THE PLIGHT OF THE VULNERABLE ROAD USERS IN NIGERIA

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ABSTRACT:
The plight of vulnerable road users in Nigeria, including pedestrians, cyclists, and motorcyclists, has emerged as a significant societal concern due to the high prevalence of road accidents and fatalities. This study presents the application of the social responsibility theory as a theoretical framework to explain the challenges faced by vulnerable road users and highlight the role of various stakeholders in addressing this issue. The social responsibility theory posits that individuals, organizations, and societies have a moral obligation to act in the public's best interest and contribute to society's overall well-being. Applying this theory to the context of vulnerable road users in Nigeria allows for a comprehensive understanding of the responsibilities and actions required to improve their safety. The application of the Social Responsibility theory in this study examines the responsibilities of different stakeholders, including the government, road users, transportation companies, and the community in making our roads safe for the venerable road users. The Road users are encouraged to adhere to traffic regulations, show empathy towards vulnerable users, and actively promote road safety as they also have a role to play in ensuring the safety of the vulnerable road users, the study emphasizes the need for collective action and accountability in addressing the plight of vulnerable road users in Nigeria. It highlights the importance of recognizing the social obligations of individuals, organizations, and the government to create a safer road environment and protect the well-being of all road users. Through this theoretical framework, it is hoped that policymakers, stakeholders, and the wider community will be inspired to take proactive measures, implement interventions, and work towards a society where vulnerable road users can navigate the roads with greater safety and security.

Keywords: Vulnerable, Road Crashes, Mobility, Safe-transport, VRU (Vulnerable Road Users), NMT (Non-Motorised Transport), Pedestrians,

1.0 Introduction:
Transport refers to the movement of people or goods from one place to another. It is a very crucial aspect of modern societies that enable economic activity, social interaction and personal mobility. There are many different modes of transportation which include; Road transport: This includes cars, buses; trucks, and motorcycles, road transportation is the
most common mode of transportation for people and goods in many parts of the world. Rail transport: This includes trains and trams; Rail transportation is often used for long-distance transport of goods and people. Water transport: This includes ships, boats and ferries. Water transport is used for the transport of goods and people over long distances, and is especially important for international trade. Air transport: This includes aeroplanes and helicopters; Air transport is used for fast and efficient transport of people and goods over long distances. Pipeline transport: This includes pipelines used for transporting liquid and gasses. Pipeline transport is used for the transport of petroleum, natural gases and other liquids over long distances (Microsoft, 2009).

Each mode of transport has its own advantages and disadvantages, depending on factors such as distance, speed, cost, safety and environmental impact. For example, air transport is generally the fastest and most efficient mode for long distances, but it is also the most expensive and has a high environmental impact due to emissions. On the other hand, road transport is more flexible and accessible but can be slower and more congested in urban areas.

Transport infrastructure such as roads, railways, ports and airports are essential for facilitating transport. Government and private companies invest heavily in transport infrastructure to improve connectivity, reduce travel times and enhance economic competitiveness. Additionally, advances in technology have enabled the development of new modes of transport such as electric cars and high-speed trains. Transport plays a critical role in shaping the social, economic and environmental dimensions of our world. It can promote economic growth, provide access to services and opportunities and connect people across different regions and cultures. However, it can also have negative impacts, such as contributing to air and noise pollution, greenhouse gas emission and traffic congestion. As such it is important to balance the benefits and costs of transport and to explore ways to make transport more sustainable and efficient (Mlson, 1998).

2.0 Road Transport: The Nigerian Perspective

Among the modes of transportation, the most popular and widely used is road transportation. Road transportation refers to the movement of people or goods from one place to another using vehicle that travels on roads. It is a type of transportation that relies on road infrastructure such as highways, streets and other paved or unpaved roads to provide mobility. Road transportation can involve various types of vehicles, including cars, buses, trucks, motorcycles, bicycles and other modes of transport that use roads. It is a critical mode of transportation that supports local and communal economic activities and facilitates social interactions, providing access to employment, education, healthcare and other essential services, (Yannis G. .., 2020).

In Nigeria, road transport is the most used means of transport. This is because it remains the most accessible, available, reliable and interconnected transport system. However, the roads are in abnormal and unsafe conditions, (Olanrewaju, 1987).

Road transportation in Nigeria has a long and complex history that dates back to the pre-colonial era when transportation was primarily by foot or animal-drawn carts. However, the development of modern road transportation in Nigeria began during the colonial era when the British built a
network of roads to facilitate the movement of goods and people across the country.

One of the earliest major roads constructed during this period was the Lagos-Ibadan Road, which was built to connect the major port city of Lagos with other parts of the country. The construction of the road began in 1893, marking a significant milestone in the development of road transportation in Nigeria.

