



Road Traffic Accidents Along East–West Road in the Niger Delta Region: Perceived Causes and Preventive Measures

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Abstract: Road accidents have become a normal and re-occurring phenomenon along the East-West Road which has constituted a societal menace. Although both the developed and developing nations of the world have suffered from varying degrees of road accidents, the developing countries clearly dominates with Nigeria having the second highest rate of road accidents among other countries in the world. Deaths from reckless driving are the third leading cause of death in Nigeria. This paper examines road traffic accident problems along the East West Road in the Niger Delta. The causes of accidents and their general preventive measures are discussed. A review of literature on road traffic accidents and its impact was done. There is need to view road traffic accident as a very serious issue requiring urgent attention aimed at preventing untimely deaths, reducing the health, social and economic impacts it portends to the average Niger Deltans.

Keywords: Road traffic accident, Niger Delta region, Vehicle, Causes, Preventive measures.

Introduction

The East-West Road in the Niger Delta across the country deterioration often begins with the origin of cracks or pot holes on the road pavements either at the edges or along the drive way which differs by their shapes, configuration, amplitude of loading, movement of traffic and rate of deformation,(World Health Organization, 2013;Sheriff, 2009;Asalor, 2010). The presence of these pot holes aside from human and vehicle related factors are known to be major causes of road traffic accidents in Nigeria. The immediate cause of a road accident may also be attributable to mechanical factor and carelessness in the

form of omission to check and maintain the vehicle at the appropriate time. Road traffic accident is therefore an unexpected phenomenon that occurs as a result of the operation of vehicles including

bicycles and handcarts on the public highways and roads. Accidents may be fatal, resulting in deaths of the road users (passengers, drivers or pedestrians), or minor when it is not severe enough as to cause substantial hardship. Accidents are part of the constant trial and error process of living and they result from the fumbles that start with childhood dreams and continue right through to the forgetfulness or confusion of old age. In other words,

accidents can occur at any time during the life span of a man. Accident can be defined as unplanned or unintended occurrence that interrupts or interferes with a work activity. Many accidents, in fact, the great majority, yield no injury and receive only passing attention, if any, unless do considerable damage or are otherwise costly, (Eze, 2012; Agbonkhese et al., 2013). Motor vehicle crashes are the leading cause of death in adolescents and young adults (Onokala, 2009) and of the estimated 10,000 road deaths occurring annually worldwide, 74% are in developing countries, (Road Accidents: More Causes for Alarm, 2013; The Nation Newspaper, 2013; Agbonkhese et al., 2013). Dramatic increases in the proportion and absolute number of traffic fatalities have been witnessed in a number of developing countries, while decreased by more than 20% in industrialized nations, (Van Elslande et al., 2008; Asalor, 2010).

On a lot of Nigerian roads across the country deterioration often begins with the origin of cracks or pot holes on the road pavements either at the edges or along the drive way which differs by their shapes, configuration, amplitude of loading, movement of traffic and rate of deformation. The presence of these pot holes (Mary Ward, 2007; Odugbemi, 2010) from human and vehicle related factors are known to be major causes of road traffic accidents in Nigeria. The immediate cause of a road accident may also be attributable to mechanical factor and carelessness in the form of omission to check and maintain the vehicle at the appropriate time. Road traffic accident is therefore an unexpected phenomenon that occurs as a result of the operation of vehicles including

bicycles and handcarts on the public highways and roads. Accidents may be fatal, resulting in deaths of the road users (passengers, drivers or pedestrians), or minor when it is not severe enough as to cause substantial hardship.

Road traffic accident causes

The causes of road traffic accidents depend on a list of factors which can be broadly divided into:

Vehicle operator or driver factors

Vehicle factors

Road pavement condition factors

Environmental factors.

Road traffic accident can be caused by a single factor or a combination of these factors. Most safety studies come to the conclusion that vehicle operator or driver factors (or human error) are the main cause of accidents. Nevertheless, such a conclusion has not proved to be efficient in its capacity to offer adequate means to fight against this error or misfit.

