*THE INTERNATIONAL JOURNAL OF HUMANITIES & SOCIAL STUDIES*

# The Political Economy of Road Safety Audit Operations in Nigeria: A Literature Review

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***Abstract:***
*This paper synthesises the main massages from existing literature on the challenge of ensuring road safety – including: the economic impacts of the problem, political economy challenges of road safety, strategies for investigating and auditing road traffic accidents and policy interventions programme on accident prevention in Nigeria. These forms of interventions are intended to ensure that vehicles incorporate safety features (e.g., seat belts, and that both vehicles and safety equipment (e.g., motorcycle helmets) comply with high standards. Drawing together these separate strands gives us a more complete picture of when, how and why it may be possible to create strategies/interventions to reduce the number of injuries and deaths on the road.*

***Keywords:*** *Road safety, unsafe at any speed, audit, political economy, literature review, and governance*

## 1. Introduction

According to global status report on road safety 2013; Africa is most hit (24.1 deaths per 100,000 population) with the road traffic scourge. The overall impact is negative on the general development of member countries. Nigeria as a middle income and developing country with a land mass of about 923,768km$^2$ out of which 204,000km (paved and unpaved), constitute the road network. About 80% of mobility in Nigeria is done using the road. On a global scale it was reported that about 1.35 million people die annually from road traffic crashes while another 50 million suffer various degrees of injuries, some of which are life-changing (Status Report of UN Decade of action 2011-2020 and FRSC, 2020).

The emergence of this ugly global trend is even more disturbing when it is considered that global annual deaths attributed to RTCS were 1.24 million in 2013, 1.25 million in 2014 and 1.35 million in 2018. There are indications that about 90% of these fatalities are accounted for by low- and middle-income countries that have only about 48% of registered vehicles. At least 1,076 people were killed in road accidents in Nigeria in the third quarter (Q3) of 2020 alone (National Bureau of Statistics, Nigeria, 2020).

Road traffic accidents statistics in Nigeria reveal a serious and growing problem with absolute fatality rate and causality figure rising rapidly. The majority of developing countries, accident occurrence and released deaths are relative to either population or number of vehicles. Ironically, in Nigeria, studies have indicated that an increasing number of accidents (Onakomaya, 1988; Gbadamosi, 2003; Atubi and Onokala, 2009) has accompanied better facilities in terms of good quality and standardized roads. This is contrary to the trends in countries where even the level of the sophisticated road network and the volume of vehicular traffic are higher (Atubi, 2010a, 2015a and 2020b)

The WHO estimates indicated 21.04 fatalities per 100,000 population. This figure is below the average of 27 fatalities per 100,000 populations estimate for African region. The level of motorization and population per km of road also suggest that Nigeria is gradually improving compared to other countries in Africa and the South East Asia (See Table 1).

| Year | Fatal Cases | Serious Cases | Minor Cases | Total Cases | No. Killed | No. Injured | Total Casualty |
|---|---|---|---|---|---|---|---|
| 1960 | 826 | 9,065 | 4,239 | 14130 | 1,083 | 10,216 | 11299 |
| 1961 | 193 | 9,982 | 5,788 | 15963 | 1,313 | 10,614 | 11927 |
| 1962 | 1263 | 9,159 | 5,895 | 16317 | 1,578 | 10,341 | 11919 |
| 1963 | 967 | 6,918 | 11,950 | 19835 | 1,532 | 7,771 | 9303 |
| 1964 | 911 | 7,371 | 7,645 | 15927 | 1,769 | 12,581 | 14350 |
| 1965 | 1029 | 7,762 | 8,113 | 16904 | 1,968 | 12,024 | 13992 |
| 1966 | 1680 | 5,600 | 6,270 | 13550 | 2,000 | 13,000 | 15000 |
| 1967 | 1560 | 5,200 | 6,240 | 13000 | 240 | 10,000 | 10240 |
| 1968 | 459 | 5,865 | 5,839 | 12163 | 2,808 | 9,474 | 12282 |
| 1969 | 1559 | 8,199 | 6,230 | 15988 | 2,437 | 8,804 | 11241 |