After Nigeria gained independence in 1960, the government prioritized the development of the road network as a critical component of the country’s economic development. This led to the construction of several major highways, including the Lagos-Ibadan Expressway, the East-West Road and the Abuja – Kaduna-Zaria-Kano Expressway, among others. Despite significant progress in road transport infrastructure development, Nigeria still faces significant challenges in this sector, including poor road conditions, inadequate maintenance, and traffic congestion in major urban centres, all these factors have increased the vulnerability of Nigeria road users. However, the Nigerian government continues to invest in road infrastructure development and the private sector is also playing an increasingly significant role in financing and building modern road transportation systems in the country, (Hay A. M., 2017).

3.0 Vulnerable Road Users an Empirical Approach

A vulnerable road user known as VRU is a person who is at a higher risk of injury or death when using the road transport system. VRUs include pedestrians, bicyclists, motorcyclists and other non-motorized transport users who share the same road space as motor vehicles, (Schwebel, 2022). VRUs, vulnerable road users are considered vulnerable because they lack the protection provided by a vehicle’s safety features, such as seatbelts, airbags and steel frames. In addition, VRUs are often less visible to motorists and may be more difficult to detect, especially in low-light conditions. VRUs are also vulnerable to the behaviour of other road users, including drivers who may be distracted, speeding, or driving under the influence of drugs or alcohol. As a result, VRUs are more likely to be involved in accidents and suffer severe injuries or fatalities. To reduce the risk of harm to VRUs, road safety measures such as dedicated bike lanes, pedestrian crossings, and lower speed limits are essential.

Nigerian roads are filled with all kinds of users. We see trucks and cars and also see motorcycles, bicycles, and increasing numbers of e-bikes and scooters. But since the earliest days of transportation, one type of road user is often forgotten, the pedestrian. Almost every trip starts and ends with a walk. Many of us walk from the front door to our driveway or from parking lots to markets. Others walk from home to bus stops. At some point in our days and weeks, nearly all of us engage with traffic as pedestrians. Pedestrians

Disabled persons include any individuals with a physical, sensory or mental impairment affecting their movements. They are usually pedestrians, either walking, with or without artificial aids or using a wheelchair; some may be cyclists. As the elderly, the disabled are more at risk of a collision in difficult traffic situations or on parts of the infrastructure that are not adapted to their abilities, and they may also in some cases present a lower faculty of recovery from injuries.

If disabled people suffer from a handicap in traffic, this handicap results from the
conjunction of their disability and the kind of environment they have to move in. Creating a physical environment that reduces handicaps and thus enables the disabled to move about with a level of ease and protection similar to that of other road users is not only a safety measure, but it is also a basic action to treat the disabled with equity and fully integrate them in society.

Children are also vulnerable road users as their abilities to cope with traffic evolve with age and remain severely limited in the first nine or ten years of their life. They are therefore highly at risk in any situation where motorized traffic is heavy or fast, in areas with poor visibility and in situations where drivers focus their attention on other vehicles and tend to forget about pedestrians or cyclists. Although children may recuperate more easily from injuries than most adults, the shock resulting from a traffic accident is never to be underestimated. The protection of children cannot rely on better behaviour on their part.

It is the responsibility of decision-makers to allow them freedom of movement in appropriate surroundings and to promote more careful behaviour of the drivers. It can be seen that vulnerable road users are not one entity, but a gathering of different groups of people with different characteristics, travel habits and behavioural patterns, having in common their difficulties to cope with motorized traffic in an environment which has seldom been primarily designed for them.

The safety of vulnerable road users has also been of great concern globally. A report by the world health organization in 2013 indicated that 27% of global road fatalities are among cyclists and pedestrians. Wall Jasper noted that in the US, every year, more than 4,500 pedestrians are killed by motor vehicles, while more than 700 bicyclists die in traffic crashes.

Drawing an inference from previous recorded studies on road traffic accidents it was noted that accidents occur because of one, or a combination of some components which include:

i. The Driver
ii. The Road
iii. The Vehicle
iv. The Traffic Control Devices
v. The Environment

Roess, Prassas, and McShane also categorized critical components that interact in a traffic system as vehicles, traffic control devices, streets and highways, road users, and the general environment. According to them the optimization of transportation systems to prevent traffic crashes calls for a deep study of both the individual characteristics of the properties that interact in the traffic systems, as well as the inter-reaction of these components (Ross, 2011).

Studies on road traffic crashes have shown that collision involving the front end of a light vehicle with a pedestrian or cyclist is a very frequent accident configuration, this does not mean that every driver that collides with a vulnerable road user did it intentionally, certainly not, but at the same time, it may be challenging for law enforcement officers to know without a doubt the intent of a driver that is involved in a crash with a vulnerable road user.