Driver factors

Driver factors in road traffic accidents are all factors related to drivers and other road users. However, unlike the findings of TRACE (Traffic Accident Causation in Europe), in Nigeria, studies and road traffic accident records have clearly shown that the attitude of the Nigerian driver to driving code and etiquette is the single most important contributing factor as driver factors solely contributes to about 57 per cent of road traffic accidents and 93 per cent either alone or in combination with other factors.

Driver-related issues include:

1. Speed and indiscriminate use of Sirens

An increase in average speed is directly related both to the likelihood of a crash occurring and to the severity of the consequences of the crash. Travelling too fast for prevailing conditions or above the speed limit contributes to road traffic accidents. The risk of being injured increases exponentially with speed much faster than the average speed. The severity of accident depends on the vehicle speed change at impact and transfer of kinetic energy. Though vehicles travelling slower than average speed are also at

increased risk of road traffic accidents, most involved speed too fast for the conditions.

2. *Drink-driving and use of drugs*

Drinking and driving increases both the risk of a traffic accident and the likelihood that death or serious injury will result. The risk of being involved in a traffic accident increases significantly above a blood alcohol concentration (BAC) of 0.04 g/dl. Doctors often advise patients to abstain from driving vehicles or operation of machineries while under certain drugs as these drugs are known to cause side effects of sleepiness and fatigue

3. *Distracted driving*

There are many types of distractions that can lead to impaired driving, but recently there has been a marked increase around the world in the use of mobile phones by drivers that is becoming a growing concern for road safety. The distraction caused by mobile phones can impair driving performance in a number of ways, e.g. longer reaction times (notably braking reaction time, but also reaction to traffic signals), impaired ability to keep in the correct lane, and shorter following distances. Text messaging also results in considerably reduced driving performance, with young drivers at particular risk of the effects of distraction resulting from this use. Drivers using a mobile phone are approximately four times more likely to be involved in a traffic accident than when a

driver does not use a phone. Hands-free phones are not much safer than hand-held phone sets as they too have been recorded to result in traffic accidents when shocking news is received while driving.

4. *Inexperience and unqualified drivers*

Majority of Nigerian drivers do not possess the right authorization from government authorized agencies like the Federal Road Safety Commission, FRSC and are unqualified before driving cars on road pavements. This is the major reason most Nigerian drivers are ignorant of highway codes or traffic orders. They put their lives

and those of other road users at the risk of traffic accidents. As a result of their inexperience, since they were never given any tutorial or taught how to use their vehicles on highways by government accredited driving schools, their decision-making ability and reaction speed to traffic is bad.

5. *Non-use of safety device and negligence of duty by government established agencies*

Seat belts are safety device provided to safeguard a driver in the course of an accident. The use of vehicle seat belts also helps to ensure that the driver is in an upright and comfortable position thus enabling him/her to properly operate the vehicle. However, this provided safety device has been grossly abused thus increasing the risk of fatality among front-seat and of rear-seat passengers. Also, majority of motorcyclists or their passenger does not wear helmets while plying the road thus exposing themselves and indeed other road users to road traffic accident. Officials of government agencies such as the FRSC and Vehicle Inspection Office, VIO do not help matters as they have been seen to take their duties for granted by just being mere spectators each time they come across a driver or passenger not wearing seat belt, a driver using mobile phone while driving or a motorcyclist and passenger not wearing helmets.

6. *Vehicle factors*

The vehicle itself is a key factor when analyzing the remote causes of a traffic accident and it is incorporated with gadgets like, the horn, side mirrors, wipers, braking system, trafficators, headlights and break-lights (to mention just a few) so as to avoid road accident. Malfunction of any vehicle parts such as tyres, engines, braking systems, light systems can cause road traffic accidents. The reliability of the vehicle is itself a function of the condition of vehicle at every given time. Vehicle components and vehicle maintenance are the two main conditions

which affect vehicle factors as it relates to causes of road traffic accidents.

7. Vehicle Components

The assembled components of a vehicle working effectively uniformly or abnormally as a unit will determine the occurrence of a traffic accident.

8. Vehicle Design

The specific maximum load designed for a vehicle in its entire ramification goes a long way towards determining its stability on the road surface. When vehicles are subjected to stress over and above the provisions of the design specifications as is the case of a lot of vehicles plying the Nigerian roads, deterioration for the condition of the vehicle in accelerated wear and tear sets in. Design defects affect the subsequent condition of the vehicle once it is put on the road and operated either normally or otherwise which may result to possible road traffic accidents.