| Year | Fatal Cases | Serious Cases | Minor Cases | Total Cases | No. Killed | No. Injured | Total Casualty |
|---|---|---|---|---|---|---|---|
| 1970 | 1999 | 6,666 | 7,991 | 16656 | 2,893 | 13,154 | 16047 |
| 1971 | 129 | 8,098 | 8,518 | 16745 | 3,206 | 14,592 | 17798 |
| 1972 | 2782 | 9,275 | 11,130 | 23187 | 3,921 | 16,161 | 20082 |
| 1973 | 2981 | 11,557 | 11,925 | 26463 | 4,537 | 18,154 | 22691 |
| 1974 | 3467 | 9,446 | 13,869 | 26782 | 4,992 | 18,660 | 23652 |
| 1975 | 2834 | 17,352 | 11,331 | 31517 | 5,552 | 20,132 | 25684 |
| 1976 | 905 | 17,352 | 19,624 | 37881 | 6,761 | 28,155 | 34916 |
| 1977 | 4242 | 14,140 | 17,334 | 35716 | 8,000 | 30,023 | 38023 |
| 1978 | 4333 | 14,444 | 17,334 | 36111 | 9,252 | 28,854 | 38106 |
| 1979 | 3513 | 11,708 | 14,050 | 29271 | 8,022 | 21,203 | 29225 |
| 1980 | 1856 | 14,855 | 15,427 | 32138 | 8,736 | 25,484 | 34220 |
| 1981 | 4056 | 13,510 | 16,214 | 33780 | 10,202 | 26,337 | 36539 |
| 1982 | 4451 | 14,838 | 17,805 | 37094 | 11,382 | 28,589 | 39971 |
| 1983 | 3853 | 12,844 | 15,412 | 32109 | 10,462 | 26,866 | 37328 |
| 1984 | 4467 | 10,557 | 13,868 | 28892 | 8,830 | 23,861 | 32691 |
| 1985 | 3597 | 11,991 | 14,380 | 29968 | 9,221 | 23,853 | 33074 |
| 1986 | 3022 | 10,075 | 12,091 | 25188 | 8,154 | 22,176 | 30330 |
| 1987 | 3385 | 11,286 | 13,544 | 28215 | 7,912 | 22,747 | 30659 |
| 1988 | 4127 | 11,091 | 10,574 | 25792 | 9,077 | 24,413 | 33490 |
| 1989 | 3838 | 10,314 | 9,835 | 23987 | 8,714 | 23,687 | 32401 |
| 1990 | 6140 | 8,796 | 6,998 | 21934 | 8,154 | 22,786 | 30940 |
| 1991 | 6719 | 8,982 | 6,845 | 22546 | 9,525 | 24,508 | 34033 |
| 1992 | 6986 | 9,324 | 6,554 | 22864 | 9,620 | 25,759 | 35379 |
| 1993 | 6735 | 8,443 | 6,281 | 21459 | 9,454 | 24,146 | 33600 |
| 1994 | 5407 | 7,522 | 5,275 | 18204 | 7,440 | 17,938 | 25378 |
| 1995 | 4701 | 7,276 | 5,053 | 17030 | 6,647 | 14,561 | 21208 |
| 1996 | 4790 | 6,964 | 4,688 | 16442 | 6,364 | 15,290 | 21654 |
| 1997 | 4800 | 7,701 | 4,987 | 17488 | 6,500 | 10,786 | 17286 |
| 1998 | 4757 | 7,081 | 4,300 | 16138 | 6,338 | 17,341 | 23679 |
| 1999 | 4621 | 6,888 | 4,356 | 15865 | 6,795 | 17,728 | 24523 |
| 2000 | 5287 | 6,820 | 4,499 | 16606 | 8,473 | 20,677 | 29150 |
| 2001 | 6966 | 8,185 | 5,379 | 20530 | 9,946 | 23,249 | 33195 |
| 2002 | 4029 | 7,190 | 3,325 | 14544 | 7,407 | 22,112 | 29519 |
| 2003 | 3910 | 7,882 | 2,572 | 14364 | 6,452 | 18,116 | 24568 |
| 2004 | 3275 | 6,948 | 4,051 | 14274 | 5,351 | 16,897 | 22248 |
| 2005 | 2299 | 4,143 | 2,620 | 9062 | 4,519 | 15,779 | 20298 |
| 2006 | 2600 | 5,550 | 964 | 9114 | 4,944 | 17,390 | 22334 |
| 2007 | 2162 | 4,812 | 1,503 | 8477 | 4,673 | 17,794 | 22467 |
| 2008 | 3024 | 5,671 | 2,646 | 11341 | 6,661 | 27,980 | 34641 |
| 2009 | 2460 | 6,024 | 2,370 | 10854 | 5,693 | 27,270 | 32963 |
| 2010 | 2388 | 6,815 | 2,182 | 11385 | 6,052 | 35,691 | 41743 |
| 2011 | 2840 | 8,357 | 1,999 | 13196 | 6,054 | 41,165 | 47219 |
| 2012 | 2935 | 8,277 | 2,050 | 13262 | 6,092 | 39,348 | 45440 |
| 2013 | 3294 | 8,589 | 1,700 | 13583 | 6,544 | 40,057 | 46601 |
| 2014 | 3117 | 6,356 | 907 | 10380 | 5,996 | 32,063 | 38059 |
| 2015 | 2854 | 6,039 | 841 | 9734 | 5,440 | 30,478 | 35918 |
| 2016 | 2638 | 5,633 | 1,423 | 9694 | 5,053 | 30,105 | 35158 |
| 2017 | 2587 | 3,456 | 1,340 | 7383 | 5,121 | 31,094 | 36215 |
| 2018 | 2739 | 5,849 | 1,153 | 9741 | 5,181 | 32,220 | 37401 |
| 2019 | 2896 | 6,911 | 1,265 | 11072 | 5,483 | 35,981 | 41464 |
| Total | 194237 | 515927 | 440591 | 1155573 | 366746 | 1308185 | 1674931 |

