastically being over stressed due partly to inadequate maintenance and mostly by heavy and uncontrollable use of the transport infrastructure. Long journeys to work, traffic difficulties, acute shortage of public transport, high incidences of crimes of all types, to mention a few were implications of the unguided population growth of the state. In other words, the rapid rates of uncontrolled and unplanned urbanization as earlier mentioned have resulted in worsening travel condition, particularly by public transport in Lagos. Meanwhile, sustainable public transport constitutes an important determinant of the livelihoods of most residents in the city, and available evidence reveals tales of woes about the criminal activities and public transport system in Lagos.



**Figure 1.3: Lagos state road network**

**Source: Authors digitized map, 2009**

With high rate of crime, available public transport system in Lagos and most developing countries are worse than those of developed countries (Adeniji, 2000; Oyesiku, 2002; Armstrong-Wright, 1993). The implication of this anti-social behaviour on the livelihood of women in particular cannot be overlooked. This partly forms the basis why public transport and criminal activities continues to constitute a major disturbing and challenging issue to the Government of Lagos and Nigeria as a whole. As demand for public transport increase in the face of criminal activities taken place in the state, as well as the important role of women in the society; information on crime and fear of crime when using public transport and how to curtail the problem is urgently needed if the city wants to remain and maintain its status as commercial nerve centre and the nation magnet of economic opportunities.

**1.6: STRUCTURE OF THE THESIS**

The structure of this thesis was based on research questions and the methodology adopted. However, the thesis was organized into five chapters. Chapter one showcases background information of the study in relation to gender, crime and public transport. Statement of problem, justification/ importance of the study, research objectives and description of the study were examined in this chapter. Chapter two dealt with the review of relevant literature and theoretical issues. The theoretical aspect begins with an introduction of the subject by emphasizing the intricacy of or need for sustainable public transport. Relationships between gender and transportation planning and management, specifically public transport were theoretically reviewed. Then, issue of criminal activities in public transport along gender dimension was examined and, the concept of sustainable public transport was explored. Also, the interplay between uncontrolled urbanization and transport infrastructural development and management aspects were described. Interestingly, the chapter also introduces four environmental criminology theories used to describe the current crime and fear of crime experienced by women when using public transport service. Based on

literature reviewed and environmental criminology theories used, a conceptual framework was developed to explain the existing situation and to analyzed data gathered from the field survey.

Chapter three focused on methodological framework or research methodology. In this section, processes or steps followed to gather data and analytical methods adopted were explored. In other words, survey instruments, main qualitative and quantitative techniques employed for the study were highlighted and discussed, and at the same time relating them to objectives and main research questions of the study.

Chapter four presents empirical findings, analysis and interpretations of findings of the study. It applied descriptive and quantitative techniques of research methodology to the empirically derived and collected data on crime and fear of crime experienced by the respondents (women) in public transport system in Lagos metropolis, Nigeria. This chapter explained findings in relation to theories and concept adopted for the study. Interestingly, the chapter presents factors responsible for, and that explains the occurrence of criminal activities in public transport with its resultant effect on livelihood of women, using parametric statistical techniques.

Finally in chapter five, stem on the objectives and research questions of the study, and considering the theoretical insights as well as the empirically derived findings; a synthesis is presented for policy direction and conclusions drawn.

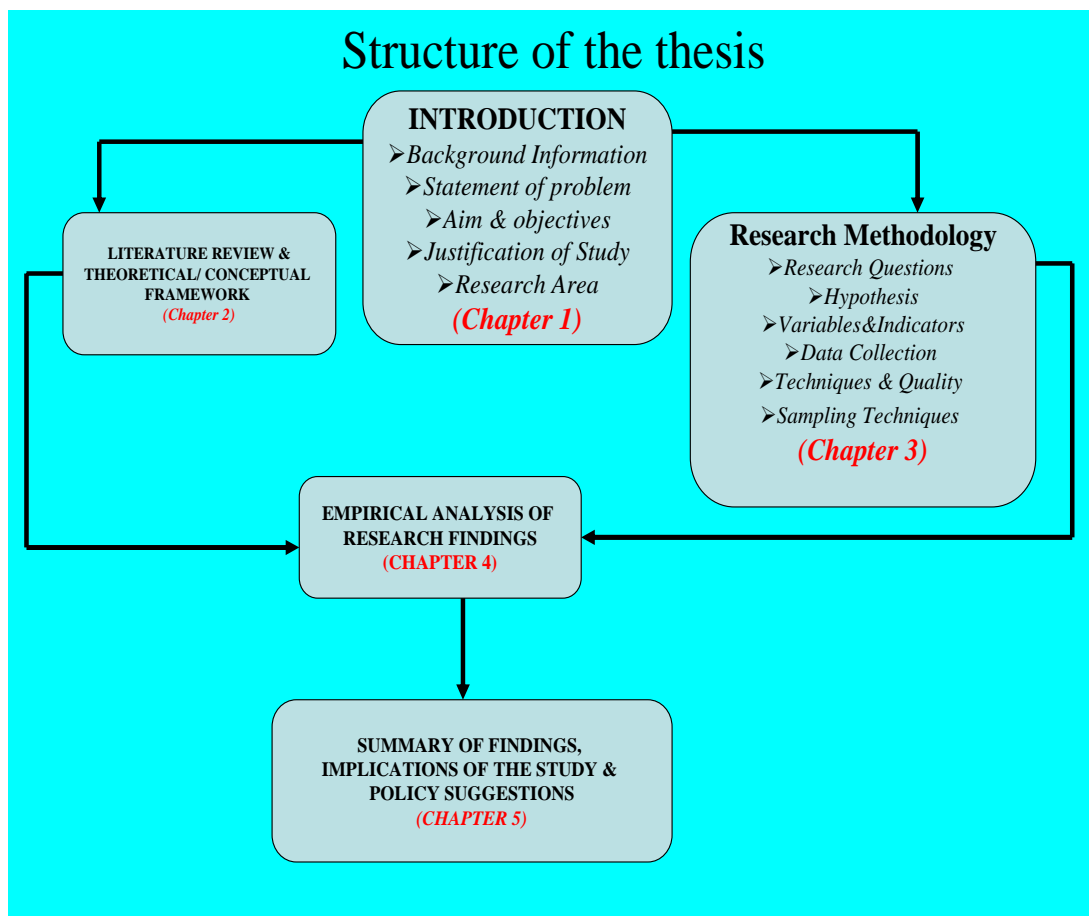


Fig.1.4: Structure of the thesis

## **CHAPTER TWO**

### **LITERATURE REVIEW AND THEORETICAL/ CONCEPTUAL FRAMEWORK**

#### **2.0: INTRODUCTION**

A considerable reduction in hardships facing women when using public transport can be achieved through the provision of effective transport infrastructure and adequate coordination and management of public transport services in cities. As rightly noted by scholars, provision of public transport service is a function of inputs and outputs transformation. In other words, adequate provision of required elements of public transportation system ranges from physical infrastructure, personnel to guiding policy framework; will determine the output in terms of satisfaction of mobility needs of the users. Interestingly, public transport service provided by different actors is expected to match the needs of all users. With prevailing high demand for public transport, short supply of the service, and alarming economic hardship of the country, public transport service have become an element of fear for all users, stem on the rate of criminal activities perpetuated via different modes of public transport.

This chapter focused on literature review and theoretical/ conceptual framework related to gender, safety and public transportation; with the view of providing a framework for this study. It shed light to consideration of gender issues in transportation planning and management, specifically public transport, safety; and that improvement of public transport service and infrastructure can influence individual productivity and production factors, such as access to employment, health and education services and, thus substantially enhancing general livelihoods of people in cities (World Bank, 2002; Litman, 2008 and Geerlings et al, 2005 and 2000). Research on different aspects of public transportation and satisfaction has been the almost exclusive preserve of urban planners and managers. Over time, as inadequacy of public transportation has become more endemic and its effects more pervasive, social and environmental scholars have become interested and involved in the nature, causes and consequences of inadequacy of public transportation services. In recent time planners, sociologists, architects, etc., have become active researchers in public transportation, especially as it relates to and affects the vulnerable groups; specifically women. The understanding of this area of study (gender, safety and public transport) can be traced to the last decades, when transportation and urban planners as well as decision or policy-makers globally observed the significant differences in mobility and activity patterns of women and men (Peters, 2002).

This chapter captures pressing areas of urban management and development; with reference to gender and safety issue and particularly to shed light to the issue addressed by the study. The first area concerns conceptualization of urbanization and public service delivery, particularly public transport in Nigerian cities. Secondly, a link is forged with transport and livelihoods; this gives insight into the interplay of social, economic and political issues of livelihoods of women, and why transportation needs of the present and future generation should be taken care of. Thirdly, consideration was given to conceptualization of gender in relation to transportation; and the consequences of unsafe public transportation services, both in social and economic terms, which forms the focus or object of this study.

#### **2.0.1: URBANIZATION AND TRANSPORT DEVELOPMENT**

Dimitriou, (1992) in his view about transport and the third world cities defined urbanization as the process whereby a settlement's land use and the activity patterns of inhabitants shift from dependence on a rural-based economy to a predominantly urban one. It

should however be noted that urbanization forms one of the most powerful realities of the twenty-first century. For instance the UNDP, (1996) viewed it as the real strength behind economic and development of many cities of the world. In other words, urbanization is one of the indicators of rapid economic and social changes or paradigm that most societies are passing through as a reflection of national or city progress. To Johnston, et al (1986) it entails absolute and relative growth of towns and cities within a defined area, usually a country. Interestingly, discussions on urbanization have witnessed various views on what it entails and consequences in most developing countries (Mabogunje, 1968; Ayeni, 1978 and 2001; Bourne, et al, 1984 and Pacione, 2002). It is however pertinent to ascertain the fact that, in an age of rapid globalization, urbanization erodes primordial identities and loyalties. Similarly, it creates new grouping and factors that promote exclusivity in cities. Based on this fact, transportation planning and city management literature has been increasingly concerned with the implication of the relationship between city livelihoods and level of urbanization on the process of development of individual, the nation and specifically the Third World countries generally. It is argued in literature that, if development correlate with urbanization as observed in the industrialized countries, then factors responsible for urbanization in all regions ought to be similar if not universal. This implies that, the level of urbanization attained by developed countries before been refers to as industrialized, ought to have been attained by developing countries. Studies have, however, revealed that the situation in developing countries is different and more complicated when examined from the perspective of urban service delivery and city satisfaction (Aprodicio, et al; 2007).

An issue that arises over the disparity of urbanization in developing and developed countries is that, the factors underpinning urbanization process within the global context are not necessarily the same and thus the implications of urbanization are likely to be different. As a corollary to this premise, if cities are not well planned and basic services are not delivered and managed efficiently to benefit all urban residents, their economic and social transformational roles cannot be optimized and their positive effects and impact on economic and social development will not be realized. To enhance a better understanding of these views; specifically as it relates to effects of urbanization on transport infrastructure planning and management, particularly; public transportation problems, it is pertinent to review general highlight of urbanization.

It is worth noting that, urbanization is one of the most remarkable issues of the twentieth century and a major challenge to scholars and policy makers; particularly in developing countries. This stem on the prevailing urban problems of housing, infrastructure, transportation, environmental sanitation and pollution, etc., that rose to a very high and sometimes unmanageable extent. Ayeni, (2001) posited that, twentieth century was the time when almost all the world came to accept urban problems as a “normal” way of life. Regardless of this, views about urbanization have constantly being dynamic over the years. For instance, some portrayed cities as parasitic, unproductive and centres of mass consumption and wastage; while some view cities as centres of great civilizations, job creation and for the promotion of good values and places for efficient and effective provision of services (UNCHS, 1996). In actual fact, city can be viewed as meeting point for people from diverse cultural, racial and religious backgrounds; a place where people struggle for scarce economic resources as well as political stability or power. Cities remains focal points of country’s economy where people come together primarily to exchange goods and interact. They are however, “drivers” of societal development, not simply bricks or mortar; cities are usually places of dreams, nostalgia and imaginations. It should be noted that, the heterogeneity of urban settings for instance Lagos partly makes it an overcrowded and attractive location for societal mishaps (thieves, rapists, murders etc ;). According to Gilbert



and Gugler, 1982 cited in Agbola, 1997) a city provides the anonymity required for individual crime and the space for specialized and organized underworld.

Three concepts of urbanization that forms the bedrock of analytical studies of urban development and management and which provides frameworks for evaluating the role of cities and urban services in the development process of individuals are:

- (i) The behavioural View
- (ii) The structural Analysis, and
- (iii) Demographical interpretations of urbanization.

Wirth, (1938) the pioneered of the concept of urbanization view it as a behavioural process and argued that urbanization is concerned with changes in experience and associated patterns of behaviour that individuals go through over time. Similarly, Chile, (1964) pointed to the fact urbanization is a structural process whereby structural changes take place in the activities of the whole population as well as the economy in which they engaged. This idea focus on the migration of people from rural or agricultural regions into urban or non-agricultural locations as reflection of increasing economic specialization and advancement in technology. The third concept of urbanization as explained by Lampard, (1955) sees urbanization as an important demographic process whereby the process of population concentration becomes a way of ordering a population to attain a certain level of subsistence in a given environment. These views give rise to different explanations of urbanization and what cities and central places are. However, they portray urbanization as a complex process that manifests in various dimensions. This fact gave rise to various disciplines to be interested in the concept of urbanization as an important determinant or indicator of sustainability of cities.

The point that can be deduced from the foregoing views is that, urbanization is a process of concentration of the population in large number in an urban centre and transformation of the society involving migration and economic changes. It is however, a settlement process in which a new set of settlement and activities patterns emerge as a result of shifts in sectoral economy and changes in intra-sectoral composition of the economy. It is pertinent to note that, the growth of city population through natural increase alone is not a process of urbanization, however; the increase in the proportion of the population located in urban centres due to these factors of natural increase, migration and area expansion (Oyesiku, 1998). It is of great important to note that, the advantage of concentration in urban area in relation to urbanization is base on the notion that new activities spring-up urban areas. Industrial activities and services are localized due to changes in production modalities. This economic rationale in relation to economies of scale and the need to earn a living forces activities to be concentrated in cities.

From the foregoing, it is obvious that spatial concentration of people and associated economic changes lead to economic development of cities and individuals. It s the economic change that necessitates economic development and city growth or productivity. It should however be mentioned that, the unguided population increase have resultant effects on every sectors of the country. For instance, the possibility of achieving sustainable livelihoods in urban areas cannot be attained without or in the absence of efficient infrastructural services in which transportation forms the connecting rode. In other words, the rate and unguided urbanization in Lagos as in other developing cities have eaten deeply the fabric of the city and thus making sustainable livelihoods a dream.

## 2.0.2: URBANIZATION AND TRANSPORT IN NIGERIA

The genesis of urbanization can be traced to the Mesopotamia in the valleys of the Euphrates and Tigris Rivers, also it has being in existence for over 5000 years before Christ. It has over the time becomes a notable and inevitable demographical issue in the twenty-first (21<sup>st</sup>) century; not only in Nigeria, but also all over the world. Of great importance is the fact that, major redistribution of population in most African countries is a response to rapid urbanization; and at a time when the economic performance or status of most of these countries is generally staggering or in the state of collapse (Mabogunje, 1991; 2002; Ayeni, 2001 and Oyesiku, 1998). Though, the pace and ability to manage the process of urbanization varies between countries and regions, but virtually most countries in the developing economy have been experiencing urbanization in the past four decades.

Nigeria is known to have a long history of urbanization, but the process is not inimical to development of the country, it is the rate that has been too rapid to allow for steady and progressive socio-economic development of the country. Its effect on transport infrastructure and services has led to uncontrolled development in most Nigerian cities and urban poverty. It should be made known that, it took some time before the problems of rapid urbanization manifested and appreciated by Nigerians (Ayeni, 1978; cited in Oyesiku, 1998). In recent past, however, the awareness of the need to revisit transportation crises through effective planning has necessitated government to pay attention to transportation planning and management problems and persistent deterioration of most Nigerian cities, like Lagos. With the alarming and uncontrolled urbanization in Nigeria, transport infrastructure and services has been very frightening and perhaps more easily observable in most Nigerian cities. This invariably, brings about shortages of transport supply, worsening transportation or mobility quality, pronounced pollution, problems of traffic congestion and increasing accidents rate. Over the years, transport and its associated components or elements in Nigerian cities are grossly inadequate, such that millions of Nigerians now travel using sub-standard mode and unfriendly or threatening travel environment.

In recent time and to date, almost all travel modes in Nigerian cities present displeasing pictures. Safety of transportation services in the metropolis like Lagos, Ibadan, Onitsha, Ekiti, Kano, Port-Harcourt etc, is becoming worse day by day. The problems of providing sustainable transportation for all have been intensified in recent time; but surprisingly, safety have become an inevitable part of the transportation issues Nigerian cities, like other cities in the world. The alarming rate of urbanization partly contributes towards increasing risk in cities. For instance, inability of existing public transport supply to meet the rising demand as well as inadequate regulations and management often are characterized to be responsible for most transport externalities in most developing cities, specifically Lagos.