However, with the aim of achieving zero fatality on the road, there is the need to ensure an all-around evaluation of how to improve all the factors that interact during traffic crashes and increased enforcement to deter bad driving behaviours, better compliance with traffic regulations may be seen if more law enforcement officers are on the roads, (Mofolasaye, 2020).
4.0 The Social Responsibility Theory

This study on the Social Responsibility Theory as the framework to explain the plight of vulnerable road users in Nigeria. According to Conrely a contemporary social psychologist, the Social Responsibility Theory which is also known as the Social Responsibility of Business, Organizations and Governments is a theory that outlines the ethical obligations and responsibilities of businesses, organizations and governments beyond profit making, (Neil, 2019). According to this theory, businesses and organizations have a broader responsibility to contribute to society’s well-being and should address social and environmental issues of the society. It should also consider the impact of its actions on various stakeholders including its employees, customers, suppliers, local communities and the environment. The social responsibility theory emphasizes the idea that the government and businesses have a moral and ethical duty to contribute positively to society and should take proactive steps to address social problems and promote social welfare.

The theory encourages businesses to adopt sustainable and responsible practices by integrating social, environmental and ethical concerns into their decision-making process. It implies that the business or organization should go beyond legal compliance and actively engage in activities that benefit society, such as supporting community development, protecting the environment, promoting fair labour practices and investing in social initiatives. Social responsibility theory reflects the belief that the government and business can and should be agents of positive change in society, utilizing their resources, expertise and influence to make a meaningful impact beyond financial gains. The theory recognizes that the long-term success of organizations and businesses is intertwined with the well-being of the community in which they operate and the overall health of the planet.

The concept of social responsibility has evolved over time and its origin can be traced back to various thinkers and scholars. However, one of the most influential proponents of the modern Social Responsibility theory is an economist and Nobel laureate Milton Friedman. In 1070 Milton Friedmand published an Article titled "The Social Responsibility of Business is to Increase its Profit" in the New Your Times Magazine. In this article, Friedman argued against the idea of businesses engaging in social responsibility activities beyond profit making. He stated that the sole social responsibility of a business is to generate profits for its shareholders within the framework of the law.

Friedman’s article sparked a significant debate on the role of businesses, organizations and the government in society and set the stage for discussion on social responsibility. While Friedman’s viewpoint emphasized the primacy of economic consideration, it also prompted responses from other scholars who proposed broader notions of corporate social responsibility. It is important to note that the concept of social responsibility dates from Friedman’s article, various organizations had explored similar ideas before him. However, Friedman’s article and subsequent debates played a crucial role in shaping the discourse around social responsibility in the field of society, business and economics, (Lee, 2005).

The Social Responsibility theory encompasses several key principles that guide the behaviour and consideration of government, organizations and businesses.
in relation to their impact on society, while at the same interpretations and emphases of these principles may vary depending on the circumstances obtainable in society, the following principles are commonly associated with the social responsibility theory:

1. **Stakeholders Orientation:**

   The Social Responsibility theory emphasizes the recognition and consideration of various stakeholders affected by a business or government action, this includes employees, customers, suppliers, local communities, stakeholders and the environment. Businesses and the government are encouraged to take into account the needs, interests and concerns of these stakeholders when making decisions.

2. **Ethical Behaviour:** The theory emphasizes the importance of ethical conduct in business operations. This involves adhering to moral and ethical principles, including honesty, fairness, transparency and integrity. Businesses are expected to act ethically in their interaction with stakeholders and to avoid practices that may harm individuals or society.

3. **Sustainable Practices:** The Social Responsibility theory promotes sustainable practices that minimize negative environmental impact and support long-term ecological balance.

4. **Community Engagement:** Businesses are encouraged to actively engage with and contribute to the well-being of the communities where it operates. This may involve supporting local initiatives, investing in community development projects, providing employment opportunities and addressing local social issues.

5. **Corporate Governance:** The Social Responsibility theory stresses the importance of strong corporate governance structure and practices. Businesses are expected to have transparent decision-making processes, accountability mechanisms and responsible leadership. This includes ensuring proper financial reporting, avoiding conflicts of interest and maintaining a culture of ethical behaviour within the organization.

6. **Philanthropy and Social Investment:** The theory recognizes the importance of philanthropic activities and social investment by businesses. This involves voluntarily allocating resources to support charitable causes, community development projects, educational initiatives, health care programs and other social and cultural endeavours.