*Table 1: Road Traffic Crash Report from 1960-2019 in Nigeria*
*Source: FRSC, 2021*

The share of global road deaths in low-income countries (LICs) increased from 12% to 16% during the 2010-2013 period with a road death risk of 24.1 deaths per 100,000 population in 2013 (WHO, 2013). It is estimated that road death risk in Africa – the global capital of road trauma – is at a troubling 26.6 deaths per 100,000 people (WHO, 2018).

The sustainable development goals (SDGs) prioritize transport solutions and investments towards helping countries achieve safer transport systems. Road safety, a key indicator of SDGs 3 and 11, is now a recognised global development priority. To attain the goals of providing safe and sustainable transport (SDG 11.2) and deal with deaths and injuries from road traffic crashes (RTCs)(SDG 3.6) in Africa and other developing countries similarly situated.

The World Health Organisation, 2018 global status report on road traffic shows that one out of every four road crashes that occur in Africa are reported in Nigeria. Every four hours, no fewer than two lives are lost on Nigerian roads. And every year about 20,000 of the 11,654 million vehicles in the country are involved in accidents (Okogba, 2018; National Bureau of Statistics, 2019, FRSC, 2018).

The number of lives lost to road traffic accidents from January 2013 to June 2018 are as follows: 2013 – 5,539; 2014 – 4,430; 2015 – 5,400; 2016 – 5,053; 2017 – 5,049, 2018 – 5,449. This tally indicates that in 2018, no fewer than 126 lives had been wasted in road crashes. Summation of these figures gives a heart trending total of 28,195 lives crashed in 68 months, an equivalent of 415 lives per month, 14 persons per day and two lives every four hours. This makes Nigeria one of the countries with very high road fatalities in the world (FRSC, 2018; WHO, 2018; Atubi, 2020a, 2020b) (See Table 2).

| Country | Year | Population | Road Network (km) | Km Road Per 100km² Of Land Area | Population To Road Ratio | Estimated Number Of Deaths | RTC Deaths Per 100,000 Persons | Ranking RTC Deaths |
|---|---|---|---|---|---|---|---|---|
| United Kingdom | 2018 | 65,105,246 | 451,913.54 | 186.80 | 144.07 | 2,278 | 3.7 | 7th |
| Japan | 2018 | 126,168,156 | 367,229.42 | 100.75 | 3,443.57 | 6,625 | 5.2 | 19th |
| Australia | 2018 | 23,470,145 | 860,608.45 | 11.20 | 22.27 | 1,363 | 6.0 | 23rd |
| United States | 2018 | 327,884,000 | 6,690,319.16 | 73.14 | 49.01 | 35,490 | 11.4 | 55th |
| Bangladesh | 2018 | 177,330,990 | 22,072.05 | 16.96 | 8,034.39 | 17,289 | 11.6 | 57th |
| Mexico | 2018 | 122,311,746 | 410,259.99 | 21.10 | 298.13 | 16,714 | 14.7 | 84th |
| Nigeria | 2018 | 204,900,000 | 230,240.00 | 25.00 | 870.00 | 34,670 | 16.9 | 101st |
| Pakistan | 2018 | 207,862,518 | 271,519.58 | 35.22 | 765.55 | 130,131 | 17.4 | 105th |
| Russia | 2018 | 142,122,776 | 1,224,659.05 | 7.48 | 116.05 | 26,567 | 18.6 | 114th |
| India | 2018 | 1,296,834,042 | 5,637,313.06 | 189.60 | 230.04 | 231,027 | 18.9 | 119th |
| China | 2018 | 1,376,745,757 | 5,353,082.38 | 57.39 | 257.15 | 275,983 | 20.5 | 132nd |
| Brazil | 2018 | 218,622,311 | 1,780,858.00 | 21.05 | 122.76 | 36,499 | 22.5 | 147th |
| South Africa | 2018 | 48,440,134 | 1,044,960.67 | 86.14 | 46.36 | 15,995 | 31.9 | 175th |

*Table 2: RTC Report in Selected Countries*
*Source: Nigeria Road Safety Strategy (NRSS) 2014-2018*

Road safety is a major international health issue, despite the scale of the human cost, road safety has historically been given low priority, with interventions having a highly technical focus and often targeting the safety of relatively low risk groups. This is beginning to change, however, with the development of a series of global targets and a new system approach to road safety challenges.