Urbanization in Nigeria can be traced to the advent colonial administration or period. Like, most developing countries, Nigeria has exhibits a fast and galloping rate of urbanization in the world since political independence (Mabogunje, 2002). It is therefore worth mentioning that, the pre-colonial, colonial and post-colonial period reveals distinct characteristics of urbanization in Nigeria. More importantly, each of these periods led to the emergence of different cities, for instance; Kano, Zaria, Sokoto, Ibadan, Maiduguri, Lagos, Osogbo, Abeokuta, Oyo, Ilorin, Ile-Ife, Ijebu-Ode, Benin, Onitsha and Calabar, belongs to the pre-colonial era. Interestingly, most of these cities, still maintains the characteristics associated with them before now. Cities associated with the colonial period include; Kaduna, Minna, Jos, Makurdi, Enugu, Aba, Owerri and Port-Harcourt. The post colonial period is responsible for the political restructuring of the country from 1967 to dates; also led to the creation of more states in Nigeria to 36.

Interestingly, less than 15 percent of the total population of Nigerian lives in the urban centres of more than 20,000 inhabitants in 1950s; by 1975, this proportion rose to 23.4 percent (Mabogunje, 1991 and Nwaka, 2005). Between 1970 and 1985, 39% of the population lives in urban areas, while; at the turn of the 21<sup>st</sup> century, about 43.5% were living in urban areas, with projections that urban population will reach 50% by the year 2010 and 65% by 2020 (Nwaka, 2005). It is pertinent to say that, urban population growth rate in Nigeria is 5.5% annually (Nwaka, 2005; Pyke, 2003 and Kessides, 2006). The former National Capital of Nigeria - Lagos and the second largest city in the country after Ibadan in 1952, had a population of over 250,000 and by 1963 outstripped Ibadan to have a population of over 1.5 million within its metropolitan area. Notably, between that time and 1975, Lagos had about 3.5 million; it is currently having over 9 million, and is projected to be 24 million by 2020 (Ayeni, 2001; Nwaka 2005). In their comparative studies of cities and urban population growth as depicted in table 2.1; the size of Lagos with notable cities in the world is not set to abate, and thus scholars (Fouracre, et al 1999; Ayeni, 2001; Egunjobi, 1999) had predicted an increase in the size of cities world wide. Similarly, According to UNCHS, (1996) and as revealed in table 2.1, Lagos was ranked 7<sup>th</sup> in 1994 and 5<sup>th</sup> in 2006 as the largest city in the world (Fouracre et al, 1999; US-CBTAW, 2006). By the year 2015, Lagos megapolis is expected to be the third largest city in the World with a population figure of 24.5 million, next to Mumbai (Bombay) in India and Tokyo in Japan that shares 26.5 and 28.7 million population respectively.

The point worth nothing is that, most cities especially in developing world like Nigeria do not have the resources to keep pace with the geometric increase in the demand for urban infrastructure or facilities. For instance, the kaleidoscopes of means of transport and traffic regulation or management methods employed over the years are yet to enhance transportation of people in cities. In recent time and particularly in Nigerian cities, the link between urbanization and sustainable transportation and the threat to urban livelihoods have emerged as a major issue of discourse (Filani, 2001; Ogunsanya, 2004).

**Table 2.1: Population Growth Rate and Their Forecast in Selected Cities of the World.**

Cities	Population (Millions)				
	*1994	**2006	*2015	*1994 % Increase	*2006 % Increase
Beijing	11.0(5)	12.0 (6)	19.2 (6)	74.4	66.0
Mumbai	14.2 (4)	19.0 (3)	27.0 (2)	90.1	50.0
Cairo	9.0 (8)	10.8 (8)	14.1 (9)	56.7	12.0
Dhaka	6.9 (9)	11.0 (7)	18.5 (8)	168.1	68.0
Jakarta	10.0 (6)	9.8 (9)	21.0 (4)	110.0	114.3
Lagos	9.2 (7)	13.5 (5)	24.1 (3)	162.2	78.5
London	6.8 (10)	7.6 (10)	6.9 (10)	1.5	-0.2
Mexico City	15.0 (3)	18.1 (2)	19.0 (7)	26.7	5.0
Sao Paulo	15.5 (2)	17.7 (4)	20.5 (5)	32.3	15.8
Tokyo	26.0 (1)	28.0 (1)	29.0 (1)	11.5	3.6

Source: \* Fouracre, et al; 1999; \*\* US Census Bureau and Times Atlas of the World (Accessed, 2009); ( ) Ranking in Parentheses

### 2.0.3: SUSTAINABLE TRANSPORTATION

In order to have a better understanding of the concept of sustainable transport, the concept of sustainability or sustainable development demands a broad overview towards establishing the intrinsic relationships between the concepts. Sustainable development has been a major concern since the United Nation's symposium on interrelations among resources, environment and development, held in Stockholm in August 1979; it is rooted in population and resource debates or discourse on the limits to growth (Meadows, et al, 1972; Satterwaite, 1999 and Hardoy, et al, 2001). Stem on its importance, numerous organizations pick interest in the concept as it relates to effective utilization and management of resources and development of the society. For example, The World Conservation Union, The United Nations Environment Programme (UNEP) and the World Wide Fund for Nature (WWF) etc. have over the years use the concepts as foundation or framework for their various development activities. Also worth mentioning is the adoption of the concept as the bedrock for various activities of the World Commission on Environment and Development. Since, the Brundtland report of (1987), the concept of sustainability according to Enyedi, (1994) has spread and widely used in the world, while lots of international reviews has examined the concept based on feasibility. In recent past, sustainability ideas or initiatives have been grossly undertaken in many cities and regions (Hardoy et al, 2001 and Satterwaite, 1999). Cases worth noting are, North America with the idea of "Maryland Smart Growth Initiatives", Portland or 2040 plan, sustainable San Francisco, Sustainable Toronto, Sustainable Seattle, and the Bay Area Alliance for sustainable development. These developmental knowledge or ideas is based on the 1987 report of the World Commission on Environment and Development (commonly called the Brundtland Commission report) and the United State Presidential Council for sustainable Development (PCSD) report, "Sustainable America: A

New Consensus”. These reports argued that sustainable development can only be achieved by building sustainable communities (Satterwaite, 1999). However, questions that demands instant answer is what is sustainability? and when can a society be said to be sustainable? What are the indicators to use to measure sustainability?

It will be of interest to note that, the concept of sustainability evokes different meanings and senses according to usage. The Brundtland report of (1987) viewed sustainability as a “*process that ensures the needs of the present without compromising the ability of future generations to meet their own needs*”. Sustainable development from the view of Geerlings, (1997); can be interpreted as a process of change in which the exploitation of resources, the direction of investments, the orientation of technical development, and institutional change are all in harmony and enhance both current and future potential to meet human needs and aspirations. This according to him implies that, sustainable development is a dynamic concept with a temporal aspect and a scale perspective. Indeed, the United government’s document of 1988, also viewed it as “social progress that recognizes the needs of everyone, protection of the environment and reduction of global effects, efficient use of natural resources and balancing of economic and employment growth” (DETR, 1998; cited in Beella, et al, 2007). Furthermore, Beella, et al, (2007) from their own perspective examined the concept as good things or occurrences that must persist in the future and bad ones that must not grow into the future. Building on this view, jobs, wages, information, education and health etc, are the good societal elements that needs to be protected and allowed to go into the future, while; pollution, poverty, crime etc, are not to be allowed into the future (Ryan, 2003). Waving further into literature, RIVM, (2005), posited that, sustainability deals with quality of life and the need to maintain or protect the quality of future. This idea is similar to views of Geerlings, (2000) and Gifford et al, (2005). This connotes that, sustainability deals with public views in relation to quality of life or livelihoods and spread of societal benefits to all. Litman, (2006 and 2007a), pointed to the fact that, the concept is rooted on the premise that the dynamic activities of man can have resultant effect on the economic, social and ecological component of the society. This made it clear that, sustainability goes beyond ecological issues, but cut across other elements (economic, social and culture) of the society. In other words, sustainability captures the interplay of human activities and thus, entails the need to judiciously coordinate different sectors in the society.

Litman, (2007a), in his argument on sustainable transportation and equity made it known that, “*sustainable planning is to development what preventive medicine is to health*” This connotes that, problems needs to be look into and manage, rather than waiting or expecting problems or crisis to develop. Thus, sustainable planning is a preventive process of ensuring improved livelihoods. It strives to achieve balance between economic, social and ecological aims. Over the years, sustainability have taken enormous attention in decision-making process that focus on goals and impacts of essential societal elements that can be examined or measure, while overlooking variables or elements that are more difficult to measure (Eduardo, 1998 and Litman, (2007b). Interestingly, planning that considers goals and impacts of societal elements (transport, health, education etc,) mindless of how difficult they can be measured can be regarded as sustainable (Litman, 2007a). This centres around the notion that, sustainability is concern with long-term risks of present or existing consumption of available resources, thus; reflecting the goals of intergenerational equity (fairness to future generation). Hajer, (1991) examining the concept of sustainability, said that, sustainability is poorly defined and described as a story line. He went further to make it clear that, the concept has not only attempted to provide solutions to improve the objective state of the environment, but also accommodate latent social conflict. Its widespread use at a time when there is still considerable disagreement about targets for reducing greenhouse gas emissions is indicative

of its social and political status as much as it is of its relevance to environmental improvements (Hajer, 1991 and Hardoys et al, 2001). Scholars also made similar notion on the concept that, it is often defined narrowly. They however made it clear that sustainability encompasses economic issues-(productivity, business, employment etc); Social- (equity, human health, community livability, cultural and historic, values, public involvement etc,) and environment-(pollution emissions, climate change, biodiversity, aesthetic etc, (Bella et al, 2007; World Bank, 2002). The concept calls for a paradigm shift or change in definitions or examination of problems and evaluation of possible solutions. It elaborates the need to be concerned with the social welfare and queried the economic indicators that measures or evaluate only the quantity and not the quality of various activities.

O’Riordan and Rayner, (1991) identify sustainability as a predictable synthesis out of the thesis and antithesis of prevention and adaptation. Prevention reflects the view that nature is very fragile and it is morally wrong to abuse it. The prevention response is quite literally to prevent whatever might threaten this fragile system. Adaptation reflects the view that nature is very robust and that it is morally wrong to curtail development. The environment is flexible, resilient to change and cornucopian in its ability to provide resources for human use (Riordan and Rayner, 1991). Sustainability has at its centre; the notion that it is possible to avoid global catastrophe by careful stewardship of the limited opportunities that nature provides for controlled growth. Economic growth and welfare development of cities can be achieved through effective interaction of various sectors of the society via transportation system that is safe, efficient, cost effective and comfortable. To achieve long-term goal of individual and city development, transport issues must take a centre stage to fulfill its economic and social functions (Mbara, 2002, Lukos et al, 2001 and Carruthers et al, 2005). The awareness of sustainable city development in developed countries is well known and documented, while the role of transport in achieving the goals of sustainable city development in these countries is also well examined in academic literatures (Mbara, 2002; World Bank, 2002 and Litman, 2006). However, transport issues in relation to other sectors and sustainable city development in developing countries, particularly Africa are still not well appreciated by many. Box 2.1 reveals the views of CST, (2002), about sustainable transport system.

- *“that allows the basic access needs of individuals and society to be met safely and in a manner consistent with human and ecosystem health, and with equity within and between generations;*
- *is affordable, operates efficiently, offers choice of transport mode, and supports a vibrant economy;*
- *limits emissions and waste within the planet’s ability to absorb them, minimizes consumption of non-renewable resources, limits consumption of renewable resources to the sustainable yield level, reuses and recycles its components, and minimizes the use of land and the production of noise.*

Box 2.1: Views of CST on sustainable transportation system

SUSTRAN, (2000) also made an effort to guide sustainable transport activities by providing good and bad examples of transport in Asian cities. It was made known that, the best way to perceive the current city image in developing countries is:

*“A city, where roads and haphazard vehicles seem to be everywhere, a city where shops, schools and parks are far apart and requires a vehicle to reach them, where roads act as barriers between communities, where traffic dominates the street making them difficult to cross, where walking and cycling are unsafe and unpleasant, where public transport is infrequent and hard to get, where pollution is visible, pungent health hazard and where honking and road rage are the main turns of social exchange,” (SUSTRAN 2000).*

Based on this view, it can be conceived that, there is relationship between transportation and economic, social and environmental development. Thus, transport is an inevitable factor in sustainability discourse (Beella et al, 2007; Gilford et al, 2005; Lukos et al, 2001; Volinski, et al, 2003). In appreciation of this fact, sustainability supports a change in transportation planning and management. Initially, physical movement over space is often used to evaluate transport, in recent time; it is evaluated in terms of accessibility- peoples or individual ability to satisfy their basic demands and services (Litman, 2008 and Meyer, et al, 2000). It should be mentioned that, transport planners and those responsible for urban design rarely think of the impact of their efforts on women, children, the elderly etc; (Polk, 2001; Hamilton, et al, 2005). Similarly, they fail to realize that all transport policies and policies that influence location and accessibility will steal time from different groups in the society and reallocate it to richer or non-vulnerable groups. The vulnerable groups like women bear the brunt of deteriorating public transport services. They spend more time searching for and waiting for buses which operates in a post-deregulation information famine. The time penalties in making journeys along side with the unpleasant delays and waiting; are serious burden on these groups. If their time had been valued differently, the planning process would have produced a different outcome.

#### **2.0.4: TRANSPORT AND SUSTAINABLE LIVELIHOODS**

The goal of transport is to transform the geographical attributes of freight, people and information, from an origin to a destination, conferring them an added value in the process. Consequently, any movement has a spatial consideration which in turn is linked to spatial flows and patterns (Tolley and Turton; 1995). Oyesiku, (2002) also viewed the function of transport in the cities as enable of movement of goods and services from a point of demand to that of supply. He noted that, transportation helps to achieve the basic objectives of living in the city. That is functional efficiency of land uses, infrastructure and services, and improvement in the quality of life. Also, Adeniji, (2000) viewed transport as a blood regulatory system whose effective functionality is a necessity for the sustenance of human life in general. Furthermore, Filani (1988) while examining the importance of transport rightly said that, a nation that plays with its transport development undermines the major engines that propel socio-economic, political integration and development. Based on these facts, it is obvious that transport gives us access to goods and services, opportunities for individual mobility and a better quality of life, and is important to the economic and social development of our communities. Transportation promotes our health indirectly through the achievement and maintenance of social networks. Conversely, lack of transport or mobility may damage health by denying access to people, goods and services. Transport thus plays a role in the structure and organization of space and territories. It creates valuable links between regions and economic activities, between population and the rest of the world. Transport is a multidimensional service, which affects several aspects of the economy. Transport is a strategic infrastructure that is so embedded in the socio-economic life of individuals, institutions and corporations that is often invisible to the consumer, but always part of all economic and social functions. Transportation does not exist as an end onto itself. Rather it is a means to an end.

Specific importance and objectives of transportation according to YU, (1982) is summarized in box 2.2 below:

- Makes goods and services available where and when they are needed;
- Facilitate effective use of natural resources.
- Makes various commodities available to consumers and expands trade;
- Facilitate decentralization of industries and also promotes regional specialization.
- A requirement for existence of large-scale production and thus increases productivity and reduces cost of production.
- Foster competition among goods and services in a given market in order to keep them at a low-price and high-quality level.
- Provides mobility in our society for cultural, recreational, and social purposes, and promotes health and educational programmes.
- Contributes to the nation's ability to defend itself.
- Promotes social and political unity of a nation.

Accordingly, transportation acts as a catalyst to join all facets of society together. Also, since it deals with transport network, it forms an important part in overall town and country planning. Transportation is a sine-qua-non for all types of human development social, economic, political, education, cultural, health and religion. Transport is an indispensable tool for all types of human activities. It allows interactions with all types of land uses such as commerce, industries, agricultural, educational etc. It is a means of movement of people, goods and services from one location in space to another (Okoko, 2006). Although, transport involves more than movement of things through space, the movement service is an important aspect of transportation. Transportation is a trademark of a developed society; hence a nation can be described to have attained a given level of development by its transport situation. Scholars over the years have related transport and commercial activities as an interwoven means of development.

Literatures present transport as the means of getting from one place to the other, using different modes of travel. It is also seen as a means to an end and never an end in itself. While Okoko, (2006) sees transportation as a process that involves movement of commuters, goods and services from a given point of origin to specific destination. Culligworth and Nadin (2002) believe that transport constitutes an impediment to the enjoyment of some other things over space; more so that transportation entails mobility and mobility necessitates consumption of basic needs. Thus, transport has always played a major role in urban development since the emergence of cities a couple of thousand years ago (Oyesiku, 2002). In further arguments Culligworth and Nadin (2002), Pacione, (2002) see transport as a means of providing accessibility. This implies that, mobility is not important in itself as much in its provision of access. This view opens up a new vista of reasoning, that of managing land uses and land use relationships to enhance accessibility across the urban space. It should be noted that, the greater the accessibility the lower the need for transport such that transport planning will be more environment friendly if it looks beyond road expansion or elongations and to highly articulate land use mix across cities. Over most of the century, it was assumed that adequate transportation structures needed to be built since they provide an essential underpinning to growth, economic health and livelihoods (Sohail, 2006 and Akinbamiyo, et al 2007). Accordingly, the main concern of transport planners and policy makers was in the supply of transportation and specifically in ensuring that the supporting infrastructure was going to be adequate to support all projected requirements.