7. **Responsible Market and Consumer Protection:** The theory highlights the need for businesses to engage in responsible marketing practices and the protection of consumer rights. This includes providing accurate information, avoiding deceptive advertising, ensuring product safety and respecting consumer privacy.

These principles form the basis of the Social Responsibility Theory and guide businesses and governments in considering their broader impact on society beyond mere financial gains. They promote the idea that businesses have a responsibility to contribute positively to society and strive for a more sustainable and ethical business environment.

As it can be deduced from the above, businesses, organizations and governments operating in a society are duty-bound as a matter of principle to take care of the society, its members and the environment in which they operate. As a form of giving
back to society, they especially the government ensure that all the needed infrastructure for seamless movement of commuters within and outside the society is provided in order to enhance growth and economic, social and human development.

However, the situation on the ground in Nigeria, shows that the government, businesses and organizations are not leaving up to their responsibilities in this regard, the road transport infrastructure in Nigeria is very poor where they exist and, in most areas, not visible at all, this makes road transportation in Nigeria very difficult and cumbersome, and the vulnerable road users who are expected to be cared for and protected from other oppressive road users are left at their own faith.

5.0 The Plight of the Vulnerable Road Users in Nigeria

The social responsibility theory emphasizes the moral and ethical obligations of governments, individuals, organizations and businesses to act in a way that benefits society as a whole, this theory when applied to the context of vulnerable road users, such as pedestrians, cyclists, and motorcyclists’ sheds light on the challenges and issues they face.

The vulnerable road users are individuals who are more susceptible to injuries or fatalities in traffic incidents due to their limited protection compared to occupants of motor vehicles. These users often include children, the elderly, pedestrians, cyclists and motorcyclists. Understanding their plight requires recognizing the responsibility of all stakeholders to ensure their safety and wellbeing, (Furtado, 2021).

According to the World Health Organization, vulnerable road users are the most affected in road crashes related deaths all over the world. It is also estimated that approximately a 1.3million people die annually as a result of road traffic crashes and that 93% of these fatalities occur in low and middle countries, though these countries have approximately 60% of the world's vehicles (Organization, 2020).

The Nigerian Federal Road Safety Corps (FRSC) reported that a total of 5,483 people lost their lives and that 35,981 sustained various degrees of injuries from road traffic crashes in 2019 and that these statistics have been on the increase year after year. WHO indicates that road safety needs to be taken seriously. Daily, people are being maimed, injured and killed across the nation because of road traffic crashes and related activities.

The WHO estimates that approximately 35,641 people die on Nigerian roads annually. Heavy traffic congestion, emissions, an increasing cost of transportation, air and noise pollution, together with inefficiencies in the transport system. Although there have been consistent local and national efforts from government, businesses, organizations and civil society to transform the system, the impact has been limited due to capacity gaps. According to the Walking and Cycling in Africa Report 2022, on the national level in Nigeria, the first decade of action towards the elimination of road traffic crashes saw a reduction of road crashes fatalities by 8% compared to the projected 50% target, (Union, 2022).

As illustrated in that report 31% of death and 56% of injuries impact nationally are pedestrians, cyclists, non-motorized road users, and road users with other disabilities known as vulnerable road users. The alarming situation in Nigeria is compounded by the lack of a rigorous enforced regulatory framework and priority towards car-oriented transport policy, outdated street designs, non-
existence of coordinated safety management and the lack of reliable mobility data are some of the critical issues undelaying the challenge to improve road safety in Nigeria.

Putting into consideration that Abuja as the Federal capital of Nigeria accounts for more than 10% of all the road traffic crashes in Nigeria, Abuja is always used as a focal area for the safer street project due to its ability to have national and regional impact.

The implementation of the right road transport policies in Nigeria with a focus on vulnerable road users can be significantly influenced by the principles of social responsibility theory. Below are some implications of the social responsibility theory on road transport policy implementation for vulnerable road users in Nigeria.

i. Responsibilities of Drivers: According to social responsibility theory, drivers have an obligation to operate their vehicles safely and responsibly. They should be aware of vulnerable road users and take necessary precautions to avoid accidents. This includes obeying traffic laws, maintaining a safe speed, and yielding to pedestrians and cyclists when required.

ii. Responsibilities of Pedestrians and Cyclists: Vulnerable Road users also have a role to play in ensuring their own safety. Pedestrians should cross roads at designated crossings and follow traffic signals, while cyclists should use designated lanes and wear appropriate safety gear. By fulfilling their responsibilities, pedestrians and cyclists can reduce the likelihood of accidents and promote a safer road environment.

iii. Responsibilities of Infrastructure Planners: Social responsibility theory emphasizes that governments, urban planners, and transportation authorities have a duty to design road infrastructure that accommodates the needs of vulnerable road users. This includes providing sidewalks, crosswalks, bike lanes, and other safety measures. By prioritizing the safety of vulnerable road users in urban planning, societies can create environments that encourage walking and cycling while minimizing risks.

iv. Responsibilities of Vehicle Manufacturers: Automakers and manufacturers of other vehicles have a social responsibility to design and produce vehicles that prioritize the safety of all users. This includes implementing advanced safety features, such as automatic emergency braking systems and blind-spot detection that help prevent collisions with vulnerable road users. By integrating safety measures into vehicle designs, manufacturers can contribute to reducing the risks faced by pedestrians, cyclists, and motorcyclists.