Furthermore, urbanisation involves an increased number of trips in urban areas, this has brought about the acquisition of motor vehicles to meet up with the transportation needs of the population. According to the Federal Ministry of Works (2017), new vehicle importation in the country increased by 45% in 2015, and the first half of 2016 recorded an increase by 15% compared with the same period in 2015. Apparently, Nigeria is getting more cars on the road. The motor vehicle depends on fuel for their operations and therefore has resulted in increased need for petroleum products which are now majorly transported by trucks.

With increasing urbanisation and motorization in Nigeria, the road network in the country has continue to witness pressure on the roads leading to more deplorable state of the roads, gridlocks, traffic congestions and road traffic crashes. The existing road networks is more likely to remain the same in the nearest future following the current reduction in the Gross Domestic Product (GDP) of the country as a result of the global fall in oil prices which has affected the budgetary allocations to all levels of government in the country.

Private-ownership of roads in Nigeria is still at the deliberation stage. In other words, roads (tarred and untarred) are owned by Federal, State and Local authorities in Nigeria. Most of these roads, however, share a common characteristic of being "unsafe at any speed", at any time of the day. This is as a result of the low quality of the road components, structures and patterns. For example, road surfaces are undulating and rough. Also, the poor standard of road

infrastructure like guard railings/barriers; pavement marking and signs; illumination levels, traffic signals, horizontal/vertical alignment and sight lines contribute largely to the increasing carnage on Nigerian road network (Odeleye, 2000; Atubi and Onokala, 2004a; Atubi 2008e; Onokala and Atubi, 2007).

This trend persists because authorities in Nigeria have practically relegated to the background regular road safety audit operations. This is an inevitable aspect of modern methods of road administration and management. This paper develops a political economy of road safety audit operations in Nigeria.

## 2. Theoretical Framework

### *2.1. Theory of Risk Homeostasis*

There are two accident policies, one seeks to improve safety by alleviating the consequences of risk behaviour i.e., seat belt installation or wearing, air bags etc aimed at preventing in a moment of carelessness. The second policy seeks to improve safety by punishing imprudent behaviour i.e., speed bumps, fines for violation etc. Both schools of thoughts indicate that safety and lifestyle are dependent and is unlikely to improve unless the amount of risk people are willing to take is reduced (Wilde and Simonet, 1996).

Risk is influenced by microeconomic influence, cultural, social and psychological factors. For instance, there is low per capital death rate in years of high unemployment and low industrial production because the amount and risk taken is reduced. Consequently, the amount of risk that people are willing (in fact, prefer) to take can depend on four utility factors and will be greater to the extent that factors 1 and 4 are higher and factors 2 and 3 are lower;

- The expected benefit of risky behaviour alternatives (i.e., gaining time by speeding, boredom, increasing mobility).
- The expected costs of risky behaviour alternatives (i.e., using speeding tickets, car repairs).
- The expected benefits of safe behaviour alternatives (i.e., insurance discount for accident true periods)
- The expected costs of safe behaviour alternatives (i.e., using an uncomfortable seat belt time loss)

The level of risk at which the net benefits is expected to maximize is called the target level of risk in recognition of the realisation that people do not try to minimize risk (which would be zero at zero mobility, but instead to optimize it). Risk homeostasis theory posit that people at any moment of time compare the amount of risk they perceive with their target level of risk and will adjust their behaviour in an attempt to eliminate any discrepancies between the two. Each action carries a certain level of injury likelihood such that the sum total of all actions taken by people over one year explains the accident rate on the level of risk that people perceive and this is upon their subsequent decision and so forth.

Figure 1 shows circular casualty i.e., a change in the degree of caution displayed in behaviour brings about change in injury rate and vice versa. Just like a thermostat it will make the temperature constant until it is set to a new temperature. Similarly, the target level of risk is seen as the controlling variable in the causation dynamic of the injury rate. It follows that the basic strategy of injury prevention should be to reduce the level of risk that people are willing to accept.