## 2.0.5: AN OVERVIEW OF PUBLIC TRANSPORT SERVICE

It should be noted that, public transportation in most cities of developing countries consists of an array of unconventional modes (Armstrong- Wright, 1987; Adesanya, 1998); meanwhile, the increasing urban population and the deteriorating economic situation in many of these countries necessitated the use of these modes (Fasakin, 2001 and Oyesiku, 2002). Studies have shown that, unconventional public transportation has become widespread in Nigerian cities. Considering issues such as gender, equity, safety, convenience, reliability and affordability (Carruthers, et al, 2005); available public transport services in most Nigerian cities particularly Lagos cannot be said to be sustainable, this is based on the fact, buses are often too crowded and sometimes people are to travel over long distance on footboard, thus; risking their lives. The cynosure of this scene is that people particularly the vulnerable groups like women are in mobility dilemma and far from getting a sustainable transport service. It is pertinent to note that, inequality in mobility needs of people in cities necessitated the provision of affordable means of travel. Thus, public transportation enables people without access to private transport of their own to satisfy their economic and social needs which cannot be fulfilled within walking distance (Badejo, 1993). More interestingly, sustainable public transport according to World Bank, (1996) (see box 2.3 below) is one which ensures that:

### Box 2.3: World Bank 1996 definition of sustainable public transport

- *Transportation- related pollution levels are maintained at levels below those human beings can safely tolerate and the environment carrying capacity can allow;*
- *Financial expenditures for operators, maintenance and carrying charges are not higher than what the users can pay; and*
- *Each member of the society is provided with the means to achieve fundamental social, cultural, educational and economic objectives.*

Based on this assertion and the views of DFT, (2002) and Estill Associate, (2003) that, public transportation services is expected to be running at least every 15minutes and should offer more flexible service compare to the car. This implies that, cities attempting to achieve sustainability should make public transport services more adequate and effective to attract users. The concept of “availability” of public transport services refers to route possibilities, timing, frequency and acceptable modes of travel (Carruthers, 2005). In other words, the frequency of available modes of transport is partly an essential indicator of public transportation. Accessibility also emphasis the ease with which all categories of passengers can use public transport (Carruthers, et al, 2005). For instance, buses with high steps are extremely difficult to board by women and those carrying luggage. Accessibility also entails the ease of accessing the bus stops. It should also be mentioned that, travel information forms an important indicator of accessibility. The concept of “affordability” exemplified the extent to which financial cost of journeys put an individual in the position of having to make sacrifice to travel or the extent to which they can afford to travel when they want to. With reference to this discourse, affordability can be viewed as the ability of public transport users to make necessary journeys or any urgent journeys without curtailing other essential activities. Based on affordability level, some categories of people may be forced to curtail the number of trips they make, use modes of transport that do not incur a direct cost (walking) for trips. Appropriate consideration of these concepts to gender issues in transportation planning and needs, will assist to minimize the transport difficulties or crisis in cities and also to formulate gender sensitive transport policy.

## **2.0.6: GENDER, SAFETY AND PUBLIC TRANSPORT**

Gendered phenomenon has over the years being a debatable issue in urban development. This stemmed on the fact that, urbanization and globalization trend often effects changes in productive and reproductive roles of women and men in most cities. Gender is an important pillar or standing point for understanding the dynamic ways in which city activities or variables shape and is shaped by the inhabitants (women and men). Chant, (1991 and 1994), pointed to the fact that, gender is more than a lens through which realities in the society can be viewed, rather; gender is inherent within reality as an important starting point of thinking and reasoning of societal differences or varied needs ascribed or attributed to men and women. Obviously, Chant in his view makes it clear that, gender not only enhances an analysis or interpretation of inequality and inequity; it however facilitates a catalyst for shift/change and empowerment. The concept of gender gives scholars better view of the need for shift from traditionally constructed needs of women and men in our society. It thus calls for integration of new ideas or relations and realities that can take care of the needs of women in the society. Frustration or exclusion from the use of public transport has become a norm in Nigerian urban transport services (Odeleye, 2001; World Bank, 2001; Okoko, 2006); however, lack of adequate understanding of the transportation needs of women and appropriate policy responses to ameliorate women vulnerability and particularly safety in public transportation is a part of a broader failure that needs to be given sufficient attention in developing countries (Ambe, 1999; Ogunsanya, 2003; Oyesiku, 2001). This implies that safety of women in public transportation is of great importance for better living in any society. It can be deduced from the viewed expressed by scholars above that, unsafe public transport services in cities is partly a factor that repels most women from using public transport and thus; very few depends on private automobiles that are costly to maintain while, majority faces the hardships by using preferred mode of transportation.

Gender as a concept is used to provide explanations on roles or functions and variation/ differences between men and women in regards to their experience in the society. Fakoya, et al (2006) in their study on gender involvement in household food security made it clear that, the concept (gender) is used in social science analysis to expatiate on the differences of roles and experience of men and women in the society. Porter, (2008) noted that women and men have distinct experience within the transportation system. Gender differences in public transportation vary grossly across countries but certain features are similar or common. Travel decisions made by individuals in cities have a resultant effect on the quality of life in the city. The problems caused by physical assaults and sexual harassments for instance is critical, because of the impact they make on the livelihoods of the affected groups; particularly the women. While the problems vary according to the situation, those that concerns inefficiency of public transport services, its safety and reliability, all affect the well-being of the people; more importantly females using them. One of the most significant developments in most developing cities like Lagos, Nigeria in the last few years has been the influx of non-motorized transport as public means of movement. This according to Porter, (2008) and Howe, (1993) was attributed to the short supply of conventional or formal public transport services by the government and private operators. Displeasingly, this modes of transport have becomes a threat to most users. For instance; Anans, et al, (2006) and Garrad, (2007) noted that, it contributes to city hardships as a result of expensive cost of travel, fares as well as the use of the means to perpetuate criminal activities in the cities. This according to Mashiri, et al, (2006) and World Bank, (2001) and (1999) affects most women that travel at peak periods; particularly in the night.

The problem of how public transport services can be made more efficient and safe is frequently discussed (Adeniji, 2001; Oyesiku, 2001; Odufuwa, 2006 and Ogunkola; 2007).

Solutions involving registration of all modes of public transport and regulation of their time of operation have not solved the problems of the service in most Nigerian cities (Badejo, 2000 and Okoko 2007). Odeleye, 2001; Petra, 2005; Rivera, 2008 in their studies calls for the consideration of transportation needs of both women and men in the provision and management of transport sector in the city. Walking is noted to be an essential part of movement to access public and private places ESCAP, (2007). Notably in most cities of developing countries, the use of public transportation commonly entails long walking trip compared with the private automobile; based on this fact, it is pertinent that walking environment is viewed as an extension of public transportation system ESCAP, (2007). Scholars over the years observed that, public transport operators are more concerned with journey speeds than with the reliability, safety, convenience and how accessible the service is for users. Lynch, et al; (1988); Buiten, (2007) pointed to the fact that, there is need to consider whether the existing public transport services in most developing cities caters for the pressing mobility needs of the vulnerable groups. They however emphasized that, for public transport in future cities to be an acceptable alternative to private automobiles or cars; operating conditions have to be revisited and improved.

Still in line with these arguments, Turner, et al, (2007) posit that, women faces extreme disadvantages in using transportation services; and are usually ill-catered for by appropriate transportation planning and policy that are more gender sensitive. This assertion was related to the prevailing poverty crisis in most developing countries. It was made clear that the productive roles of women have often been affected by the inadequate transportation services in most developing cities. In other words, it can be said that urban poverty has relationship with transportation. Thus, the drastic increase in urban poverty over the years can partly be attributed to poor transportation. The economic distressed and combination of effects of structural adjustment programmes seems to have gross impact on women (Moser, 1989; Sparr, 1994; Stewart, 1992 cited in Chant, 1996). Studies in recent times reveals that, gender-differentials implications of urban poverty, immobility and city crisis vary from cities to cities, and in connection to transportation in specific term, are fueled by, amongst other factors, the responses or character of professional city planners, governments and approaches or policy adopted towards the provision of public transportation services for the vulnerable groups particularly women and gendered access to transportation resources or needs such as private vehicles, public transport and transportation stations (bus stops) and safety. Peters, (2002) made it clear that, equity and efficiency issues should form the bedrock of the rationales for addressing gender issues in transportation planning and management.

This section of the thesis shows how public transportation is being planned and operated in most developing countries, particularly Nigeria to serve a growing demand for mobility by vulnerable groups like women. As noted in the reviewed literatures, it is always cheaper and easier to “build in” than to “bolt on” and urban and transport planners as well as managers and public transport operators are recently becoming more aware that women as vulnerable groups are an increasing large segment of public transport users and cannot be any longer dismissed as a difficult group. Summarizing this literature and theoretical/ conceptual write up, the sustainability and sustainable transport concepts provides useful framework to be use to examine the state of public transportation service along gender line in cities. The concepts as discussed above provide adequate indicators that can be used to measure the effectiveness of public transport services in cities. Of more relevant to the study is the concept of sustainable transport that emphasizes the issues of availability, safety, affordability, equity planning and gender. To bring this issue to the thrust of my study, one important fact stands out. This is the role of transport in facilitating individual development, promoting livelihoods and minimizing poverty. Also brought to my understanding is the notion that individual travel

needs differs over space, it is however expected that transportation planning and policy should integrate gender dimension. Above all, the relationship between gender and transport (public transport) and the need for gender sensitive transport policy in relation to safety is what the study stands to address.

### **2.0.7: THEORETICAL ISSUES**

Provision of sustainable public transport has continuously attracted several attentions, but painfully issue of gender and crime is yet to be given detailed academic discourse. Various theories and concepts were applied to elaborate the issues of crime and public transport services. For instance, Behavioural Theories offer insights into why individuals and sometimes groups of people engage in criminal activities; and Environmental Criminology Theories are also relevant to this study. It should however be noted that this study/thesis is linked to two fundamental areas of transport planning and management;

- (i) Sustainable transport and
- (ii) Safety and security- crime.

More importantly, four Environmental Criminology Theories were used in this study. They are:

- (i) The Routine Activities,
- (ii) Rational Choice Perspective,
- (iii) Crime Pattern and,
- (iv) Broken Windows.

The Environmental Criminology Theories are generally based on the premise that collectivity of a series of factors is likely to trigger crime (Tabangin, et al; 2008; Bottoms et al; 1997; Clarke, et al; 2003 and Newton, 2004).It argues that crime is a reflection of the prevailing condition or situation in a society. It goes further to posit that, location, potential to commit crime, environment, guardian, targets, offenders are basic factors that explain the possibility for crime to take place, and it emphasized that criminal activities can better be addressed if necessary attention is given to these features, and bearing in mind time and space. According to TRB, (2003); security is viewed as the actual degree of safety from crime or accidents and the feeling of security resulting from that, and other psychological factors. Is worth noting that security consists of safety from crime, safety from accidents and perceptions of security.

The main argument of the routine activities theory as postulated by (Cohen, et al; (1979) is that there is a blend in time and space of three basic elements, which invariably enhances or leads to occurrence of crime. These elements include:

- (i) Presence of motivated offender
- (ii) Lack of a guardian, and
- (iii) Presence of suitable targets.

It is interesting to note that the interplay of these elements in our society is a reflection of day-to-day movements. Likewise the increasing number of unemployed people which invariably increases the number of offenders, poor city management strategies in terms of

security, prevailing economic situations and unavoidable socio-economic activities that forces people to embark on movement or trips, ultimately and collectively gives an indication of crime that can occur. In other words, trips by public transport form part of the daily routine activities of offenders, target groups or victims and guardians/security officials.

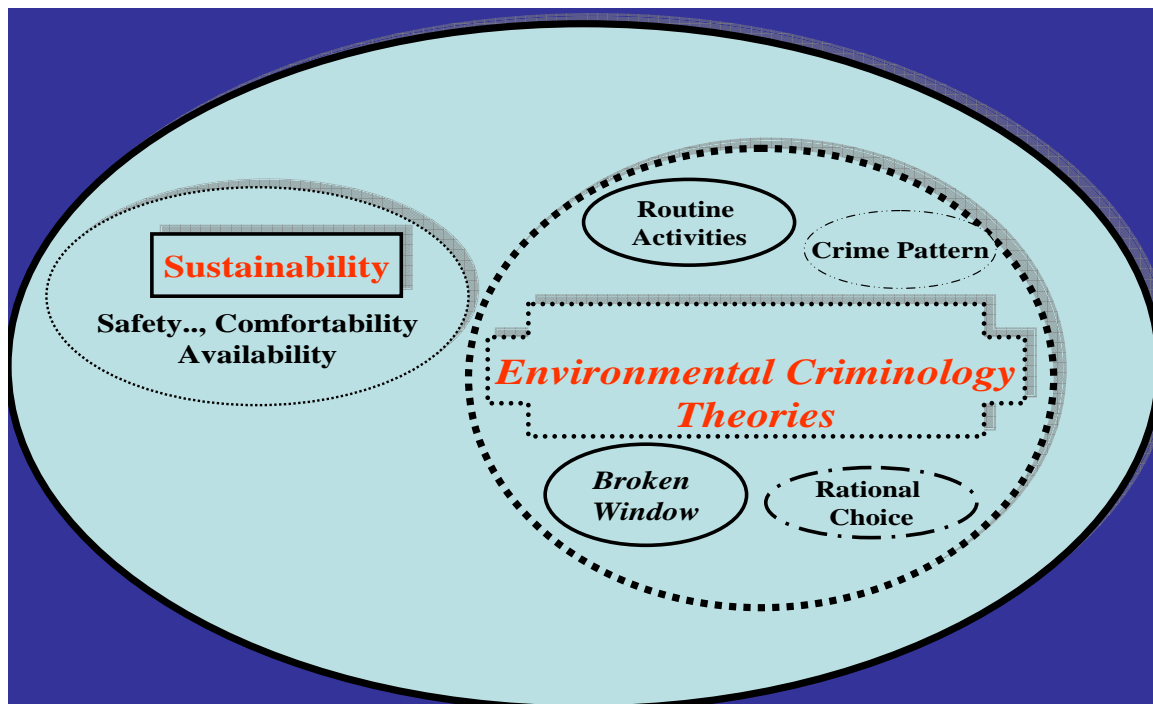
The rational choice perspective is intimately associated with the theory of crime prevention through an effective design of public facilities. It argues that, crime perpetrators will choose their targets, rationally choices location that can yield maximum net outcome and accomplish their aim in an explainable manner (Cornish et al; 1986). It assumed that crime is a purposive action stem on the needs of the perpetrators to meet their basic needs by all means, and which can partly be debarred by timing and availability of information. The theory, specifically with regard to public transport planning and management addresses the notion of why a public transport system is conducive to crime. It is also relevant to society where social disruption, such as economic depression leads to or forces people to aspire to goals that are structurally unattainable.

The crime pattern theory posits that “crime is an event that occurs when an individual with some criminal readiness level encounters a suitable target in a situation sufficient to activate that readiness potential” (Brantingham et al; 1991 and 1993). This view perceives crime as an action that takes place in a location and within a specific situation. According to Brantingham et al, this situation which they called “environmental backcloth” encompasses the social and legal characteristics of physical infrastructure that are required to be examined in order to address issues of criminal activities. This theory has three components that are related to issues of public transportation and movement generally. These include nodes, paths and edges. This idea in transportation study can be viewed as network connectivity. The nodes refer to location where activity occurs and it can be linked by paths, and require movement between nodes; and edges showcase the surrounding elements of the nodes and paths. The broken windows theory advanced by Wilson, et al; (1982) also offers an insight which is applicable to public transport infrastructure. For instance, deteriorating public transport facilities and services can result in a higher crime rate and fear of crime in public transport services. Specifically, run-down stations and vehicles, poor land use management in terms of location of bars etc, can precipitate crime.

It is pertinent to note that theories discussed above are relevant to this study. However, the focus of this study will not be fulfilled if the idea of crime generators and attractors in public transport system is overlooked. Stemming from the view of the postulator of the idea (Brantingham, 1995), public transport stations can effectively act as crime generator and attractors or fear generator. Obviously, apart from crowded stations that can foster crime, the nature or situation of the station in terms of facilities; as earlier said (dirty, lack of seats, poorly supervised, no lighting, etc.) are good generators or attractors of crime. It is also worth noting that, high rate of demand for public transport that surpasses the supply, leading to rushes for available vehicles during peak periods; which can facilitate the opportunity for crimes to be committed. The condition of most public transport stations, walking environments before boarding, and poor management or operational pattern of available modes of public transport generates fear to users, particularly women (suitable soft targets). Given this sustained interest, fear can be viewed as the immediate response of most users of public transport to crime or danger. It is, however, an emotional reaction to danger. In other words, perceived danger or crime in public transport system often results in emotional disturbance that can be expressed as fear. Interestingly, the increased knowledge about criminal activities in public transport serves disturbing purposes, for instance, users often think about coping mechanisms which may attract extra travel cost and sometimes prolonged travel distance and time.

The relevance of these theories is clearly apparent and relevant to this study. They are all expressed, albeit implicitly in some cases, in the public transportation planning and management, as well as in design of facilities observable in most developing country cities like Lagos. In actual fact spatial and non-spatial attributes are vital to the analysis of criminal activities in public transport. For example, land use, physical infrastructure, travel information and socio-economic variables provide valuable insights into criminal activities in public transport. Stem on the fact that, criminal activities on public transport takes place within walking, waiting and in-transit, the applicability of theories discussed above is evident for study that seeks to examine the mobility needs and difficulties in terms of crime encountered along gender lines. As advocated by Newton, (2004), a public transport system should be examined in its entirety. This is similar to the view of DETR, (1999 and 2002), the “whole journey approach” as a requirement to address crime on public transportation. This fact was further made clear by DETR while stating that “*the best priority is a holistic treatment*. This implies that public transport is a system, and any default in one part will simultaneously affect the whole.