In summary, social responsibility theory highlights the moral and ethical obligations of individuals, drivers, infrastructure planners, vehicle manufacturers, and society as a whole to address the plight of vulnerable road users. By recognizing and fulfilling these responsibilities, we can work towards creating safer roads and reducing the risks faced by pedestrians, cyclists, motorcyclists and other road users categorized as being vulnerable.

6.0 The Vulnerable Road Users and Their Environment

The growing trend in road transport strategies tends to be moving towards giving importance to non-motorized traffic which consumes less energy and pollution than motor vehicles, is more accessible and to improved mobility for the most vulnerable road users, the elderly and the disabled. In order to understand the safety
and mobility problems of vulnerable road users and to be able to plan accordingly, it is essential to understand the environments in which they live and move.

The regulatory environment of vulnerable road users is not homogeneous across countries, although there are common frameworks, features, and Traffic rules and regulations that vary in forms (i.e., laws, decrees or regulations) between countries.

The General rules that were formulated in the Vienna Convention on Road Transport and have been accepted by OECD and other countries are usually complemented by rules or laws enacted at the national level. Most of the traffic rules are primarily aimed at creating an orderly movement of motorized traffic. Analysis of the content of laws and regulations shows that:

1. Pedestrians are mainly considered to be external elements, needing protection, but at the same time disturbing traffic and having to be restrained in their movements.

2. Cyclists are treated as a hybrid between pedestrians and drivers; they must follow general driving rules, but in some instances are expected to behave as pedestrians, for instance when turning to the off-side at junctions.

3. Every national legislation exhibits significant concerns about the special vulnerability of children, elderly and disabled people. However, when rules are established, they seldom refer to these very vulnerable road user groups and almost exclusively mention the extreme care to be observed by drivers.

The legal issues surrounding the environment tend to evolve with changes in population attitudes. Giving greater priority to non-motorised modes of transport in the organisation of traffic could have beneficial effects as pedestrians and cyclists may comply better with the rules that are tailored to their needs and less restrictive of their mobility. In a number of OECD Member countries, where the trend is to gradually improve the status of vulnerable road users in traffic -- attitudes are already changing and a number of rules reducing the rights and freedom of movement of pedestrians or cyclists are gradually becoming obsolete. For instance, crossing outside a marked pedestrian crossing is no longer considered by judges as the determining factor in an accident and some responsibility is always attributed to the driver, but this is not yet applicable in Nigeria as there is no existing policy framework taking care of the plight of the vulnerable road users. (I, 2021).

In the same vein, rules which used to be common to all countries are in the process of being modified. For example, in the Netherlands, it is no longer compulsory for pedestrians to cross the carriageway only at pedestrian crossings, even if one of these facilities is nearby. In OECD Member countries, the road environment of vulnerable road users has evolved over the years and bears the mark of successive attitudes and priorities of society, embodied in the designs of planners and engineers, (M., 2014).

The changes that occur at a different pace in different countries and cities have resulted in the physical environment of vulnerable road users being heterogeneous. However, on most inter-urban roads in Nigeria, priority has remained with the car. Roadside is often not equipped to suit the needs of vulnerable road users.

Better facilities may be provided for walking through villages or small built-up areas. However, road crossing facilities still demand greater attention from pedestrians than from drivers. They are
implemented so as not to further impair motorized traffic, already considered to be penalized by a severely restrictive speed limit (50 km/h in most countries).

Only a few countries can boast of a physical environment that can take good care of the most vulnerable road users. Although a number of urban and housing development design features have been meant primarily for the safety of children, particularly in residential areas, children are still very much at risk in other parts of towns. Elderly people, often have to cope with traffic lights or crossing conditions meant for more alert pedestrians or cyclists, and with pavements or footpaths left with obstacles or littered, with refuse and are slippery in rainy seasons, (Yannis G., 2020).

The road infrastructure is supposed to be designed to support transport activities and should be adapted to the needs of the various road user groups. In the past road networks adapt to the needs of car, lorry, or bus traffic, at the expense of vulnerable road users whose needs and requirements were introduced only after most details of infrastructure had already been fixed.