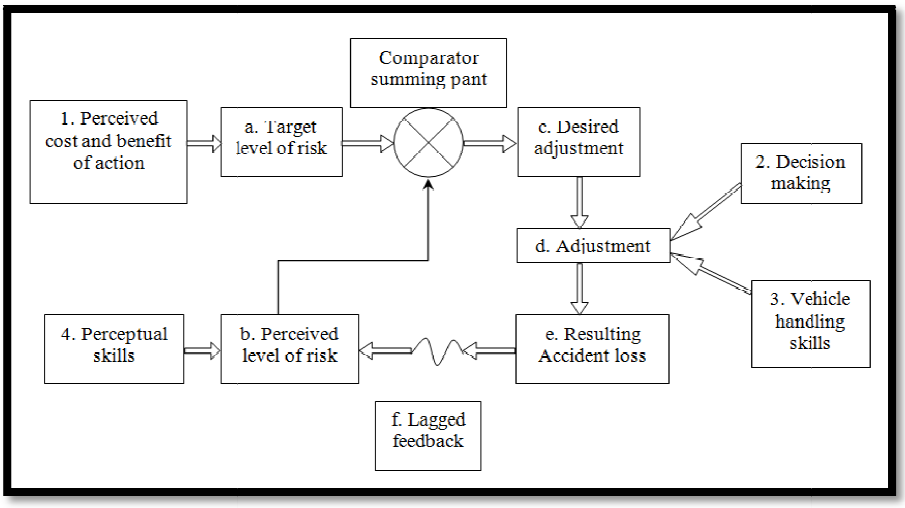


*Figure 1: Homeostatic Mechanism*
*Source: Wilde and Simonet (1996)*

### *2.2. Economic Impact of Road Traffic Accident (RTA)*

Nigeria, Africa's largest country and economy by population and gross domestic products (GDP), loses as much of three percent of her GDP to road crashes (AFDB, 2019). Growing vehicle ownership and rapid urbanisation across the continent are factors which have increased the incidence of road accidents.

World Bank, (2019) has underscored the significance of reducing road traffic deaths and injuries as that would result in substantial long-term income gains for Nigeria and other low- and middle-income countries. Globally, it is estimated that 1.3 million lives are lost to road accidents every year with about 50 million people sustaining injuries. What is even more disturbing is that, because of the deplorable state of their infrastructure, most of these accidents occur in

developing countries, and the cost is colossal in several respects. For instance, accidents impinge on virtually all economic sectors with two to five percent of the cross domestic product lost in many countries. It has also been estimated that globally, $518 billion is lost annually to these accidents that deprive nations of members of their most active labour force (World Bank, 2019).

Apart from the human losses that accident brings, road accidents are not economically sustainable. Studies estimate that road accidents come at a cost equivalent to about 3% of the gross domestic product (GDP) in countries with a high GDP per capital (Elvik, 2000; Wijnen&Stipdonk, 2016). The European commission calculates this cost based on the sum of four components; the human cost, the lost of production, medical costs and administrative costs. Deaths on the road entail a cost of 3,273 euros per person, meaning the cost associated with the loss of life in 2018 would be 82 billion euros (European Commission, 2019; Francisco, Jose & Juan, 2020).

Unlike most countries where the departments in the Transport Ministry calculate the costs of road accident casualties, in a bid to identify the value of prevention, there is no such effort in Nigeria. But even at that, it is obvious that the costs are very high both in economic and human tolls. In the African setting for instance, and particularly in Nigeria, men are generally regarded as bread winners of their families and naturally expected to provide for their needs which explains the frenetic disposition in the pursuit of a means of livelihood by most of them.

It is therefore, not surprising that the Federal Road Safety Corps (FRSC) has not hidden it concern on the negative impact which road accidents have been exerting on the economy. For instance, in the last quarter of 2018, economic loss worth N9.8 billion was lost in 196 traffic crashes recorded across the country (FRSC, 2018). The newly adopted 2030 agenda for sustainable development has set an ambitious target of mitigating the global number of deaths and injuries from road traffic crashes by 2020, positing that without sustained action, road traffic crashes are predicted to become the seventh leading cause of death by 2030 (WHO, 2018; Atubi, 2020b).

*2.3. Political Economy of Road Safety*

Literature directly examining the political economy of road safety, however, relevant literature can be found on the periphery of research on a range of tangentially related issues, such as urban planning, corruption (particularly among police forces), perceptions of risk and data systems. Resolving the challenge of road safety requires marrying system – level, technical approaches – such as the "safe system" approach – with an improved understanding of the political nature of the road and transport sector (Wales and Wild, 2012).