**Fig. 2.1: Theoretical Issues Addressed**



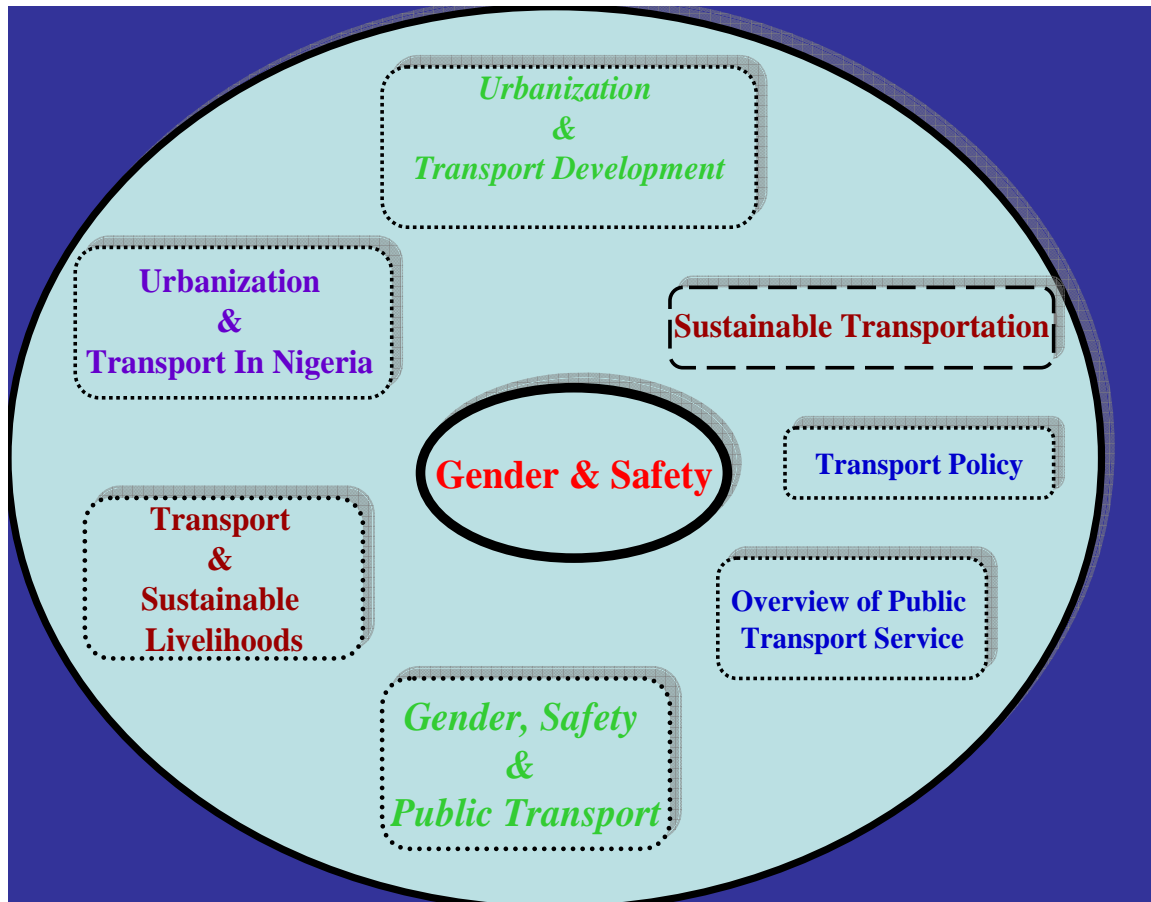
*Source: Based on Author’s Reviewed Literature*

### 2.0.8: A GLANCE AT THE GAP IN LITERATURE

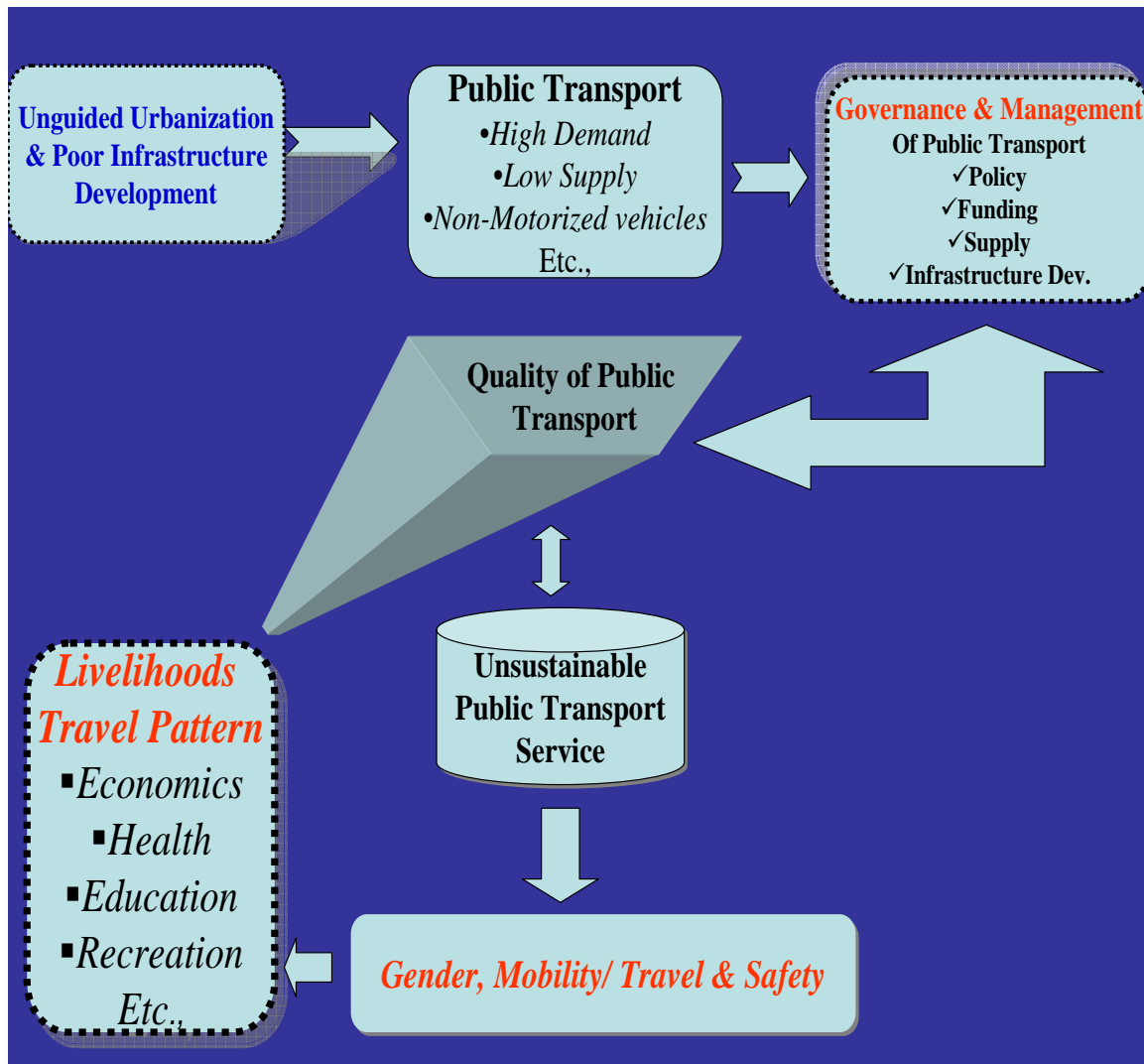
Transportation serves an inevitable role in the socio-economic development of individuals and nations all over the world. It facilitates mobility which is a sine qua non for the survival of any nation or society (Filani, 2001). The issue of gender and transportation has yielded extensive literature discussing different aspects of gender and transport in most countries. The importance of transport to both women and men in the transport market (Sicat, 2007; Anand, et al; 2006) and the relationship between socio-economic variables and transport along gender line have been documented (Okoko, 2008; TRB, 2006 Hamilton, et al; 1989 and 2005). Discussions about the travel pattern of women, and pros and cons of public transport to women have been revealed in several studies (Hanson, et al; 1980; Porter, 2008;

Rosenbloom, 1993). Authors have analyzed the constraints faced by women using different modes of public transport (Asiyanbola, 1999, 2002; Oyesiku, et al; 2002 and Odufuwa, 2007). General overviews of public transport services in developing countries have been provided (Vandu-Chikolo, 2004; Odufuwa, 2006; 2007; Adeniji, 2000; Mbara, 2002 and Joewono, et al; 2006), as well as reviews of impact of public transport on modes or pattern of dressing (Oyesiku, et al; 2002) and decisions on household automobile ownership (Odufuwa, 2007). Difficulties encountered when using public transport are well known and have been mentioned in most relevant literature. In recent publications the link between culture and mobility of women has been revealed (Rivera, 2007 and Fernando, et al; 2002). However, the above-mentioned studies do not focus specifically on crime in public transport and its implication on the livelihoods of women. This forms the gap that this study aims to fill. It should be mentioned that most studies on safety are focused on accidents and rarely on criminal activities, specifically along gender dimension. In general, there is an urgent need to examine the impact of criminal activities encountered by women when using public transportation. The World Bank has noted this area (gender and crime in public transport) as being among their priorities of under-researched topics.

**Fig. 2.2: Summary of Reviewed Literature**



### 2.3: CONCEPTUAL / THEORETICAL FRAMEWORK



Source: Based on Author's Reviewed Literature and findings



## CHAPTER 3

### RESEARCH METHODOLOGY

#### 3.0: INTRODUCTION

Haven reviewed relevant literature and examined pertinent theories of this study, it is appropriate here to highlight the modality necessary for successful accomplishment of the aim and objective of this study. Again it is important to bear in mind that the focus of this study is to examine the effect of prevailing criminal activities in public transport on the livelihood of women. This study however covers an array of importance in urban management and development. This study will bridge these areas of urban management and development to analyze the implications of crime in public transport on women's travel pattern and general livelihoods. Both theory and reality or practice was given necessary considerations in this study.

The Environmental Criminology Theories were discussed based on sociology, economics, public administration and environmental planning disciplines. The main rationale of criminal activities and inadequate public transport service stem from the inefficiency on the part of government to provide necessary facilities and to adequately manage the basic life supporting elements. However, gender dimension in terms of safety or crime in public transport is a new wave in transportation planning and management. Thus, there is need for empirical evidence that provides valuable proof for this study. Therefore, this study covers both theoretical and empirical aspects of the main topic.

#### 3.0.1: Research Questions

This thesis focuses on the safety of women when using public transport services in the city of Lagos, Nigeria and it centres on different empirical justifications or perspectives. This forms the basis for the main research question:

- **What Effect Does Criminal Activities in Public Transport Have On The Travel Pattern Of Women, and What Can Be Done?**

As described earlier, this thesis is rooted in both theory and empirical analysis. The theoretical aspect described concepts and theories that reveal linkages between crime or safety and public transport. The empirical part dealt with data analysis to examine the reality of the issues. To brighten the focus of the study, four sub-questions were formulated, linking statement of problem to three previously highlighted objectives of the study. The first two sub-questions are related to theory, and the subsequent two sub-questions were empirical or scientific in nature.

The term gender and safety are usually viewed from traditional perspective; gender for instance is often taken to be sex or biological differences existing between man and woman. While, safety is usually taken, and only to be freedom from accidents. Broader definitions are necessary in order to fully understand the basic tenet of this study. This leads to the first and second sub-questions:

- (i) What are The Factors That Generate or Propel Crime and Fear of Crime When Using Public Transport?*
- (ii) What is Gender and Safety in Operational Objectives of Public Transport Services?*

The prevailing demands for public transport, economic situation as well as the process of managing public transport have changed the industry dramatically. It is however, one of the main objectives to study the effects of unregulated and inadequate public transport service on the livelihood of women. Thus, this leads to the third question:

*(iii) How Does Crime and Fear of Crime in Public Transport Affect Women's*

Based on the fact that different stakeholders or actors are involved in provision of public transport services and the need for change in behaviour and management approach towards improve public transport. This study through a review of operational and management pattern of public transport in developed countries, seeks to understand the importance of considering the mobility needs of all users of the service. This led to the fourth question:

*(iv) What Lesson Can Be Learned From Gender Sensitive Public Transport Service*

Finally, the issue of policy implications and recommendations were addressed. In other words, policy-makers in public transport needs proven advice on how to design and implement policy that can effectively reduce the alarming criminal activities in public transport services. Therefore, the final research question entails:

*(v) What Are the Policy Recommendations for Stakeholders on Criminal Activities in Public Transport Services?*

### 3.0.2: RESEARCH HYPOTHESIS

#### *First Hypothesis*

- **Alternative Hypothesis (H1)** - There is significant relationships between socio-economic characteristics or variables of women (respondents) and the use of public transportation in Lagos metropolis.

**OR**

- Socio-economic variables or characteristics of respondents have a significant effect or is a determining factor of the use of public transport in Lagos metropolis
- **Null Hypothesis (H0)** - There is no significant relationships between socio-economic characteristics or variables of women (respondents) and the use of public transportation in Lagos metropolis.

**OR**

- Socio-economic variables or characteristics of respondents have no significant effect or is not determining factor of the use of public transport in Lagos metropolis.

#### *Second Hypothesis*

- **Alternative Hypothesis (H1):** Travel environment is a significant factors that generate or propel criminal activities in public transport
- **Null Hypothesis (H0):** Travel environment is not a significant factors that generate or propel criminal activities in public transport

### 3.0.3: OPERATIONALIZATION/ DEFINITION OF VARIABLES

**Table 3.1: Operational Definition of Variables**

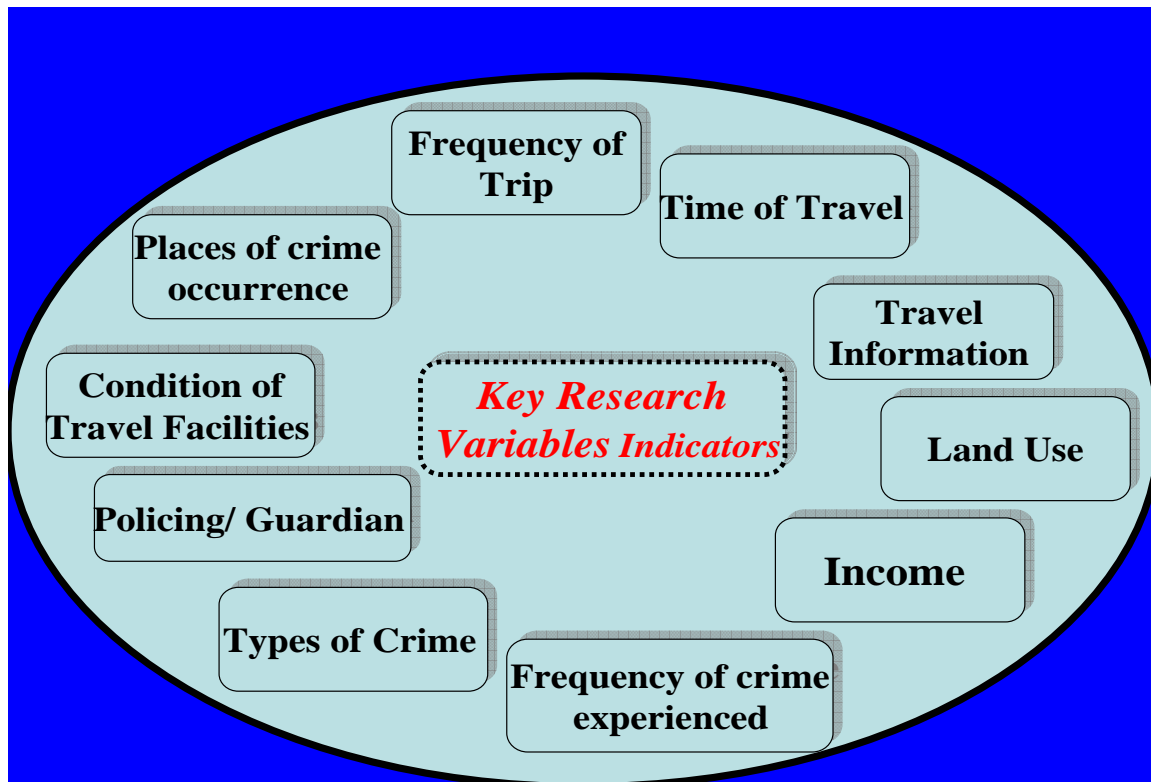
<b>Variables</b>	<b>Operational definition</b>
Public Transport	Transport service render to users based on agreed fare, cost or charges
Sustainable Livelihood	Pattern of living that is presently appropriate, and which will not be affected or distorted in the future
Land use pattern	Different Uses or Activities That Land is Use For to Achieve an Aim.
Availability	Adequate Supply of The Service When Needed
Equity	Consideration or Planning With The Needs to Users
Crime	Danger Due to Criminal Activity, Assaults, Theft, Harassment, etc.,
Oppression	Travel Environment Which Through Their Vast Scale And Authoritarian Nature Diminish Women Identity
Para-transit	Small Passenger Transport Vehicles Operating Informally On A Fare-Paying Basis.
Overcrowding	Lack of Space To Carry Out Desired Activities, Rowdy Services, Loss Of Travel comforts,
Destruction of Transport Facilities	Deterioration or Erosion Of Public Transport System/ Facilities, That Stimulate Potential Criminal or Offenders
Ugliness/ Inadequate	Travel Environment Or Bus Stops Which Are Unpleasant To The Sense of Sight, Smell, or Are Littered With Trash, Dilapidated.