9. Vehicle Brake System

Brakes are generally applied to rotating axles or wheels. Vehicles use a combination of braking mechanisms which works jointly with the accelerator as the main synchronizer of the speeds of vehicles. Any malfunctioning of the brake sub-system should be taken very seriously as a potential source of unavoidable accident.

10. Vehicle Body and Tyres

The firmness of the structure of a vehicle though less prominent attributes to some measure in causing road traffic accidents. One of the dominant factors in determining the stability and safety of vehicles on the road is the tyres. Tyres designed and specified for cold regions are not those specified for temperate regions like Nigeria. However, this is not the case of most tyres used in Nigeria as vehicle owners do not take the specification of tyres into consideration when buying and fixing tyres onto their vehicles and this has been known to cause tyre raptures thus leading to traffic accidents. Some other tyre related causes of road accidents could be due

to one or a combination of overinflated tyres, underinflated tyres, thread of tyres are thoroughly worn out.

11. Vehicle Lights

The failure of vehicle light is a major factor in road traffic accident. Failure of vehicle lights has a tendency to misinform and mislead other road users thereby providing a good opportunity for an accident to occur. Vehicle lights are very useful at all times during the daylight, in darkness and in poor/bad weather. For example, a failed trafficator light of a vehicle ahead will not normally provide the usual warning to other vehicles behind that it is about to undertake a turning maneuver and if for instance the driver of the vehicle behind has not allowed for a sufficient stopping sight distance or the vehicle has a faulty brake sub-system, this could result in an accident occurring.

12. Vehicle Engine

The power house and heart of the vehicle is the engine sub-system which is responsible for bringing other parts of the vehicle into motion and one whose sudden failure on a highway is more likely to cause an accident if the volume of traffic is sufficiently high at that point in time. Even when the traffic is reasonably low, mismanagement of the failure by an experienced driver could cause road traffic accident.

13. Vehicle Maintenance

Acquiring a well-designed vehicle and putting it onto road use is not enough to prevent the vehicle from causing road traffic accident. Actually, not performing routine maintenance and checks on the vehicle can lead to deterioration of the vehicle sub-systems and thus expose the vehicle to causing road traffic accident as a well-maintained vehicle is less likely to be involved in accidents. For example, if the brakes and tires are good and the suspension well-adjusted, the vehicle is more controllable in an emergency and thus, better equipped to avoid accidents.

14. Road pavement condition factors

Nigerian highways are arguably one of the worst and most dangerous in the world as they are often poorly designed, necessary important road facilities like drains are not adequately provided for and to top it up, they are rarely rehabilitated and are in dilapidated states. The deplorable states of the Nigerian highways create a scenario that makes vehicles and other road users susceptible to road traffic accidents. This further confirms that road traffic accidents are not just caused by human error or drivers' negligence.

15. *Environmental factors*

Environmental related conditions such as fog, sunrays, mist and rain in no small measure contributes greatly to the rate of road traffic accident in Nigeria today. Having stated earlier that most vehicles on Nigerian roads are poorly maintained, a poorly maintained vehicle for example on a rainy day is most likely to cause road traffic accident if the wipers are faulty and not functioning as the driver will be unable to see ahead.

Road traffic accident preventive measures

Guarding against the causes of road traffic accident is a collective affair as it affects everyone directly or indirectly. Haven identified some of the remote and immediate causes of road traffic accidents in Nigeria, here are some of the suggested preventive measures if well adopted and practiced, will go a long way towards reducing and curtailing road traffic accidents in Nigeria.

1. Sanitation of motor parks from alcohol sales and consumption

Shops where alcoholic beverages are sold are visibly present in most if not all Nigerian motor parks today without recourse to the very negative effects of drunk drinking by drivers who are the main consumers. The resultant effect is reckless driving on our Highways. There needs to be proper enactment of legislations to address this issue and thorough enforcement of legislations already put in place forbidding the sales of alcoholic drinks or beverages in our motor

parks. Hawkers of traditional liquid mixtures which consist of alcoholic contents should also be chased out of and restricted from our motor parks as it has been noticed that most drivers who are also their major customers also do take these "concoctions" or drinks before embarking on their journey.