The need for showing coordination and cooperation in order to improve road safety has led to it being closely linked with the overall quality of governance in a given context (Andrews, 2014) paving the way for a broader framing of how we engage with road safety issues.

Countries that do not invest in road safety could miss out on anywhere between 7 and 22% in potential per capital GDP growth over a 24-year period. This requires policy makers to prioritize proven investments in road safety. The cost of in action is more than 1.25 million deaths a year globally, diminished productivity and reduced growth prospects (World Bank, 2018).

The establishment of Federal Road Safety Commission (FRSC) by Decree No. 45 of 1988 as amended by decree 35 of 1992 later cited as FRSC act (CAP 141) laws of the Federation of Nigeria (LFR) 1990 and re-enacted as FRSC (establishment) Act 2007 was in line with the principles of good governance.

Atubi (2009b) is of the opinion that there are several problems affecting the ability to enforce some of the rules that help mitigate road accidents. These challenges have social, economic, political and environmental implications thus making it difficult to achieve minimum standard of road safety in Nigeria.

Many authors are of the view that in order to be effective in traffic law enforcement, policing activities should be structured so as to pose a meaningful and immediate deterrence threat to would be traffic offender. According to Rottengatter (1990), one of the fundamental problems hindering this process is the inability of the relevant authorities to maintain necessary high levels of enforcement.

The causes of accidents have been listed to include speeding (4-5 percent), driving under the influence of alcohol and other psychoactive substances, non-use of motorcycle helmets, seat belts and child restraints, distracted driving, unsafe road infrastructure, unsafe vehicles, inadequate post-crash care, and inadequate law enforcement of traffic laws (WHO 2018; Okogba, 2018; Atubi, 2007b, Atubi and Onokala, 2007c; Atubi and Onokala, 2009, Atubi and Ugbomeh, 2009).

Virtually all other causes are prevalent in Nigeria, especially, unsafe infrastructure. Most of the road networks are in disrepair and can best be described as roads to hell where human lives are wasted daily. Given the humongous lives that are wasted on our roads across the country with the attendant socio-economic losses, all stakeholders must join forces to make Nigeria roads safe (Atubi and Gbadamosi, 2015).

We need new traffic safety strategies. These requires a paradigm shift, a change in the ways that risks are measured and potential safety strategies are evaluated/audited (Hughes, 2017; May, Trinler and Warn, 2011; Litman, 2013). Reducing road traffic accidents is a global challenge and succeeding will require the involvement of multiple stakeholders at the global, national and community levels (Atubi, 2014; 2015b, 2017 and 2020b)

*2.4. Strategies for Investigating and Auditing Road Traffic Accident Operations*

Road traffic accident rates and fatality rates in the industrialized countries have tended to exhibit pronounced decreasing time trends. Some scholars like Oppe (1991) interpret the downward trend as evidence of experimental learning, while others like Peltzman (1975), Harvey and Durbin (1986) and Broughton (1999) treat it as a nuisance parameter that happens to be essential for model fitting.

Motor vehicle traffic injuries (MVTI) is an important public problem in both developed (Baker et al, 1992; Graham, 1993) and developing countries (Smith and Barss, 1991; Berger and Mohan, 1996). When designing a relevant MVTI control program, the first two questions that should be asked are 'who' are at the highest risk, and 'where' are MVTI's most likely to occur. Regional MVTI mortality data are the statistics commonly used by health authorities to answer these questions (National committee for injury prevention and control, 1989; Bjaras, 1993).

Regional MVTI mortality rates calculated according to the place – or – occurrence might have different meaning from those calculated according to the place – to – residence: the former reflects area – specific environmental risk factors for MVTI, while the latter reflects characteristics of the residents that render them at increased risk for MVTI (Cummings et al, 1995). The two calculation have different implications for prevention programmes. While many scholars have pointed out that the problem of using place – of – residence in calculating regional MVTI mortality rates (Bangdiwala et al, 1985, Robertson, 1992; Cummings et al, 1995; Gooder and Charny, 2006), only two studies provided empirical data to illustrate the implication (Baker et al 1987; Gooder and Charny, 2006).

However, experience from other countries show that small roundabout was an effective speed reducing measure (Simon, 1991). He also concluded that small round about increased safety. Minnen (1992) reported that new round about reduce the total number of accidents by 50% and the number of casualties by 80%. He also showed that small round about normally have the lowest accident rate of all types of, one – level junctions, but he found a tendency towards problems for two – wheeled vehicles.