### 3.0.4: VARIABLES AND INDICATORS

**Table 3.2: Variables and Indicators**

Questions	Variables	Indicators	Data Sources
<i>What is Gender And Safety in Operational Objectives of Public Transport Services?</i>	Modes of Public Transport Reliability of the Service Access to the System Quality of The Service	Types or Purpose of Trip Availability	Academic Literature Users and Operators of Public Transport and Transport Management Authority
<i>What Are The Factors That Generate or Propel Crime And Fear of Crime When Using Public Transport?</i>	Travel Environment Transport Policy Operational Pattern and Management Approach	Passengers waiting time at bus stop, Condition of walking distance, Interchanges between routes and services, Journey times, Infrastructure, Comfort and quality of ride, Modal choice, Modal split, Change in Demand and Supply of Public transport	Users of public Transport, Direct Observation, Literature review
<i>How Does Crime and Fear of Crime in Public Transport Affect Women's Travel Pattern?</i>	Pattern and Frequency of Crime Travel Pattern	Travel time, Availability of Travel Modes, Efficiency and Safety, Demand for the service	Users, Operators of Public Transport, Field Observations, Review of Academic Literature
<i>What Lesson Can Be Learned From Gender Sensitive Public Transport Service and Facilities?</i>	Benefits of Improved Transport Infrastructure, Gender Sensitive Transport Policy.	Design of Bus Stops Travel Information Ticketing System Availability of Travel modes	Perception of Respondents Review of academic literatures
<i>What Are The Policy Recommendations For Stakeholders On Criminal Activities in Public Transport Services?</i>	Gender Sensitive Transport Policy	Barriers for Incorporating Gender into Transport Planning Management Approach	Users and Operators of Public Transport Review of Literatures

**Fig. 3.1: Key Research Variables Based on Reviewed Literature and Theories**



### **3.0.5: RESEARCH METHODS AND STRATEGY**

The research method advanced for this thesis involved a logical plan of activities and process of research that painstakingly determine the worthiness and credibility of an academic publication such as this. This study was conducted in Lagos metropolis; Nigeria. It is located in the South Western part of Nigeria. The questionnaire, field observations and informal interview formed major research instruments. Data for the study were obtained through primary and secondary sources. Secondary data were obtained from various extensive literature- published and unpublished materials, technical reports, thesis and journal articles. Digitized maps were also used for description of spatial characteristics of the study area.

### **3.0.6: UNITS OF ANALYSIS**

The units of analysis for this study cut across safety and public transport system in Lagos, Nigeria. The basic tenet of this study is to explore the implications of increasing wave of criminal activities in public transport on the travel patterns of women in the study area. It aim at the need for a crime free and improve public transport services for users, specifically for women. Therefore the units of analysis are Lagos Metropolis and Public transport users (Women and Men) and operators.

### **3.0.7: DATA COLLECTION**

This empirical study was rooted in primary and secondary data. This fell within the realm of understanding the trend of the focus of this study locally and globally.

### **3.0.8: PRIMARY DATA**

This study was rooted in an extensive field work between July 2<sup>nd</sup> to 25<sup>th</sup> 2009; based on the use of primary, secondary data, informal interview and field observations in the study area.

### **3.0.9: THE QUESTIONNAIRE INSTRUMENT**

Questionnaires for each group of respondents were divided into three sections, the first section sought information about socio-economic variables (general characteristics), while the second section probed into travel characteristics, safety and crime in public transport. Specifically, information sought included travel characteristics, purpose of trip, mode of travel, trip frequency, criminal incident and intensity, cost of travel and travel difficulties, travel time, modes, suggestions on the means to improve the service, respondents were asked to recount and record at least one incident of bad public transport service that leads to harassment or assaults that they witnessed or be a victim, etc. The last part of the questionnaire, probed into perceptions about factors responsible for the existing situation, who are the most vulnerable groups involved, what aspect of public transport service needs to be addressed or improved, who are the notable stakeholders to be involved and what should be their roles. Above all, respondents were asked to make their intention known about the use of public transport in future if safety or security issues are improved. (See Fig. 3.1 for key research variables).

### **3.0.10: STUDY POPULATION, SAMPLE AND SAMPLING**

The locale of the study is Lagos with a population of 9.1million inhabitants. Towards getting a representative sample, stratified random and purposive sampling techniques were used. It should be noted that Lagos Metropolis comprises of 16 local government areas. Thus, the study was conducted in four Local Government Areas of Lagos Metropolis. The area was stratified into high, middle and low income density. This was done based on the existing stratification status of the residents and population densities. Among these are; Ikoyi located in Eti-Osa LGA- (Planned low density area mostly dominated by both high and middle income class); Ebute-Metta located in Lagos Mainland LGA (Planned high density area dominated by middle and low income class); Ifako-Gbagada located in Kosofe LGA (Unplanned low density area dominated by the middle income class). Mushin located in Mushin LGA (Unplanned densely populated area dominated by low and middle income class).

Stratified random sampling and purposive sampling techniques were used to sample 95 female users of public transport – respondents; 15 males were chosen as a control group. Four (three females and one male) final year students of Transport Planning and Management and Urban and Regional Planning of my University were educated on the subject matter and recruited as research assistants for administration of questionnaires. They were supervised by me and two academic colleagues of my Department. Invariably, the sampling frame was the female users of the chosen local government areas and the male respondents were used for clarifications of some findings and to ensure reliability and validity of the data set.

Apart from limited time frame, the chosen sample size was based on empirical fact that random selection of small sample from larger population always gives a true representation of the area (Black, 1993; Babbie, 1998 and Bailey, 1982). For instance, Bruton, (1975) cited in Ogunkoya, (2008) gave a sample size of 10% for areas below 50,000 and 1% is recommended for areas with population of 1,000,000 and above. In similar vein, studies conducted by Aluko, 1996; Arimah and Adinnu, 1995 cited in Somuyiwa, 2008) used 1%,

while less than 1% was used by Olokesusi (1994) and Havlicek (1985). Furthermore, PAI Associates used only 150 questionnaires for the city-Lagos in the study conducted in 1982 and recommendations were made based on their findings (see Adedibu, 1989).

Based on related studies and notion that, operators of public transport are notable stakeholders, information was obtained from operators of public transport through an informal interview. Information elicited for include; their socio-economic variables, operational pattern, response to female users of public transport and perceptions on crime in the service and the need for gender sensitive transport policy. It should be noted that, administration of the questionnaires was done by hand delivery (On the spot collection of questionnaire). The language used for the survey was combination of the local language and English.

### **3.0.10: SECONDARY DATA**

Secondary data for this study was based on extensive literature review. The review of academic papers relevant to the focus of the study helps to brighten the arguments of this study. Based on lack of reported cases of crime to relevant authority, records of crime in public transport are not readily available. Thus, academic papers and books addressing this issue, particularly from developed countries, and containing valuable data were used.

### **3.0.11: INFORMAL INTERVIEW**

Informal Interviews were conducted on five operators of public transport and ten users in the study area. It should be mentioned that, the interview were conducted when researcher is on trip (as passenger and sitting closely to the driver); this was due to hostility of operators of public transport union to grant a formal interview.

### **3.0.12: FIELD OBSERVATION**

Field observations of traffic and travel environment and behaviour in the study area were meticulously observed during peak and off-peak periods. A digital camera was used to take relevant pictures of traffic situation, travel environment etc. at strategic and hidden locations to avoid brutalization of the author. Field notes were used to document relevant cases on field to avoid lost of valuable field experience and data or information.

### **3.0.13: ANALYSIS OF DATA**

Again it needs to be bear in mind that, the major tenet of this study is to explore the implications of increasing wave of criminal activities in public transport on the travel pattern of women in Lagos, Nigeria. In doing this, data collected were analyzed using simple descriptive statistics such as, frequency distribution, cross tabulation, percentages and ratios. In addition, more scientific evaluations such as correlation and regression analyses were carried out to enable the study to draw valuable inferences from the data. The correlation analysis was used to establish the relationship between safety in public transport and socio-economic characteristics of women; while the regression analysis was used to measure and explained the implication of crime and fear of crime in public transport on the travel pattern of women. To identify the most significant factors that determines and explain factors influencing criminal activities, stakeholders to be involved and their expected roles towards curtailing crime in public transport, the Factor Analysis was used.

It is valuable to point to the fact that, respondents were employ or asked to rate the most important variables from a given factors based on their perception about crime and public transport, using the Likert-scale from 1-5 points. In other words, their perception about the situation and what can be done and who are to be involved were analyzed using partly the

Likert-Scale approach. Factor analysis was however used to reduce the number of variables, with the aim to limit the burden of inference to be drawn from the findings and analysis. This helps to minimize the variables or use small number of variables to provide possible explanations on the issue. This method was adopted based on related studies and reviewed literature (Joewono, 2006; Li, et al, 2005; Syed et al, 2000 and Koh, 2006). Due to the small variable and sample, the Bartlett's test was done to confirm the possibility of using the method. Also, a rotational oblique method was reviewed and applied to this situation. This was done in order to reveal or have a clear view of factors that are highly correlated. According to Hair, et al, (1998) cited in Joewono, (2006) and Timmerman, (2005) a factor loading of 0.65 needs a sample of 70 for it to be said is significant. This justified the possibility of using this method of analysis, because the chosen sample for this study was 95. It should also be mentioned that, variables with the highest weight or loading is believed to give adequate explanations about the factor. This was exemplified in various studies conducted over the years on relevant cases (see, Boyacioglu, et al; 2005; Joewono, 2006; Koh, 2006).

### **3.0.14: DATA QUALITY**

#### **Reliability and validity**

Reliability of the research instrument was conducted using test-re-test method. Questions in the research instrument were pre-coded, pre-tested and modified in consonance to identified shortcomings during pre-test. This was done by administration or collection of data at different locations and time of travel. Recruitment of research assistance for simultaneous data collection and observations facilitated the cross-checking and enhanced the reliability of the outcome or judgment.

Validity of this study was done by triangulation of collected data and research methodology or techniques used. This involved the use of an array of methods or techniques for data collection and analysis. For instance, field observations, administration of questionnaire using appropriate sample size and sampling techniques. Also, to have a reasonable validity level of the study instrument, analytical techniques used included both descriptive and parametric techniques.

### **3.0.15: SCOPE AND LIMITATIONS OF THE STUDY**

Apart from the very short research time, unfriendly responses of public transport operators, inability to have formal interview with the state traffic management authorities and public transport operators were the shortfalls of this study. However effective management of time, small sample size and four research assistants helped to partly solve the problem of time. Formal or official records of criminal activities relevant to the focus of the study were not readily available. Similarly, studies conducted on crime and public transport were limited to developed countries. Nevertheless, fund for travel around the city with the aim of conducting an informal interview with operators of public transport is another challenge faced. It should also be mentioned that some respondents are not willing to respond due to fear of being attack under the pretend of conducting a research. This was solved by the involvement of female research assistants. More importantly, the inability to control weather particularly rainfall led to reschedule of administration of some questionnaires.



## CHAPTER FOUR

### EMPIRICAL FINDINGS, ANALYSIS AND INTERPRETATIONS OF FINDINGS

This chapter x-rayed the analysis of data collected. It examined the socio-economic, demographical characteristics and travel environment of respondents. It explored types of crime and further examined the relationship between safety in public transport and travel characteristics of respondents (socio-economic). Also, it elucidates the implications of crime and fear of crime in public transport on the livelihood of respondents. Above all, most significant factors that influence criminal activities in public transport were identified, while what can or need to be done and who is to be involved were explained.

#### 4.1: SOCIO-ECONOMIC AND DEMOGRAPHICAL CHARACTERISTICS

Table 4.1 reveals among others the mean value respondents age (34.72). This gives an impression that all the respondents sampled were mature and can clearly express their feelings with regards to the scope of the study. Similarly, less than 10% of respondents have no formal education, while the largest proportion of respondents have at least a secondary school certificate with a reasonable income to live from. This implies that most respondents were literate who understand what it means to have a sustainable transport system and in particular could easily rate the existing public transport services. Apart from this, views of different segments of the population in terms of educational and income level allowed the study from been bias.

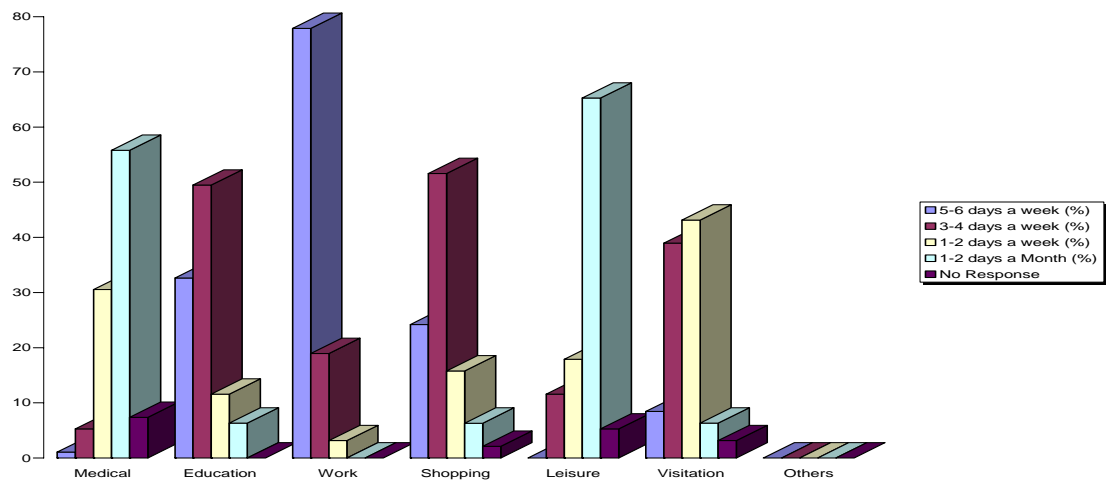
Frequency of trip by activities of respondents is shown in fig. 4.1. It is obvious from the chart that about 79% and above 34% of trips made per week accounted for work and education respectively. Findings show that most respondents depend on public transport for spatial interactions. Among the modes mentioned include, the big yellow buses “molue”, mini-buses- “danfos”, commercial motorcycles- “okadas” among others. This implies that the livelihood of respondents lies within their ability to engage in economic activities (work); which is facilitated by their ability to move over space and interact using different types of public transport. Based on this finding, it should be mentioned that most respondents, however, rely on transportation, specifically public transport as an enabler to achieve their needs. This fact however, buttressed the point raised by Sohail, (2005 and 2006) in his study; he made it clear that public transportation helps to avoid being isolated. In other words, it is a viable link to other needs in the society. According to a respondent “without it, life cannot be said to be convenient”. According to some respondents, taking children to and from school forms part of their routine activities, which can be accomplished by good transport services, particularly public transport. It is interesting here to stress the views shared by respondents; most respondents prefer to personally take their wards to and from school; though this was attributed to extra transport cost charged by the school, but more importantly they agreed to often do this to avoid kidnapping of their wards. Based on some informal interviews with respondents particularly those that make arrangement with public transport to pick children from school. It was made known that; they always monitor the trip of their children using the mobile communication (GSM). This is to ascertain or be sure that children are taken to expected destination (Home and School). This fact however showcases an interesting area that demands further academic research or study. These views were justified by few operators of public transport that shared their experience with the author. Some operators have formal arrangement with users of public transport service. This involves legal arrangements in form of written documents between the operator, users and legal practitioners.