On the part of the citizens, drivers should not take alcohol when they are about to, or when they are driving as this will in no small measure help to eliminate drunk driving and the resultant road traffic accident that is most likely to occur.

2. Routine maintenance and rehabilitation of road pavements. Comprehensive vehicle maintenance and repair

Bad road pavement conditions in Nigeria are one of the principal causes of road accidents. These roads are poorly constructed and rarely managed or rehabilitated. When these roads are not maintained and rehabilitated, they tend to deteriorate. This deterioration often begins with the origin of cracks and potholes either at the sides of the road pavements or along the drive way. Therefore, a remote way of ensuring accident reduction/prevention is for the government, which is charged with the responsibility for good maintenance to draw up and implement to the later on regular basis, budgets that match the demands of the road network and its infrastructure.

As regards the vehicles which are a major factor in road traffic accidents, privately owned and mass transit operators should, as a matter of high priority, introduce and operate comprehensive maintenance and repair programme for their vehicles.

3. Curbing menace of tankers and articulated vehicles

Efforts must be made to curb the menace of tankers and articulated vehicles on our roads. The carnage and indiscriminate parking of these tankers and articulated vehicles on roads has to be stopped. Public parks should be provided for these tankers and articulated

vehicles rather than using the highways as parks thus resulting to serious traffic flow obstructions and menace to other road users thus resulting to traffic accidents as it has been in past cases. Most of these tankers and articulated vehicles should ensure that they have adequate lightings and reflectors at their rare so as to alert oncoming vehicle of their presence on the road.

4. Total prohibiting the use of mobile phones while driving

While there is little concrete evidence yet on how to reduce mobile phone use while driving, the Nigerian government needs to be proactive. Actions that can be taken to address this ill tradition by Nigerians include enacting, adopting and fully enforcing legislative measures prohibiting the use of mobile phones while driving. Launching regular public awareness campaigns to address this problem with a view of presenting before the general public the grave dangers of driving and using the mobile phone. As the saying goes “life has no duplicate”. There should be regularly collection of data on road traffic accidents as a result of distracted driving while using the mobile phone to better understand the nature of this problem and to holistically address it.

5. Training and retraining/public enlightenment

The road traffic system itself is dynamic in nature. Hence training and retraining of drivers constitute a formidable means of effectively dealing with the issue of road traffic accident reduction. In Nigeria today, major road traffic accident scenes have been noticed to involve commercial transporters/vehicles. To this end, there is urgent need for public transport operators to ensure that their drivers are trained and retrained in collaboration with the Federal Road Safety Commission, FRSC. As such, public enlightenments should be intensified by the various agencies that work together towards ensuring safer roads and thus the road users. Also, elementary training or education

should start through a child’s formal education so that from the formation stage of one’s life, one is already aware and exposed to the causes of road traffic accidents.

6. Diligence of duty by government established agencies

Government should ensure that all established agencies such as Federal Road Safety Commission, FRSC and Vehicle Inspection Offices, VIOs must carry out their jobs effectively and thoroughly; checking the conditions of vehicles that ply on our road, without extorting money or collecting bribes from drivers. Majority of the vehicles that ply our roads are badly-maintained and most people buy cars that have already been used and scrapped and they believe their unlearned and unskilled mechanic will rehabilitate the over used car to function well. This often over used cars thereby increase the frequency of road traffic accidents. The FRSC and VIO must thoroughly check and examine every vehicle including tankers and articulated vehicles that would ply the roads in order to ensure that they are road worthy at all times.

7. Obeying traffic signs, rules and regulations

There is need for all road users to properly understand traffic signs and strictly in vive the habit of obeying all traffic rules and regulations so as to make the road safe for use by all. Drivers should at all cost avoid dangerous over-taking on our roads.