While traffic related injuries take a very large toil in almost every country around the world particularly in developing countries or less industrialized countries, significant progress towards prevention and control has been limited to high income and/or highly industrialized countries (Soderland and Zwi, 2001; Zaza et al, 2003). Much of the progress in developed countries is attributable to the combination of interventions, strategies and policies that have been developed mainly in these developed countries settings over the past few decades. Such factors as high health budgets, adequate number of researchers, high levels of health and safety awareness, and near universal literacy, have also catalyzed this progress (Rivara et al, 2000; Barss et al, 2001; Forjuoh, 2003). Reducing road traffic accident is truly a global challenge and succeeding will require the involvement of multiple stakeholders at the global, national and community levels (Atubi, 2014).

In the early 1970's, a survey of road traffic accident information systems in use in developing countries (Jacobs et al, 1975) indicated that only 15 percent of the countries had adequate accident report forms and none had computer analyses facilities. Therefore, to help countries improve their accident investigation and research capability, the overseas unit developed its Micro Computer Accident Analysis Package (MAAP), initially in collaboration with the traffic police in Egypt, (Hills and Elliott, 1986). However, in 2004, it is now in use in over twelve countries. It is the nationally adopted system for Botswana and Papua New Guinea, and regionally adopted in most of the other countries; major cities in which MAAP is established including Bandung, Beijing, Karachi and Islamabad. The languages that MAAP operates in include Arabic, Chinese, French, English and Spanish (Jacobs et al, 2000).

Studies of the relationship between geometric design and road accidents in Kenya and Jamaica (Jacobs, 1976) and research in Chile and India indicated, not unexpectedly, that junctions per kilometer was the most significant factor related to accidents, followed by horizontal and vertical curvature.

*2.5. Policy Interventions Programme on Accident Prevention in Nigeria*

With a daily average of 76 fatalities and 104 causalities and 14.2 deaths per 100,000 population for the year 2004 from road traffic accident (Atubi, 2013). Nigeria seems to have increased its fatality rate per accident even though the absolute number of the accident seems to have decreased. The establishment of the Federal Road Safety Commission to evolve a scientific and cultural relevant programme to meet the objective of its role as enunciated in degree No. 45, 1988 is another in the efforts of government to increase safety measures in Nigeria. One factor that has worsened this accident rate is the use of poorly maintained vehicle occasioned by the structural adjustment policy of 1989. This is further worsened by lack of genuine spare parts, and the flooding of the market by fake spare parts. These further put the life of the drivers and passengers at greater risk. Similarly, the cost of tyres which has been put beyond the reach of the average car owners has led a lot of people to their untimely death. Inability to change these bad tyres lead to blowouts. This situation therefore has turned many a vehicle to "mobile coffins". However, some of the interventions for Nigeria include;

2.5.1. Seat Belts

No matter how you will drive there is always a chance that you will be involved in an accident. You cannot predict when it may happen. From statistical analysis of road traffic accidents in Nigeria since independence the chance that one will be injured in an accident in his life time is 1:3; that he may be killed in an accident is 1:9. The best protection inside the vehicle is the use of seat belts (Federal Road Safety Commission Highway Code, 1997).Similarly, the use of seat belts in Nigeria was optional, hence many vehicles are not fitted with seat belts. In those that have them, they are not being utilized by drivers and passengers alike. But currently, the Federal Road Safety Commission has made the use of seat belts compulsory to all motorists with effect from July 1st 2005 (The Guardian Newspaper, July 2nd, 2005, p. 14). In most developed nations especially Britain, a lot of money has been sunk into the implementation of the use of seat belts. The seat belt is an example of an active intervention for occupants because it requires some action on the part of the users. Its effectiveness in preventing injury and death in motor vehicle collisions has been well established by many earlier research studies (Final rule, 1984; Mueller et al, 1988; Rivera et al, 2000).

2.5.2. Motorcycle Helmets

Safety helmet worn in the correct way and properly fastened in the most effective way could increase your chances of surviving an accident (Federal Road Safety Commission Highway Code, 1997). In the time past, various laws were enacted by Federal, State and Local governments to curb the excesses of the riders. These include the National Road Traffic Regulation of 2004 and FRSC Establishment Act 2007 to mention but a few. The acquisition of motorcycle helmets is well within the budgets of the people who afford motorcycles in this country. In addition, promulgating helmet laws has been associated with significant decrease in mortality and injuries sustained from motorcycle crashes (Fasakin, 2000; Fasakin, 2002). When a motorcycle is acquired, purchase of an approved helmet should be encouraged or even mandatory in low-income countries (LICs) given the feasibility and potential sustainability of this intervention.