**Table 4.1: Socio-economic characteristics of respondents**

	<b>Respondents by gender (%)</b>	
	<b>Female</b>	<b>Male</b>
<b>Age</b>		
Less than 20 years	5.26	20.00
21- 30 years	20.00	06.67
31- 40 years	37.89	46.66
41- 50 years	28.42	20.00
Above 50 years	06.32	06.67
No response (Missing Value)	02.11	-
<b>Education</b>		
Primary School	25.26	13.33
Secondary School	32.63	26.67
Tertiary (Bsc & Post - graduate )	30.53	47.00
No Formal Education	08.42	13.33
No Response (Missing Value)	03.16	06.67
<b>Income</b>		
Less than #5,000	02.11	06.67
#5,000 - #15,000	07.37	13.33
#16,000 - #25,000	29.47	06.67
#26,000 - #35,000	46.32	53.33
Above #35,000	09.47	20.00
No Response (Missing Value)	05.26	-
<b>Marital Status</b>		
Single	55.79	86.67
Married	41.05	13.33
No Response (Missing Value)	03.16	-

**Source: Author's Field Survey, 2009**

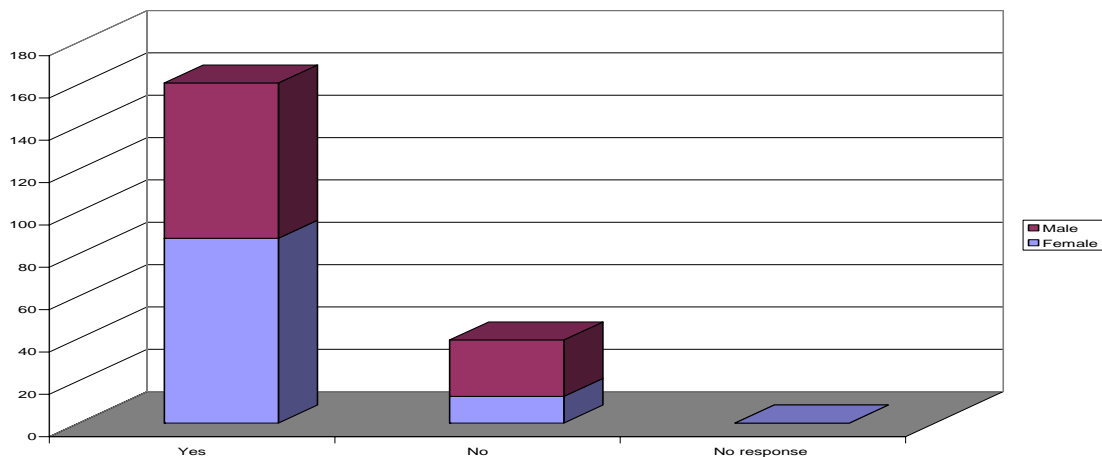
**Fig. 4.1: Purpose/ frequency of trips**



**4.2: Travel Pattern and Crime**

Fig. 4.2 described the comparative responses between female and male (control sample) in response to the research question about fear of crime while using public transport. Findings show that more women than men are afraid of crime when using public transport in the study area. It should however be mentioned that, both women and men are afraid of criminal activities when using public transport. This result appears plausible as table 4.2 reveals that both women and specifically men with their assumed physical capability are also victims of crime in public transport. According to a female respondent, *“physical capability of men is not a significant measure for tackling criminal activities in public transport; we women are just unlucky to often be victims of crime”*. This response corroborates study of Cozens et al, (2004) on fear of crime in railway stations. Though, more women (above 70%) than men were victims of crime and painfully with serious impact or high intensity as presented in table 4.2 and fig. 4.3. According to observations and a brief informal interview, it was made known that anybody can fall victim, but most women are often victims of crime in public transport. This was partly attributed to their physical inability to withstand attacks from perpetrators of crime. This finding complement Brantigham, (1995) discursion in the environmental criminology theories as reviewed earlier in the literature.

**Fig.4.2: Response on Fear of Crime in Public Transport**

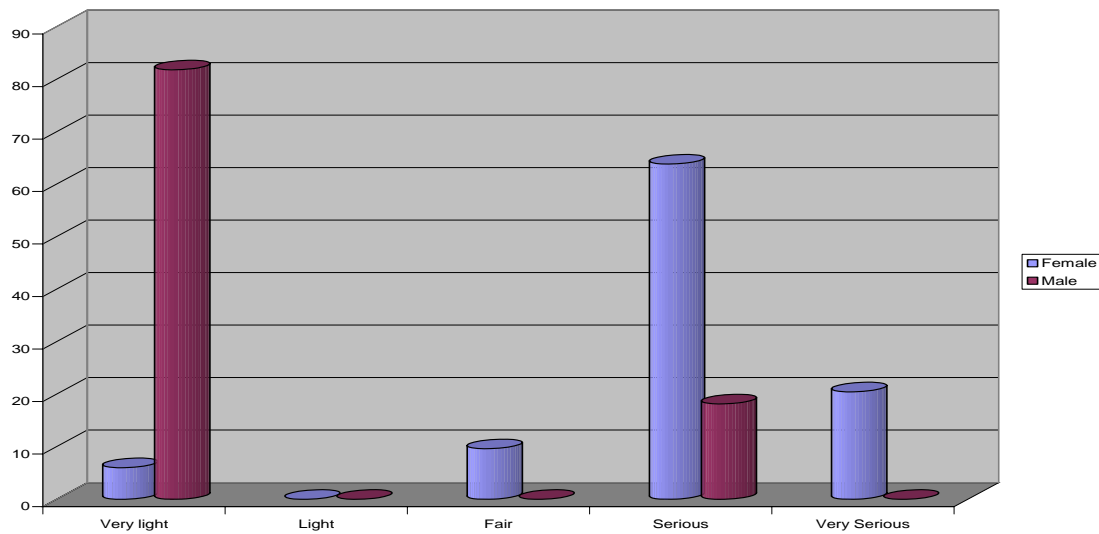


**Table 4.2: Experience of crime (%)**

	Responses	Female	Male
Victim of Crime when Using Public Transport	Yes	87.37	73.33
	No	12.63	26.67
Frequency of Occurrence	Once	02.41	63.64
	2-5 times	75.90	27.27
	Often	21.69	09.09
Intensity of Impact	Very light	06.02	81.82
	Light	-	-
	Fair	09.64	-
	Serious	63.86	18.18
	Very Serious	20.48	-

Source: Author's Fieldwork, 2009.

**Fig.4.3: Intensity of Crime Experienced by Respondents**



Based on one of the objectives and research question of the study, table 4.3 shows a cross tabulation of criminal activities encountered by both women and men. Respondents identified physical harassment/ assaults, sexual harassment, raping, pick-pocketing, kidnapping, robbery etc., as crime incidents commonly experienced in public transport. It is disturbing to find or know that women compared with men are mostly affected by all types of crime ranging from pick-pocketing to rape or sexual harassments. It is also pathetic to find that some respondents have experienced been raped when using public transport. It should however be made known that respondents never gives a clear indication of being raped when interviewed, but they shared information on victims of rape in recent time. It was made

known that public transport has “led to death of innocent ladies who are victims of rituals”. Probing further into this research area, respondents made it known that government has given specific time for operators of motorcycle in the city in order to curtail the use of this means of public transportation for criminal activities; but, according to respondents enforcement of this regulation is however ineffective, partly due to violations by operators.

**Table 4.3: Types of Criminal Activities Experienced By Respondents (%)**

Types	Female (%)	Male (%)
Pick-pockets/ pilfering/snarfing	37.35	63.64
Robbery	10.84	18.18
Inflicting Injury	13.25	-
Physical Harassment	27.71	18.18
Kidnapping	01.21	-
Rape/sexual harassment	09.64	-
No Response/ Missing Value	-	-

Source: Author’s Fieldwork, 2009.

**Fig. 4.4: Crime Experienced By Respondents**

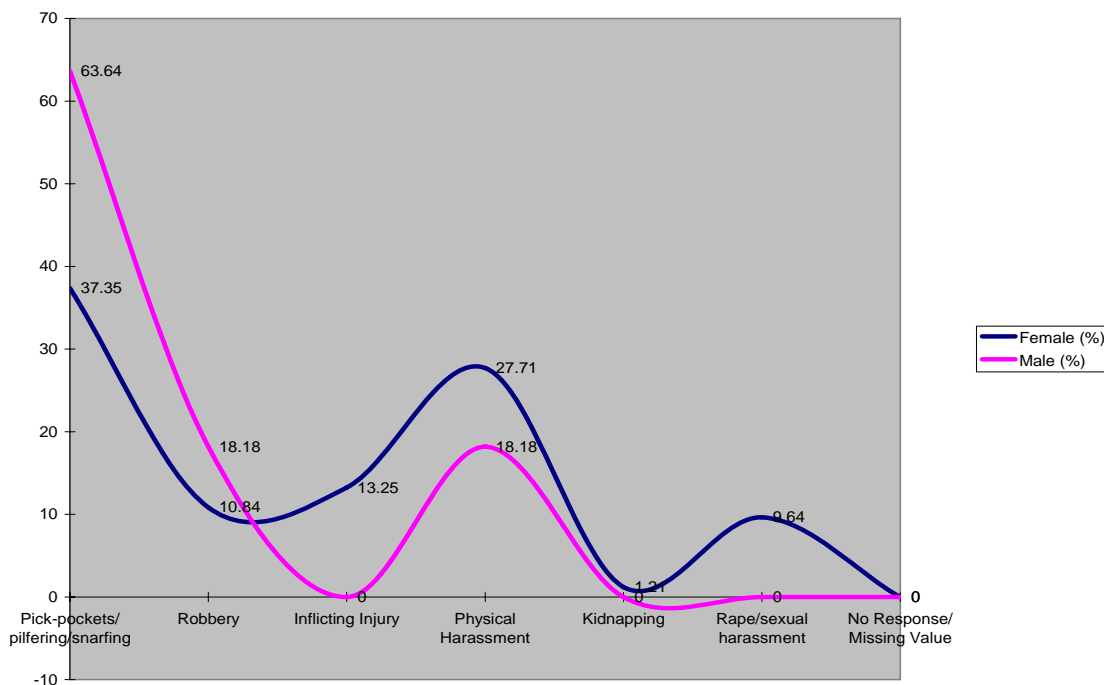


Table 4.4 presents frequent places of occurrence of crime when using public transport. Clearly, a significant proportion of respondents experienced or were victims of crime when waiting at bus stops for public transport service. In other words, this “wicked problem” takes place at the station or bus stops; this is followed by crime in transit. Respondents also

experience crime while on-board. It is pertinent to note that, though crimes occur when walking to and from bus stops/ stations, but it is more apparent at bus stops while waiting; particularly at peak periods and while on-board. These findings complement study conducted by; Cozens, et al, (2004). Is also in the same vain with arguments of Pulugurtha, (2008) and Ryan, et al, (2009) in their various studies on the use of public transport. Findings and observations reveals that most bus stops or stations generate a significant level of crime. Many bus stops are conducive environment for criminal activities to take place or occur. Respondents explained that factors responsible for this anti-social behaviours centres on dirty, poor location and design of bus stops, among others. This finding however calls for further study on location, design and management of bus stops towards mitigating criminal activities in public transport services.

**Table 4.4: Frequent Places of Occurrence (%)**

<b>Places of Occurrence</b>	<b>Responses (%)</b>
Within walking distance to and from stations/ transfer points	07.22
While waiting for ride – at bus stop	61.45
In-transit or on-Transit	31.33
Missing Value	-

**Source: Author’s Fieldwork, 2009.**

As earlier mentioned, transport is a vital element that enhances the livelihood of individuals and nations as a whole, and as rightly said by scholars, livelihoods perspective offers an integrated framework for thinking about access to resources. It recognizes the social asymmetries and relations of power, a vital proxy that understands how things are distributed in the community Rakodi, et al, (2002). It can therefore be deduced that livelihoods in relation to the tenet of this study reflect the diversity and complexity of ways in which women are able to interact with existing sectors of the city and specifically to make a living. Within the context of this study, and responses from respondents, it was made known that livelihoods of women are determined predominantly by the context in which they travel, live or interact; and the constraints and opportunities present is reflected in their travel environment. This view according to sampled respondents stem on the implications of crime and fear of crime they experienced when using public transport (see table 4.5). It is worth noting that crime and fear of crime often forces most respondents (women) to cancel necessary trips. In other words, interactions for basic needs are persistently affected by prevailing criminal activities in public transport services. Similarly, most respondents (women) currently prefer to own and travel by private vehicle, thus neglecting public transport service, this according to reviewed literature will resultantly increase level of motorization, congestion and adds to environmental pollution through automobile emissions. And this goes against the focus of sustainable development.

Interestingly, this finding mirrors the view of Cozens, et al (2004) in their study on crime and railway stations, where they ascertained that “*perceptions of crime on the railways will undoubtedly affects levels of patronage*”. Also, Clarke, (1996) posits that fear of crime often stops many people from using public transport and this has serious impact on revenues.

**Table 4.5: Implications of Crime Experience on Respondents**

Responses	%
Lost of properties	39.76
Injury	15.66
Neglect public transport	13.25
Higher fare of travel	03.61
Travel in company of guidance	07.23
Cancellation of trips/ no interaction	20.48

**Source: Author's Fieldwork, 2009.**

Furthermore, results of this study corroborate with the assertion made by Parliamentary Travel Safety Committee of Legislative Assembly of Queensland (Australia) that "...public perception of crime is an important determinant of people's usage of public transport" (Parliamentary Travel Safe Committee, 1998, p.16). This point is described in table 4.6; respondents make it clear that existing public transport facilities based on the given indicators are in a very poor state. Specifically, women perceived the state of security, facilities of stations, quality of travel modes etc; as major factors that needs to be addressed if sustainable public transport service can be said to be provided in the study area.

**Table 4.6: Perceptions of Respondents on Public Transport Facilities**

Indicators	Very good (%)	Good (%)	Average (%)	Poor (%)	Very poor (%)	No Response (%)
Location of Terminal/ stations	-	-	46.31	26.32	18.95	08.42
Terminal/ stations Facilities	-	-	13.68	27.37	55.79	03.16
Travel Security/ safety/crime	-	-	-	35.79	64.21	-
Travel Information	-	-	-	44.21	48.42	07.37
Pedestrianization	-	-	17.89	53.68	20.00	08.42
Quality of mode of travel	-	-	09.47	51.57	38.95	-
Reliability	-	-	03.16	17.89	76.84	02.11

**Source: Author's Fieldwork, 2009**

### 4.3: RESEARCH HYPOTHESIS AND TESTING

Two research hypotheses were set for this study. The first hypothesis was to examine the relationships between socio-economic variables and the use of public transport. The second hypothesis examines travel environment as significant factors that generate criminal activities in public transport. It worth mentioning that apart from scientific clarifications of findings; hypothesis were formulated and tested to further examined the validity of the study.

The first hypothesis states that:

- **Alternative Hypothesis (H1)** - There is significant relationships between socio-economic characteristics or variables of women (respondents) and the use of public transportation in Lagos metropolis.

**OR**

- Socio-economic variables or characteristics of respondents have a significant effect or is a determining factor of the use of public transport in Lagos metropolis
- **Null Hypothesis (H0)** - There is no significant relationships between socio-economic characteristics or variables of women (respondents) and the use of public transportation in Lagos metropolis.

**OR**

- Socio-economic variables or characteristics of respondents have no significant effect or is not determining factor of the use of public transport in Lagos metropolis.

#### **Second Hypothesis**

- **Alternative Hypothesis (H1):** Travel environment is a significant factors that generate or propel criminal activities in public transport
- **Null Hypothesis (H0):** Travel environment is not a significant factors that generate or propel criminal activities in public transport

Table 4.7 shows the result of the correlation analysis (using the Pearson Moment Correlation) - (PPMC) between socio-economic variables and the use of public transport in the study area. The result reveals that there is significant relationship at  $P < .05$  between socio-economic variables (respondents income, educational level and age) and the use of public transport. Also, a significant relationship at  $P < .01$  is also found between socio-economic variables and the use of public transport by the respondents. This implies that socio-economic variables of respondents form among others an important determinant of the use of public transport. For instance, income level of respondents can determine the possibility of paying extra cost or fare in order to avoid being victim of criminal activities or crime. An interview with a respondent reveals that, *“the family often makes arrangement to pick or accompany family members’ home from and to the bus stop”*. Another interesting fact that needs to be shared is the marital status issue. Respondents particularly the single (not married) made it clear that they are often “accompany to and from bus stops (particularly at peak periods) whenever they are to embark on a trip”. This partly justified the results of the correlation analysis, that socio-economic variables are associated with the use of public transport and they form part of the determinant of the use of public transport.



**Table 4.7: Result of the Correlation Analysis Between Socio-Economic Variables and the Use of Public Transport in Lagos Metropolis.**

Variables	Result of the correlation analysis 'r'
Income	0.300*
Educational level	0.173*
Age	0.735*
Marital status	0.145*
(Deteriorating travel environment)	-0.338**

\*\*Significant at  $p < .01$ ; \*Significant at  $p > .05$

Travel environment especially poorly design and manage bus stops are notable generator of crime. In other words, increasing deterioration of bus stops facilities and locations are displeasing issues raised by respondents. To answer one of the main research questions of this study, the multiple regression analysis was conducted on travel environment as a notable factor responsible for persistent criminal activity and the use of public transport. Thus, table 4.8 reveals findings of the regression analysis. Result shows that there is a significant impact of travel condition (travel condition,  $P < .05$ ; location of bus stops;  $P < .01$ ; and condition or quality of public transport and bus stops,  $P < .05$ ) on the use of public transport and travel pattern of respondents. It can be deduced from this result that effective travel environment will partly reduce the occurrence of crime, particularly at the stations or bus stops. Lack of clean, well designed and managed bus stops will however encourage or serve as attractor or generator for criminal activities.

Interestingly, appraisal of crime and fear of crime experience by women in public transport is a crucial outcome of this study as it explained the factors, intensity and seriousness of criminal activities in public transport service. Thus, current situation of crime and fear of crime in public transport can be taken as a pointer to urgent need for solutions to curtail or minimize the problem. Table 4.9 therefore presents the stepwise regression analysis used to explain factors influencing crime and fear of crime. An array of variables were selected, and considering the regression coefficients, age, time of travel, gender, condition of walking distance, security/ guidance at bus stops, are significant factors that determines the occurrence of crime in public transport. This result correlate with the informal interviews held with some respondents. They emphasized that *“women are often perceived as weaker sex, thus their inability to defend themselves against crime partly, made them frequent victims or prey to crime in public transport”*. Similarly, high demand or rush for public transport particularly during peak periods, often generates disorderly behaviour which usually degenerates into crime of different types, and makes women the most victim. They described further that, apart from short supply of public transport services, there is uncoordinated operation of the service. For instance, illegal operators were said to always take advantage of peak hour rush in the face of short supply of public transport and harsh economic situation with the aim to make ends meet; but often their activities is for criminal purpose and on target groups. This was said to be common among motorcycles and mini-buses operators; and mostly occur in the night, when users are stranded due to inability to get formal public transport.