The trend in road infrastructure development in most countries are now slowly reversing towards a more balanced situation between motorized and non-motorized traffic and this is influencing the social climate for vulnerable road users in many ways in spite of the differences between the various country’s perception towards pedestrian behaviour.

In most countries, pedestrians are not considered to be very well-behaved. Pedestrians are unwilling to go out of their way to cross the road at crossing facilities. Cyclists, especially in the younger age groups, also tend to take risks on the road. Research has found that pedestrians are unwilling to accept that their intentions may be difficult to predict by the driver and that they bear some responsibility for their own safety, (Stanton, 2020).

However, the rules protecting vulnerable road users, in particular priority of pedestrians on a zebra crossing, are not well observed by drivers, especially when the enforcement level is low. As pedestrians cannot feel protected by facilities implemented according to rules with which drivers do not comply, it is not surprising that they should be reluctant to make efforts and accept a restriction on their movements without the compensation of improved safety. Also, the physical environment of towns and cities creates a social environment, the extent to which pedestrians and cyclists are subjugated to the needs of motorized traffic influences the priority accorded to them by drivers, i.e., their social standing, and can affect their willingness to move about, (Sharp, The Vulnerable Road User and His Environment, 1998).

The physical environment in most countries has been modelled in part to reflect the laws and regulations enacted to organize motorized traffic, its effects on drivers’ attitudes towards vulnerable road users may be in contradiction with the effects that driver training and information policies seek to obtain, and with the need for all road users to act responsibly as conveyed through training, education and publicity. Although pedestrians and cyclists must take some responsibility for their safety, their ability to protect themselves is limited. Children in particular, even when well taught the principles of safe road crossing, cannot be relied upon always to follow the rules, and often act unpredictably. This is increasingly being recognized world over, and in Germany and Great Britain for
example, the approach is to place more of the onus for child safety on the driver and not the child in residential areas where children may be expected to be on the roads.

Recently, there is a trend to "deregulate" road users’ behaviour, calling upon the road user to determine the safest and most correct behaviour to be adopted. This changing emphasis also needs to be followed through in road safety publicity. Publicity programs aimed directly at children, pedestrians, and cyclists may be of limited effectiveness, although more effective as part of a programme of road safety education, (Yannis G., 2020).

The above approach, however, runs the danger of reinforcing drivers’ preconceptions that they have little responsibility for the safety of others. Recent publicity programs have addressed this problem by directly targeting speeding behaviour in residential areas. Such campaigns focus particularly on the consequences and social unacceptability of driving too fast. This approach is ultimately aimed at changing the social climate of speeding as normal acceptable behaviour, and increasing the awareness of the needs of vulnerable road users, (David, 2022).

7.0 Vulnerable Road Users in Road Traffic (Their Mobility and Safety)

To adequately plan for vulnerable road users, it is very important to identify precisely their mobility patterns. It is very important to know both their actual travel activities and their wishes for future travel.

An individual’s transport needs are not always equal to their actual travel activities. It is therefore important to have a knowledge of the factors that may prevent people from fulfilling their transport wishes, e.g. their possible fear of getting involved in an accident or the feelings of insecurity while on the road. Examples from European countries, indications that children are less and less often left to make trips on their own. Elderly people seem particularly prone to trade-offs between mobility and safety or security especially at night. The lack of "friendliness" of the road infrastructure towards pedestrians and cyclists is a deterrent, as it makes walking or cycling both difficult, even strenuous, and dangerous.

In some countries, national travel surveys have been conducted which have shown among other things that people travel by different modes and also for different purposes. In order to know people’s actual transport patterns, surveys should be conducted in all countries on an ongoing basis. Through these surveys, the evolution of travel activities over the years will be known, (Moeinaddin, 2014)

The proportion of elderly people is increasing and similarly, the number of disabled persons is also growing particularly in Nigeria, this has prompted the call for the mobility needs of these vulnerable road users to be taken into consideration to a larger extent by decision-makers and town planners. Changes in mobility patterns are likely to occur with changes in population age and structure and economic changes will also influence both mobility demand and supply.

Currently, methods to collect data differ from one country to another and it is therefore difficult to compare results. Moreover, trips are usually classified according to the main mode used, which hides the fact that almost all trips include a part of walking or cycling. Most surveys also exclude short trips, which leads to underestimation of walking and cycling...
which comprises the vulnerable road users. Also, assessing and comparing public transport data without a comprehensive picture of the offer of transport in different countries or cities remains a difficult task, (Serre, 2006; Hay J., 2009; Sharp, The Vulnerable Road User and His Environment, 1998).