Just like seat belts have proven effective in motor vehicle crash related injury reduction, motorcycle helmets have proved effective in motorcycle crash related injury reduction making motorcycle helmet laws a strategy with proven effectiveness. Infact, recent research findings in setting other than the United States corroborate the evidence for the effectiveness of mandatory motorcycle helmet laws (Tsai et al, 2000; Conrad et al, 2001; Atubi, 2006).

2.5.3. Speed Limits

Drivers often think that the faster they drive, the more they impress themselves and others. They fail to remember that anybody's tyre can burst that accidents at high speed are more disastrous than accidents at low speed; that the vehicle is a machine and can fail at any time. At 100kmph, your vehicle moves at 28 metres per second, just imagine where you could be in only one second if you veer off the road which is usually less than 12 metres wide. (Federal Road Safety Commission Highway Code, 1997; Atubi, 2020b). The Federal Road Safety Commission also imposed speed limit for all categories of vehicles i.e., 100kmph maximum speed for all private cars, 90kmph for commercial vehicles and 60kmph for trucks. But common sense often dictates lower speed limits.Speeding on highways is a major cause of traffic crashes. The effect of speed on causing traffic related crashes, injuries and deaths has been documented in many settings (Farmer et al, 1999; Posada et al, 2000). For example, the 1995 repeal of the United States national maximum speed limit, allowing states to raise interstate speed limits, resulted in a 15% increase in fertilities in 24 states that raised speed limits. In Adelaide, Australia the risk of severe crash involvement was found to increase as vehicles speed increased (Moore et al, 1995). Infact, the over 20% reduction in traffic crashes and deaths in Brazil has been partly attributed to speed limits which have been posted on many roads since 1998 (Polidefigueiredo 2001).

2.5.4. Public Education Targeting Motorists

Your safety depends on what you see and how you react. If you need spectacles to meet the official eye sight standard, wear them. It is an offence to drive with uncorrected defective vision. For example, a Nigerian study found a third of taxi drivers to have poor vision (Alakija, 2003). Although the findings from a 1999 study revealed the ineffectiveness of driver education for young drivers (Vernick et al, 2001), there is some evidence that general public education along with some behavioural modification that targets motorists may have some impact on road safety. One area is education of motorists on posted traffic signs. A recent study in three countries i.e., United States, Sweden and United Kingdom, showed that comprehension of 28 posted traffic signs for drivers were related to years of driving experience (Al-madani, 2000)

2.5.5. Traffic Control by Signs

A thorough knowledge of traffic signs, signals, road and markings together with signals by authorized traffic officers are to ensure a smooth and safe traffic flows. You must know them and be able to recognize them immediately. In the case of regulatory signs such as stop at intersection, stop police, stop highway survey, no left turn, no right turn, No "U" turn, No entry for lorries, no waiting, etc, you must obey them without hesitation.

The decade of action for road safety (2011-2020) was proclaimed by UN General Assembly to accelerate coordinated international action aimed at reducing the number of deaths due to road traffic injuries. Within this context, the UN road safety collaboration (UNRSC) developed a global plan of action as a broad framework of activities which were grouped into 5 pillars, namely:

- Pillar one - Road safety management
- Pillar Two - Safer road and mobility
- Pillar Three - Safer vehicles
- Pillar Four - Safer road users
- Pillar Five - Post crash response

The Federal Road Safety Corps as the lead agency in road safety management and administration in Nigeria aligns its operational activities and strategic goals towards achieving these goals in Nigeria by keying into all the 5 pillars by setting target into reduction of number of road crashes and fatalities.

Despite the efforts made in tackling the problem of lack of adequate safety on Nigeria's roads, the problem still persists. The following challenges are noted:

- Need for modern equipments to practically tackle the issues
- Failure to sanction road traffic violators appropriately
- Insufficient funding to execute more projects and programmes especially those associated with the decade of action

- Inadequate number of trained personnel to tackle the issues at both the policy development and implementation level.

**3. Conclusion**

It is apparent that road accident is a complex phenomenon not only in terms of its diverse causes but also in the nature of its effects on lives and property. Apart from the humanitarian aspects of road safety, the injuries and fatalities, which occur as a result of road accidents have serious social, political and economic consequences which has made prospective travellers to develop phobia for spatial interaction. This under normal circumstances would have prevented and nipped in the bud all business initiatives that would have taken place at location different from the locations of business tycoons given the fear of the unknown in relation to likelihood of being involved in traffic accidents.

Literature directly examining the political economy of road safety is sparse. However, relevant literature can be found on the periphery of research on a range of tangentially related issues, such as urban planning, corruption (particularly among police forces, road safety corps) and perceptions of risk. The need for strong coordination and cooperation in order to improve road safety has led to it being closely linked with the overall quality of governance in a given context.

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