**Table 4.8: Impact of Travel Environment on the Occurrence of Crime**

Variable Name	Level of explanation (R-Square)	R-Square	Std. Error	F-Change	Sig. F Change	Multiple Stepwise Regression Result	
						F-value	Sig.
Location of bus stop	.156	.194	6.1530	25.634**	.000	17.631**	.000
Quality of transport facilities & service condition	.047	0.47	6.6551	6.217*	.014	6.415*	.016
Condition of public transport	.073	.267	5.8974	3.537*	.016	8.667**	.014
Effectiveness of Law enforcement	.061	.237	6.6772	6.346*	.014	7.346**	.000

R-square- 26.7%; \*\*Significant at P<.01; \*Significant at P<.05

Findings presented in this study is consistent with the “broken windows theory” posited by Wilson, et al, (1982); that stated that “*physical incivilities (trash, graffiti, abandoned buildings, disrepair, unkempt lots) and social incivilities (rowdy behaviour, drug dealing, public drunkenness, panhandling and loitering) result in higher crime and fear of crime*”. Within the context of the study area and relevant cases as revealed in Figs 4.5, poor management of public transport service, unregulated location of crime generating land use activities close to bus stops, weak monitoring of behaviour or inadequate security personnel, poor quality of modes and bus stops were taken to be factors that contributes to crime in public transport service. This however complements the views of scholars in criminal justice. They often emphasized the importance of environmental factors in facilitating and discouraging crimes against property and people (see, Ryan, et al; 2009).



**Fig. 4.5: A glance at Travel Environment**

**Table 4.9: Factors Explaining Criminal Activities in Public Transport**

Step	Variables	Regression coefficients	Standard error	t-value
1	Age of respondent	0.8210	0.0426	1.73*
2	Time of travel(peak periods/ rush hours	0.6431	0.0411	1.56*
3	Gender/ sex	0.7360	0.1675	1.15*
4	Location of bus stops/ land use	0.6421	0.0032	0.54**
5	Frequent news of crime occurrence	0.4123	0.0253	0.42**
6	Condition of walking distance	0.5013	0.0621	1.16*
7	Number of passengers in transit	0.3631	0.0130	0.05**
8	Fare or cost of travel	-0.3431	0.4235	0.03**
9	Condition of bus stop/ station	0.6421	0.6324	1.61*
10.	Security/ guidance	0.5163	0.5215	1.42*

Testing at 0.05 Alpha level; \* Significant \*\* insignificant



**Fig. 4.6: Operators of Public transports**

#### 4.4: FACTOR LOADING FOR CRIME AND PUBLIC TRANSPORT

In order to identify the preferred way out of criminal activities in public transport, four key factors with different variables were examined using the factor loading analysis earlier discussed in the methodological chapter. With respect to the study area and the chosen sample; empirical analysis of factors that propel crime and fear of crime in public transport, who are the stakeholders to be involved in combating the situation and what can be done is an important outcome of this study on gender and safety in public transport. This further gives detail intensity of the problem and showcases the directions for action. It should be noted that this section of the thesis was based on the main research question of this study. (*What are The Factors That Generate or Propel Crime and Fear of Crime When Using Public Transport? and what can be done? Who are the stakeholders to be involved?*). Fear of crime in public transport from the study was considered “normal and unfortunate” this according to respondents is due to situation where demands for the service outrage the supply; facilities are grossly inadequate, etc. Meanwhile, its magnitude and persistent occurrence in most areas as exemplified by the respondents can be taken as a pointer to the urgent need for valuable actions towards reducing this “wicked problem” if people, women in particular are to be encouraged to use public transport service and to partly achieve sustainable development.

Okoko, (2000), pointed out that factor analysis is an analytic method used in collapsing a large number of variables into a few factors. This technique attempt to collapse a set of variables to a new set of components or fewer factors in such a way that the new components and factors account for as much as possible the variation among the original variables. In this way, the factors are derived using the social science statistical package (computer), and the process involves finding the original variables that correlate highly with the derived factors. Table 4.10 described the reason or variables responsible for the continuous occurrence of crime in public transport. Based on the analysis and complementing earlier discussion and reviewed literature as well as theoretical arguments, it goes beyond questioning that, incidence of crime in public transport is due to inadequate location and management of bus stops. Most respondents were of the opinion that poor travel environment is another notable element that enhances crime in public transport, while inadequate travel information and ineffective coordination of operators of public transport are respectively the least variables influencing crime in public transport. This result buttressed an interview with a 33 years old woman, according to her:

*“I like using public transport not because I don’t have money to buy a car, but I believe public transport can help me to reduce the stress of driving. But, I hate the way public transport is being operated in this city and the country at large; this is because have been victim of crime when waiting for bus and okada. I feel bad about our bus stops, because they are not safe and they are the best place of being attack”*

**Table 4. 10: Factor 1: Main reason for persistent crime in public transport**

S/N	Variables	Loading
1.	Inadequate location & Management of bus stops	1.000
2.	Poor travel environment	0.989
3.	Poor coordination of operators	0.975
4.	Poor law enforcement	0.973
5.	Inadequate travel information	0.968
6.	Ineffective coordination of operators	0.965

**Source: SPSS Generated Result**

Stem on the importance of public transport towards an improved livelihood and sustainable development, it was made clear that the service is a system that needs to be taken care of; if it aim at attracting users and achieving friendly travel condition. In other words, being a “system” it demands effective functioning of all other parts. This prompts the factor about the elements of public transport that needs to be improved. Table 4.11 described the variables that demands attention towards reducing crime. Sequel to above emphasis on bad bus stops and management; most respondents believe that improve quality and location of bus stops, increase supply of public transport and effective enforcement of rules and regulation guiding the operation of public transport can respectively help to reduce the increasing wave of crime hindering the continuous use of the service and hampering the livelihoods of most users. Information gathered from respondents showed that the prevailing harsh economic situation have forced people to convert most bus stops to a trading place that attracts various types of people; particularly those who are not interested in travel or waiting for buses. A close discussion with an occupant of a bus stop about crime in public transport, she said that

*“Crime especially stealing is not a new thing in this bus stops, since that is not my business am less concern with the matter, though am sometimes affected and I also pity other victims, but there is nothing I can do. As you can see am selling food here to make a living, if I have a shop of my own I will do better than selling at bus stops, so tell the government to provide shops and bring police to bus stops, because sometimes my money are stolen by unknown person you called criminals”.*

This finding confirms and supports views of Smart, et al; (2009) and Metropolitan Transportation Commission, (2006). According to them:

*“when transit connectivity is poor, waits and transfers become burdensome for transit users and discourage transit use. Poor stop and station connectivity results in trips that are frustrating, costly and time consuming”*(MTC, 2006 cited in Smart et al, 2009)

**Table 4.11: Factor 2: Transport Elements to Be Improved**

S/N	Variables	Loading
1.	Improve quality & locations of bus stops	1.013
2.	Increase supply of public transport (flexibility and availability)	0.987
3.	Effective law enforcement (guardian)	0.981
4.	Provision of prompt travel information	0.950
5.	Coordination of operators of public transport	0.941
6.	Improve quality of public transport	0.932

**Source: SPSS Generated Result**

Provision of public transport service requires participation of various stakeholders. Scholars over the years often argue that government; operators and users are notable stakeholders or actors to be involved in production of public transport. According to literature each actor has its goals, objectives and expectations in regards to how public transport should be managed (see Ongkittikul, 2006). This trend of discussion complements the finding of this study about who to be involved in crime-free public transport operations. Table 4.12 made it clear that government is the major stakeholder, and closely followed by the operators. It was however not surprising to note that, the government, operators and users are also collective or joint actor towards an improve public transport services. Based on an interview in regards to crime with an operator of public transport; he said that:

*“it is not my function to catch criminals, the government is to be blame for the frequent occurrence of crime. They know what to do, but they will not do it. Look at our bus stops, after paying the government some amount of money as tax or what do you call it?, they never think of improving the place. They are only interested in our money. If you know them, please inform them to perform their roles as government”*

This partly made it clear that the role of government in public transport is substantial and can singularly influences the operational and patronage pattern of public transport service. The question disturbing the mind however is what should government do to improve public transport and particularly to reduce crime in public transport? This is pertinent because of call on government to urgently improve public transport service in the study area.

**Table 4.12: Factor 3: Stakeholders or Actors to Be Involved**

S/N	Variables	Loading
1.	Government or policy makers	0.998
2.	Operators	0.983
3.	Users or passengers	0.974
4.	Government, Operators & Passengers	0.961

**Source: SPSS Generated Result**

With the prevailing crime in public transport, the service faces a challenging task. Experience from developed countries shows that government controls public transport through regulatory framework and subsidy (see Ongkittikul, 2006). According to reviewed literature the regulatory framework explains or determines the level of freedom of the operators in providing the service. In other words, government uses this strategy to enhance the quality of public transport services. This notion is partly consistent with finding of this study as revealed in table 4.13. Based on this study, respondents made it known that government needs to provide and improve public transport facilities; this is expected to be followed by the increase in supply of public transport. Provision of employment is the least role mentioned by respondent and justified by the analysis.

Findings from interviews show that respondents know the advantage of improve or efficient transport infrastructure. They were conversant with the criminal activities, but they believed the government needs to be questioned about this situation. For instance; an interview with 47 years old women, she explained

*“I don’t know what government is doing, I pay my taxes and yet I cannot enjoy facilities; the public transport is nothing to talk about, have been victims of harassment time without number, have lost valuable properties to criminals all because I want to use public transport; we cannot travel at night due to lack of street lights, and apart from that you will not even get public transport, and if you do, you have to pay more; and thank God if you are not kidnapped at the end of the day. Government needs to do something about it; let them provide more vehicles, street lights, police and may be employment for the thugs in our bus stops”.*

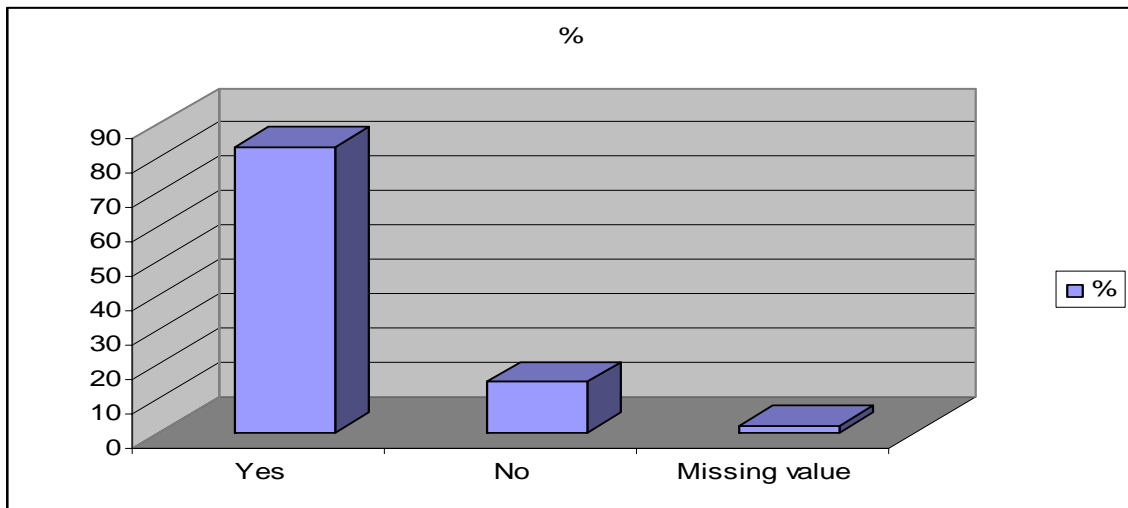
**Table 4.13: Factor 4: Expected Roles of Government**

S/N	Variables	Loading
1.	Provide transport infrastructure	1.004
2.	Increase supply of public transport	0.997
3.	Improve enforcement of transport laws/ regulation	0.886
4.	Effective landuse planning & management	0.881
5.	Coordination of public transport operators	0.783
6.	Provision of employment	0.764

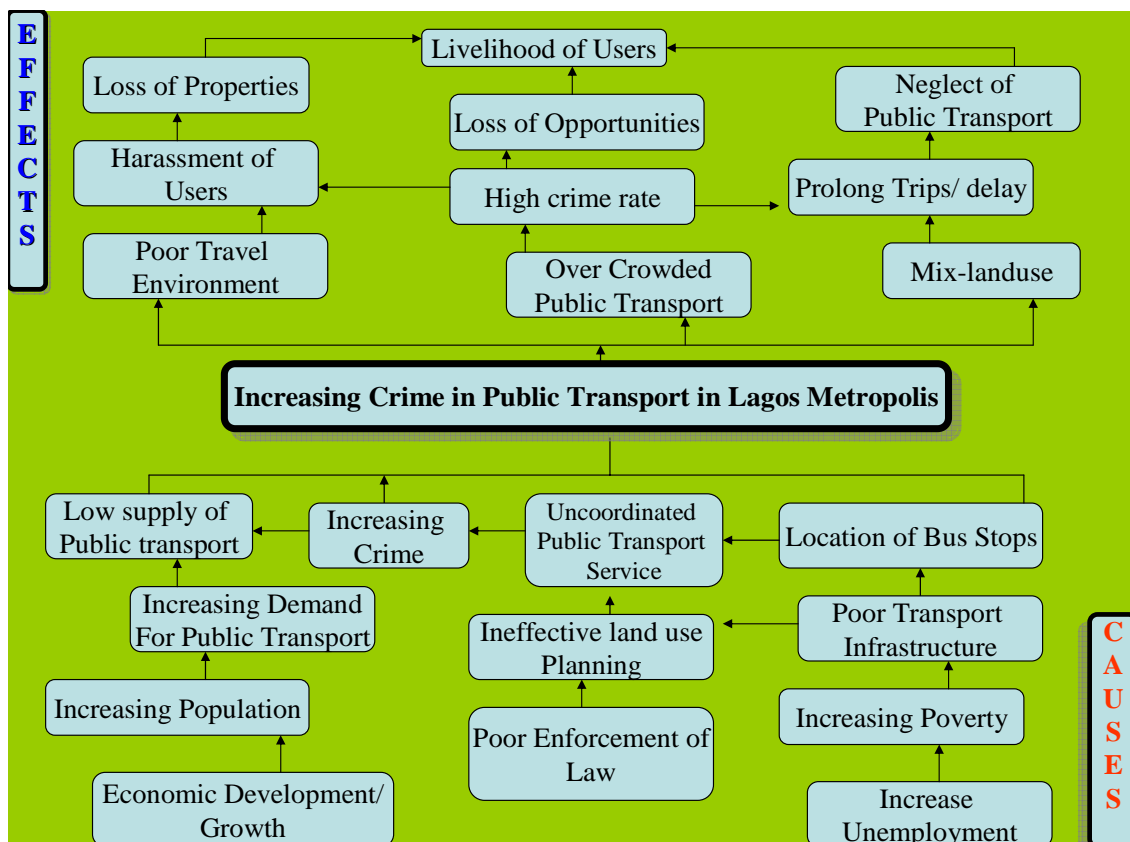
**Source: SPSS Generated Result**

Similarly, in one of Nigerian Newspaper, it was aptly said that the government is to be blamed for the increase crime rate in the country, it was further said that government needs to create job opportunities for the youth in particular to keep away from crime. (See, Nigerian Tribune, Saturday, August 22nd, 2009). As earlier discussed it is pertinent to note that the quality of public transport service is a determinant of it usage; this within the context of this study refers to the experience of crime in the service. Most respondents (see fig. 4.7) will be glad to use public transport in future if improved. Measures suggested by respondents include; provision of shelters in stations, prohibition of the sale of liquor in and close to bus stops, increasing supply of public transport, provision of operational guidelines or effective coordination of operators, adequate lighting of walkways, provide security personnel in bus stops, displacement of gangs or garage touts or thugs etc.

**Fig. 4.7: Responses on future use of improved / crime free public transport service**



**4.5: Causes and Effects of Crime in Public Transport in Lagos Metropolis (Problem Tree)**



**4.6: SWOT Analysis of Lagos Metropolis (Crime and Public Transport)**

The box below reveals a SWOT analysis of criminal activities and public transport services based on the empirical findings and reviewed literature focusing on the issue in Lagos metropolis. It should be mentioned that, the SWOT analysis is an important area of analysis that guides decisions on the issue that forms the bases of this study. The strengths and



weaknesses in the city, as well as the opportunities and treats posed by criminal activities should be given adequate consideration towards formulating policies that will take the transport needs of all segments of the population, particularly women in the city into consideration.