Available data show that, in Nigeria, most trips are still performed using a private car, but that a significant proportion of between 20 to 40% of trips are performed by walking or cycling. Cars are still frequently used even for trips under 5 km. The Frequency and length of walking or cycling trips vary according to the age group, and one of the main determinants of the modal split is the level of car ownership. Any action taken to alter environment or traffic conditions has an effect on mobility in terms of the number of trips and modal split, as well as on safety, in terms of accidents, injuries and feelings of insecurity.

Policies aimed at promoting non-motorized transport would therefore need to integrate safety in transport planning, road design or infrastructural improvement. Any attempt at reducing the number of accidents involving vulnerable road users through a decrease of exposure rather than a decrease in risk is therefore bound to have negative side effects on mobility and on social integration within that environment. To assess the safety of vulnerable road users, the IRTAD database becomes very useful as it provides harmonized definitions at the international level for accident data.

However, the data available at the IRTAD data are limited in that they only allow comparison of fatal accidents. To better identify the safety problems of the various groups of vulnerable road users, more detailed accident statistics available at national or even local levels were analysed for the purpose of this study. There are large discrepancies in the way such data are collected and processed, due to varying definitions of travel modes, road categories, road user groups, and levels of accident severity. This makes it difficult to compare accident figures and accident circumstances at the international level. Although it is impossible to provide a complete and accurate picture of all the problems faced by vulnerable road users in OECD Member countries, some general features clearly appear from the analysis of accident statistics. They can be summarized as follows:

1. Car occupants account for the larger part of road fatalities
2. Pedestrians are the second group almost everywhere, with 15 to 30 per cent of fatalities
3. The elderly account for the larger share of pedestrian and cyclist fatalities in European countries and in Japan.
4. Accidents involving vulnerable road users are more frequent in urban areas than on rural roads, but are, as a rule, more serious on rural roads.
5. Children tend to get involved in accidents more often on minor roads, which is consistent with their exposure patterns.
6. Most serious and fatal reported accidents to cyclists have been found to occur at junctions, either road junctions, or crossings between a street and a cycle track, but there are indications that falls may occur more frequently on road links.
7. A significant proportion of accidents seem to occur at locations with facilities for pedestrians or cyclists.
8. Too little is known about the number and circumstances of accidents involving disabled people. Statistical data do not mention them as separate groups and specific studies are therefore needed to assess the size and characteristics of the problem, (Mofolasaye, 2020).

Accident statistics suit the overall nationwide safety assessments when accurately collected and analysed, although road traffic risk assessment is made impossible by the lack of exposure data relevant to vulnerable road users. But its major drawback is when it comes to using accident data analysis for preparing local road traffic safety work and evaluating local road traffic measures. Statistically speaking, accidents are rare events and most accidents involving vulnerable road users have been shown by studies carried out in different countries to be heavily under-reported.

The more detailed investigation into the police and FRSC reports provides little or no information about processes leading to pedestrian or bicycle accidents, especially about the role played by the road and traffic environment. Without this information, it is almost impossible to propose effective safety measures. Road safety work cannot, therefore, rely only on police or FRSC-based accident data but generally requires the complement of specific accident investigations and complementary or surrogate data based on observational studies.

To design efficient measures for reducing the risk to vulnerable road users, an assessment of the magnitude of safety problems and the identification of priority targets for action are not sufficient, it is also essential to understand what processes contribute to generating future accidents, and what factors are likely to play a key role in them, (Walker, 2018).

The degree of speed applied by drivers is at the root of a large number of measures to improve the safety of vulnerable road users, measurements of speed as an intermediate variable have also been widely used. Studies and research based on all types of approaches, or combinations of them, have been reviewed to describe accident characteristics and factors. There is a close relationship between speed and safety, at two levels:

i. The probability of an accident occurring increases with the traffic speeds involved, and

ii. The injury severity of an accident depends on the collision speed. For example, the probability of a pedestrian being killed is eight times higher if the collision speed is 50 km/h compared to 30 km/h. When speed can be identified as a contributory factor in accidents involving vulnerable road users, it usually means that the approach speed of the colliding vehicle was too high relative to the reaction time needed to respond to incidents likely to occur in the surrounding traffic situation. A number of studies have also shown that obtaining better respect for the 50 km/h speed limit by drivers in urban areas would, in itself, significantly reduce the number of accidents to vulnerable road users, (Sharp, The Vulnerable Road User and His Environment, 1998).