8. Speed regulations and prohibiting the use of sirens

In areas where vulnerable road users are common; such as residential areas, market areas and around schools, the speed of vehicles should be limited to 30km/hr as this will go a long way towards reducing the risk of road traffic accident occurring as pedestrians have a greater chance of surviving a road traffic accident at 30 km/h or below. It is already an established fact that there is grouse abuse of siren usage either by private or political public office holders’ drivers’ on

Nigerian roads coupled with indiscriminate driving at outrageous speed limits which often than not results to nuisance, noise pollution and road traffic accidents. The use of sirens by private or political public office holders on Nigerian roads should be totally banned with only ambulances on emergencies allowed to use this facility and it should only be used when on life saving missions so that the importance of this facility (sirens) will be better appreciated by other road users towards ensuring that these ambulances gain the much-needed assistance and considerations from other road users when on emergency missions.

9. Effective and efficient usage of safety devices

When vehicle seat-belt laws and motorcycle helmet laws are enforced effectively in Nigeria, helmet wearing rates can increase to over 90%. Requiring helmets to meet recognized safety standards is important to ensure that helmets can effectively reduce the impact of a collision to the head in the event of a road traffic accident. Wearing a motorcycle helmet correctly can reduce the risk of death by almost 40% and the risk of severe injury by over 70%. In a similar way, wearing a seat-belt reduces the risk of a fatality among front-seat passengers by 40–50% and of rear-seat passengers by between 25–75%. Mandatory seat-belt laws and subsequent enforcement will be very effective at increasing seat-belt wearing rates amongst drivers on Nigerian roads. Seat-belts as well as child restraints if correctly installed and used will reduce deaths among infants by approximately 70% and deaths among small children by between 54% and 80%.

10. Ensuring proper vehicular morning parades

Vehicle drivers should adequately ensure that they check every part in their vehicles to ensure that they are in good condition before putting them into use on Nigerian roads. Before driving a vehicle for the first time every day, adequate efforts should be made to

check the radiator water level, brake hydraulic fluids and that of clutch for manual vehicles, level of oil in engine, fan blades, engine belts, tyre gauge, etc. every morning while the vehicle is put on and allowed to run idle for a few minutes.

11. Developing and utilizing other means of land transportation

Nigeria's transport system solely depends on road transport in conveying goods and people from one end to another. This is responsible for very high volume of traffic on the road transport system and also a drastic reduction in the service life of roads before failures start to set in. The failed road pavement and high volume of road traffic will mean more travel time and more stress which is likely to result in road traffic accidents. To this end, the Nigerian government needs to urgently develop and utilize other means of land transportation systems like railways and also do same in that of water transportation. The resultant effect of developing and utilizing other means of land transportation is that it will drastically reduce volume of road traffic, increase the service lifespan of roads and subsequently reduce the occurrence of road traffic accidents.

12. Regulating maximum travel time of commercial drivers per day

Laws regulating travel time of commercial drivers per day should be enacted and fully enforced by the Nigerian government through the FRSC in collaboration with union bodies like the Nigerian Union of Road Transport Workers, NURTW. This law should seek to mandate the maximum travel time an individual driver should engage in driving/travelling per day. This is in view of the fact that most transport company owners/operators do not put into consideration fatigues incurred by drivers and their vehicles as a result of driving for too many hours a day but rather concentrate more on their profits rather than human lives. Vehicle and driver fatigue has been known to be a cause of road traffic accidents in Nigeria.

Being that the driver is the main actor in control of the

factors responsible for road traffic accidents, it is absolutely that he be both physically and mentally alert when operating the vehicle.

Recommendation

Factors, consisting of the vehicle, the driver, the road pavement condition and the environmental condition at a given point in time which often than not causes road traffic accidents have been examined. The much-needed preventive measures at reducing the unacceptable carnage and very high occurrence of road traffic accidents on Nigerian roads have also been suggested. It is our belief that if the preventive measures highlighted herein are carefully implemented, Nigeria highways will be safe for all and devoid of frequent road traffic accidents.

Conclusions

Road traffic accident in Nigeria is a very serious issue requiring a holistic attention and approach towards curbing its occurrence considering the magnitude of the problem it presents to every Nigerian road user. As a people, having a 'Safe Road' and curbing road traffic accidents in Nigeria is ensuring that road traffic accident preventive measures are effectively and efficiently practiced at all times.

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