**Box 4.1: SWOT Analysis of Lagos Metropolis (Crime and Public Transport)**

<p><b>STRENGTH</b></p> <ul style="list-style-type: none"> <li>✓ Large heterogeneous population</li> <li>✓ Buoyant Economic Activities</li> <li>✓ Commercial Nerve Centre of the Country</li> <li>✓ High Demand For Public Transport</li> <li>✓ Apparent Road Network</li> </ul>	<p><b>WEAKNESSES</b></p> <ul style="list-style-type: none"> <li>➤ Inadequate supply</li> <li>➤ Poor management/ corruption</li> <li>➤ Unemployment</li> <li>➤ Increasing poverty rate</li> <li>➤ Proliferation of informal activities</li> <li>➤ Poor land use management</li> <li>➤ Deteriorating transport infrastructure</li> </ul>
<p><b>OPPORTUNITIES</b></p> <ul style="list-style-type: none"> <li>❖ Accommodates lots of economic headquarters</li> <li>❖ Attractive for investment/ investors</li> <li>❖ Commercial capital of Nigeria</li> <li>❖ Seat of foreign organizations</li> </ul>	<p><b>THREATS</b></p> <ul style="list-style-type: none"> <li>• High rate of in-migration</li> <li>• Increasing population</li> <li>• Frequent political instability</li> <li>• Lack of continuity</li> <li>• Increasing fear of crime</li> </ul>

## **CHAPTER FIVE**

### **SUMMARY OF FINDINGS, IMPLICATIONS OF THE STUDY & POLICY SUGGESTIONS**

#### **5.1: SUMMARY OF FINDINGS**

The empirical parts of this thesis analyzed the need for an improved public transport service in Lagos, Nigeria towards reducing crime and enhance the livelihoods of the people, specifically women. It examined the causative factors of crime in public transport, the implications, transport elements to be improved, and who as well as the roles of stakeholders to be involved. It was noted that in general the level of public transport of the city like some other states in the country were inadequate or unattractive, most modes of travel according to respondents are death traps and this was found to be a constraint to spatial interactions. More fundamental is the increasing criminal activities in public transport in the city; which impeded the livelihood of women in terms of hindering access to facilities, services and more importantly loses of properties.

The first finding was the obviously clear fear of crime disparities between the female respondents and the male (control group) when using public transport in the city. This is also true to the victims and intensity of criminal activities along gender dimension. In other words findings show that women are the worst hit of the prevailing criminal activities in public transport. Observed rush or demands for public transport in strategic locations of the study area during peak periods gives an indication of short supply of the service. Based on reviewed literature, the importance of public transport to the sustenance of the people and the nation in general cannot be overlooked. Stem on this, finding complement this argument by revealing that most people depend on public transport for spatial interactions. It can therefore be said that, the service is an “enabler” or “facilitator” in the society, without it, the fortune of the city can be drained off.

The second finding was the frequent places of occurrence of these anti-social behaviours. Analyses revealed that most criminal activities occurs while waiting for buses, “okada” (commercial motorcycles) etc. This coincided with the views reviewed in the Environmental Criminology Theories. Again most bus stops apart from being wrongly located, poorly designed; lacks basic facilities that make users uncomfortable. Most bus stops are located close to liquor stores; while some have been converted to locale for informal trading activities. They are mostly dirty, occupied by thugs and resting places for layabouts who use the avenue to extort money and personal belongings from innocent passengers especially women, no light, poor shelter, lack of travel information etc, these shortfalls in bus stops management serves as a generator of criminal activities as exemplified in the literature and theories. This finding revealed inadequacy in design, location and management of bus stops in the study areas. This however calls for a more detailed study in the country at large. This study also analyzed the types and frequency of crime experienced by respondents. The condition or state of travel environment illustrated in Figures 4.5 and 4.6 further shows the extent of irregularities in the management of public transport in the city. This finding showcases the prevailing transport elements within the public transport service system that contribute to some form of crime in the study areas. It however ascertained that, there is no effective public transport policy that guides the operational activities of public transport service in the city.

This study further analyzed the main contributory factors explaining criminal activities as revealed in the empirical analysis and the problem tree (see Fig. 4.8). The socioeconomic and political advantages of the city (Lagos) to other cities in Nigeria make it a focal point that

attracts large numbers of people. This however has gross effect on the carrying capacity of the city despite all efforts of the government to provide basic facilities. Observations from the field are the recent introduction of the Bus Rapid Transit System and re-coordination of Lagos transport sector. While, commending the efforts of the government, lots still need to be done in regard to public transport services. This is because the population of the city will continue to increase or grow, which will increase the demand for public transport and other transport facilities. This stem on the importance of transport to the physical and socio-economic development of the people and the city at large. Perhaps, the most pertinent or significant finding of crime and fear of crime experience by women in public transport is a crucial outcome of this study. Criminal activities in public transport has revealed in the analysis have continuously affect the travel pattern and livelihoods of women. Women are the most dominating victims of these anti-social behaviours. It is however obvious from the study that; current situation of crime and fear of crime in public transport can be taken as a pointer to the urgent need for solutions to curtail or minimize this “wicked” mobility problem facing most users, specifically women in the study area and other notable cities in the country.

Finally, the stepwise regression analysis showed that many indices of city development and management possibly explained the level of crime and fear of crime in public transport, but, age, time of travel, gender, condition of walking distance, security/guidance at bus stops, are significant factors that determines the occurrence of crime in public transport. Analysis revealed that women are often perceived by perpetrators of crime as weaker sex, thus their inability to defend themselves against crime partly, made them frequent victims or prey to crime in public transport. Also glaring from the analysis is high demand or rush for public transport during peak periods, which often generates disorderly behaviour and simultaneously leads to a conducive environment for criminal activities of different types. Furthermore, poor control of private operators usually refers to as “kabu-kabu” to enter into the public transport market was perceived as an avenue to use the service to commit crime. For instance, illegal operators always take advantage of the peak hour rush in the face of short supply of public transport and harsh economic situation with the aim to make ends meet; but often their activities is for criminal purpose and on target groups. This according to finding is common among motorcycles, private cars and mini-buses operators; and mostly occurs in the night, when users are stranded due to inability to get formal public transport.

## **5.2: PUBLIC TRANSPORT DEVELOPMENT IMPLICATIONS AND POLICY RECOMMENDATIONS**

Based on the empirical analysis some basic public transportation planning and management implications and policy recommendations for future directions can be drawn. It should however be noted that the policy recommendations are basic because of the non-exhaustive analysis or scope of the study. Nevertheless, as exemplified earlier, this study is only a precursor to a broader and detailed analysis and understanding the interrelationships between gender, crime and public transport in the case of Nigeria as a whole. The following policy recommendations are therefore general to address the prevailing criminal activities in public transport as analyzed.

In the first instance, there is inadequate or low supply of public transport services in the city of Lagos, influx of private vehicles and motorcycles for commercial purpose, reinforced the opportunities for criminal activities. The glaring population growth and importance of the city is in part responsible for the high demand for public transport in the city. Lagos may still be considered as one with high mobility crisis associated with harsh pattern of livelihoods and inconsistent management of transportation sector. It is apparent that the existing public transport services cannot satisfy the mobility needs of the people. This

implied that spatial interaction is often a dream to majority of the people, particularly women. This problem is more pronounced in Lagos partly because of the population growth or the urbanization rate (I do not conceive this as an excuse however). The need to coordinate and manage public transport services in line with the objectives of sustainable transportation can not be overstressed. It is imperative to note that, public transport plays an important role in the overall transportation sector or system. In a city like Lagos, where congestion is more rampant, public transport service is a notable key to resolve this problem. Litman, (2008) Fujii, et al; (2009) and Sohail, (2005) independently remarked that the effect of an improved public transport services on individual and nation's livelihoods should be a major concern of any national transport policy document. This partly confirmed the importance of public transport service. Hence improving the performance of public transport service in Lagos and Nigerian cities as a whole ought to be part of regional development policy measures in which public transport investment is involved.

One other implication of this study is that high rate of crime through public transport is grossly affecting the level of patronage of the service. Apart from hindering interactions, these anti-social behaviours has continuously forced most people to lose valuable properties, become victims of rape, harassments, prolonged travel time and painfully neglecting the use of public transport; etc. Loukaitous-Sideris, (2006) aptly remarked that a "wicked problem" like crime calls for multidimensional and coordinated approaches. Thus, a crime-free public transport would not only allow efficient interactions, but it will foster the growth and development of the city. Moreover, as this study revealed, and as the background provided in chapter one explains, the location, design and management approach of bus stops or stations has been said and observed to be a notable generator of crime when using public transport. There is need to promote more effective design and management of bus stops. Suggested options include increase supply of public transport, provision of shelter, information board or travel notices, public telephone, lighting, rehabilitation of seats, improve security among others.

Based on field observations and my international experience, there is need for policy that will kick against the location of bus stops close to liquor stores (mix-land use), conversion of bus stops to trading venue and resting places for thugs and informal activities. Also, bus stop should be designed in a more transparent and strong manner; this will allow easy notification of any anti-social behaviour, and makes travel environment not conducive for criminal activities. Registration of private vehicles for commercial purpose should be enforced. This will guard against free entry into public transport operation. Towards an improve surveillance, I personally call for the establishment of Public Transport Police. They should be charged with the responsibilities of enforcement of necessary traffic management measures relating to the use of public transport. This approach can be refers to as "opportunity blocking" according to the environmental criminology theories. This option is very important in view of the public transport police role in achieving crime free public transport and short term local employment provisions. Public transport in Nigeria can be made more efficient and attractive only if transport facilities, hitherto neglected for decades, are made more attractive or rehabilitated to match modern standards and supported by effective maintenance and management.

Further on the increase supply of public transport as an option to address the prevailing crime in public transport, recent developments in the city (Lagos) reveal the commitment of the government towards improving the mobility of the people. More pertinent, it reveals that government already recognizes the need for more effective spatial interactions among different sectors and the people, and the need to stimulate productive activities in the city. It also shows that public transport is more or less "glue" that binds most other sectors

together. This is however reflected in the introduction of the Bus Rapid Transit System in the state and use of modern taxis for public consumptions. It should however be noted that, the extent to which this recent developments has achieved in part or full the aims of a sustainable public transport as earlier stated in the literature review chapter is yet to be seen. This is because of the daily increase in population, political interferences, inconsistency; among others are hidden forces at work underlying the achievement of the aim of government programmes. In real terms, as this study partly revealed, door-to door accessibility, specifically most walking distances (streets) and bus stops still remain notable generators of crime or conducive locales for criminal activities. Nevertheless, the fact that the status of the state public transport is enhanced in recent time points to the fact that more and effective actions can still be taken to address the prevailing crime in public transport. Inadequate travel information, congestion of bus stops, poor transfers, etc; had not enhanced the attractiveness to the BRT service.

My simple argument is based on the findings and field observations. Rehabilitation and increase of public transport facilities though desirable, it should however be continuous, and accompanied by appropriate allocation of resources in order to facilitate proper maintenance or management. Also the introduction of Public Transport Police will go a long way to coordinate the operation of public transport services in the city. This group is expected to monitor and be sure of the functionality of all elements of public transport. This according to me will create a more pleasing and safe environment for travel. I also want to contend that, the interplay between urban physical planning and transportation cannot be overlooked. There is need for an effective policy that will guide the landuse pattern, and facilitate proper location of bus stops and connectivity of transport networks. The present day policies characterized by public sector led development in which the government is absolutely involved or the dominating stakeholder in productive activities and development of infrastructural facilities, thus compelling most states to depend or relies on the federal government for most activities to be done should be a forgotten issue. In other words, there should be a paradigm shift in the ways the governments provide or engage in productive and infrastructure developments.

From my own perspective, a change to private sector-led development is very appropriate for development of public transport services in the state and the country as a whole, as the case of most developed countries have shown, and in view of the present economic crisis in the country. For instance, government can partner with private sector in designing and maintenance of bus stops, and other transport elements, like provision and operation of public transport vehicles etc. This according to me will reduce proliferation of public transport market by unregistered operators and it will facilitate proper monitoring of the service. It can as well help to reduce the fear of crime and opportunities to commit crime in the service. The main conclusion is that while the city of Lagos deserves to have public transport police based on the prevailing criminal activities ravaging public transport will require an in-depth study. Nevertheless, this study has bare the fact that there is need for crime-free public transport as an avenue to reduce stress, foster mobility and improve livelihoods of women. Long term patronage of public transport depends on improvement and management of travel environment. Public transport service is important in facilitating interactions and reducing poverty of most people in the state. It is a viable service that can enhance the living and travel condition of women and possibly help to get them out of the shackle of poverty.

In the same vein, integrating gender dimensions of transportation planning and management have been one of the least considered aspects of urban transportation and development. This according to me entails the integration of mobility needs of all segments of the population into the policy decision for provision of transportation facilities. I also viewed

it as a shift from thinking that mobility requirements of both women and men are the same. It is therefore a view that calls for re-examination of travel needs of both women and men in relation to dynamic and parallel needs through which tasks and resources can be allocated. Above all, this study has given an insight into a much important, but often overlooked aspect of city and transportation planning and management. It pointed to the fact that apart from reproductive and productive roles of women; their weaker capability to defend themselves against prevailing criminal activities in public transport calls for reliable and more sustainable public transport services. In this study, crime free public transport is seen as a vital element that can fosters or enhances spatial interactions of women as earlier said, and thus improves their access to basic components of societal livelihoods. Therefore, safety and adequacy of public transport services were primarily examined by intensity of crime and fear of crime, transport infrastructure, location and condition of bus stops, condition of walking distance, time of travel, supply and demand of services and a host of others. The study however calls for a more regulatory or coordination of public transport service in the study area. Its findings are also relevant to other cities in developing countries, particularly Africa.

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## Appendix 1:

### Trip Frequency by Activity (%)

Activities	5-6 days a week (%)	3-4 days a week (%)	1-2 days a week (%)	1-2 days a Month (%)	No Response
Medical	01.05	05.26	30.53	55.79	07.37
Education	32.63	49.47	11.58	06.32	-
Work	77.89	18.95	03.16	-	-
Shopping	24.21	51.58	15.79	06.31	02.11
Leisure	-	11.58	17.89	65.26	05.26
Visitation	08.42	38.95	43.15	06.32	03.16
Others	-	-	-	-	-

Source: Author's Fieldwork, 2009

### Fear of Crime while using Public Transport (%)

Responses	Female	Male
Yes	83.16	40.00
No	13.68	60.00
No response/ missing value	03.16	00.00

Source: Author's Fieldwork, 2009.

### Responses on future use of improved / crime free public transport service

Future use	%
Yes	83.16
No	14.74
Missing value	02.10

Source: Author's Fieldwork, 2009

Appendix 11







## **GENDER AND SAFETY IN PUBLIC TRANSPORTATION: AN EXPLORATIVE STUDY IN LAGOS METROPOLIS, NIGERIA**

### **USERS**

#### **Introduction**

This Survey is co-ordinated by Odufuwa, Bashir Olufemi of The Institute for Housing and Urban Development, Rotterdam the Netherlands. It is designed to obtain information about the gender dimension of criminal activities in the use public transport passengers in Lagos Metropolis, Nigeria towards completion of an Msc. Degree in Urban Management and Development.

Your co-operation and support will be greatly appreciated by providing vital information stated in the questionnaire. Be rest assured that information provided would be treated as study confidential.

Thank you.

#### **Socio-economic Characteristics**

- (1) Gender: (a) Male (b) Female
- (2) Age: (a) Below 20yrs (b) 18 – 24 yrs (c) 25 – 35 yrs  
(d) 36 – 45 yrs (e) 46 – 55 yrs (f) 56 – 65 yrs  
(g) 66 and above yrs.
- (3). Marital Status: (a) Single (b) Married (c) Widowed  
(d) Separated (e) Divorced
- (4). Educational Status: (a) Primary School (b) School Certificate  
© Diploma/A-level (d) Degree/Professional Qualification  
(e) Master/Ph.D (f) Others specify).....
- (5). Main Occupational: (a) Farming (b) Self-employed (c) Unemployed  
(d) Civil servant (e) Business/Trader (f) Others Specify.....

**Travel and Crime in Public Transport**

- (6) What is your usual mode of transport?  
 (a) Public (b) Private
- (7) If Public transport what mode? (a) Okada (b) Taxi (c) Bus (d) Others  
 (Specify)
- (8). If private what? (a) Car (b) Bus
- (9). Do you use public transport alone or in combination with other mode of transport?  
 (a) Yes (b) No
- (10). State the number of trips made by purpose in the last one week  
 a). Work...(b). School/ Education.....(c) Recreation..... (d) Medical ...(e) Religion.. (f). Others
- (11). How often do you use public transport service? (a) Everyday (b) Weekly (c) Monthly
- (12). What time of the day do you use it? (a) Morning (b) Afternoon (c) Evening  
 (d) Every time

**Factors Responsible and What can be done**

(13) Kindly rate the following based on your level of use of public transport

	Excellent	Very Good	Good	Average	Poor
Speed (How fast)					
Comfortability					
Reliability					
Seats/ Shelters					
Ease of use (Availability)					
Travel Information					
Easy / waiting time					
Safety/ Security					

(14) What is your candid opinion about crime in public transport?



.....  
(15) What are the types of crime witnessed in recent time?  
.....

16) Where do crime often occur or rampant when using the service?  
.....

17). What are the implications of crime in public transport?.....

18). What's the intensity of the incident (a) Light (b) Very Light (c) Fair (d) Serious (e) Very serious

19). What do you think is responsible for this anti-social behaviour?.....

Kindly rate the public transport travel environment relatively to your opinion about crime

	Fully Satisfied	Satisfied	Indifferent	Dissatisfied	Fully Dissatisfied
Walking Distance					
Bus stops					
In-Transit					
Others					

(20) In your own opinion, what do you think can be done to solve these problems?  
.....

(21). Who are those you think should be involved?

***Thank you for your response***