Lack of communication between road users is another factor affecting the safety of pedestrians and cyclists. In urban areas, the interaction between road users is the basis of traffic operations. Safe interaction implies that road users both correctly understand their respective status in traffic, and have enough time to adapt their movements and behaviour in relation to...
each other’s position and action. Lower speeds obviously promote safer interaction. The same applies to clear and simple infrastructure design and good mutual visibility. Parked vehicles and roadside obstacles have often been identified as active factors in accidents involving vulnerable road users, particularly children. Differences in expectations between the various types of road users are a contributing factor to accidents involving pedestrians and cyclists. This occurs particularly in situations where one group feels protected and adapts accordingly while another group is unaware of such safety feelings and therefore expects more careful behaviour. This is the case, for example, on zebra crossings where priority to pedestrians is not systematically accepted by drivers. All forms of risk-taking by either drivers or vulnerable road users are likely to create differences in expectations, as well as non-compliance with the right-of-way (Hlde, 2018).

Infrastructure design, when it does not show clearly where priority or right-of-way is, or where vulnerable road users are supposed to come from, obviously contributes to wrong expectations. Intersections between carriageways and cycle tracks are particular locations where infrastructure design often creates problems. The lack of conspicuity of vulnerable road users is bound to make such situations worse.

Other prominent factors include a lack of data gathering and insufficient information handling by vulnerable road users, which particularly occurs when pedestrians or cyclists travel on a familiar route; and some perceptual problems experienced by children and by the elderly particularly with regard to the assessment of speed of approaching vehicles, time gaps, and distances, that may be worse at night-time. (Ajayi, 2021).

Children have been found to have insufficient knowledge of traffic rules, both as pedestrians and cyclists. Very young children are often found on roads whose traffic conditions they do not have the ability to cope with; this may be with or without the approval of their parents, which calls for specific measures addressing families.

Finally, excessive alcohol consumption has been observed in a significant proportion of accidents involving pedestrians or cyclists, either on the part of drivers or on the part of the vulnerable road users themselves. Alcohol involvement is one aspect of a larger societal problem, which cannot be solved only through traffic safety approaches.

8.0 Recommendation

The issue of vulnerable road users in Nigeria is indeed a pressing concern that requires attention. Listed are some recommendations to address the plight of vulnerable road users in Nigeria

1. **Enhance Infrastructure**: Invest in improving the road infrastructure, such as constructing safe sidewalks, crosswalks, and cycling lanes. This will create dedicated spaces for pedestrians, cyclists, and other vulnerable road users, promoting their safety.

2. **Road Safety Education**: Launch comprehensive road safety campaigns that target vulnerable road users. Provide educational programs to schools, communities, and workplaces, focusing on traffic rules, safe crossing techniques, and responsible road behaviour. Emphasize the importance of wearing helmets for cyclists and seat belts for passengers.
3. **Law Enforcement**: Strengthen law enforcement measures to ensure compliance with traffic regulations. Increase the presence of traffic officers in high-risk areas and enforce penalties for traffic offences. This will discourage reckless driving and enhance the protection of vulnerable road users.

4. **Public Transportation**: Improve and expand public transportation systems, making them more accessible and affordable. This will encourage people to use public transport instead of relying on individual vehicles, reducing congestion and the potential risks for vulnerable road users.

5. **Engage Local Communities**: Collaborate with local communities, NGOs, and relevant stakeholders to raise awareness about the challenges faced by vulnerable road users. Encourage community initiatives, such as neighbourhood watch programs, to promote safety and vigilance on the roads.

6. **Technology and Innovation**: Utilize technology to enhance road safety. Implement smart traffic systems, including traffic lights with countdown timers, speed limit monitoring systems, and intelligent pedestrian crossings. Explore innovative solutions like mobile applications that provide real-time updates on road conditions and safety alerts.

7. **Data Collection and Analysis**: Establish a robust data collection system to gather information on road accidents involving vulnerable road users. Analyse the data to identify patterns, high-risk areas, and common causes of accidents. This will help in developing targeted interventions and evidence-based policies.

8. **Collaboration with Transport Companies**: Work with transportation companies, such as ride-hailing services and delivery companies, to promote safe driving practices and ensure their drivers adhere to traffic regulations. Provide training programs specifically focusing on the safety of vulnerable road users.

9. **Advocacy and Policy Reform**: Advocate for policy reforms that prioritize the safety of vulnerable road users. Push for the adoption of comprehensive road safety legislation and regulations. Lobby for increased budget allocations towards road safety initiatives and infrastructure improvements.

10. **Research and Innovation Grants**: Encourage research institutions and organizations to conduct studies on road safety in Nigeria, with a particular focus on vulnerable road users. Provide grants and funding opportunities to support innovative solutions and interventions.

By implementing these recommendations, Nigeria can make significant progress in addressing the challenges faced by vulnerable road users, ensuring safer roads and reducing road crashes and injuries resulting thereof.
References


