Road Traffic Accidents, Causes, Trends and Preventive Measures: The Case of City of Harare (2012- 2018)

Dr David Foya

National University of Science and Technology, Department of Business Management, P.O. Box AC 939, Ascot, Bulawayo, Zimbabwe

***Abstract*: - The topic of this dissertation was to establish the major causes of accidents in Zimbabwe and find out way forward. The research objectives included to establish the leading causes of road traffic accidents in the country. To examine approaches that can be adopted to reduce road accident sin Zimbabwe. Some of the research questions included what are the leading causes of accidents? What roles do different stakeholders play in reducing road traffic accidents in Zimbabwe. This study is important to various stakeholders in Zimbabwe which include government, Traffic safety Council of Zimbabwe, all road users. The researcher used mixed approaches in dealing with this challenge. Furthermore, purposive sampling was used in sampling respondents as well as random sampling for drivers. Data was collected using questionnaires and interviews. The major findings from this study shows the most accident s are caused by human error which include unlicensed driving, texting, alcohol consumption and driving while driving. In addition, failure to observe road regulations have been another major worry. The second major cause was the state of the vehicle. Most of the vehicles are not mechanically safe to be in the roads. The conclusions derived from the study are that all these factors have caused numerous deaths in the roads and it has become a major cost to insurance companies. State of the various roads is a major challenge to motorists and some roads are full of potholes which makes it dangers for motorists to drive through. In view of this, the study recommends that TSCZ besides awareness campaigns should take all drivers especially those of PSV through defensive course at the governments cost . This will give them appreciation of how to sustain road traffic safety for the public. There is need for more VID and police presence in major highways to check vehicles roadworthiness and state of drivers at any given point. Finally, government to work with all the stakeholders in the area of road traffic safety in order to come up with a lasting solution to road traffic accidents.**

***Key words:* Road traffic accidents, Traffic safety, policy, traffic risk management, stakeholder participation.**

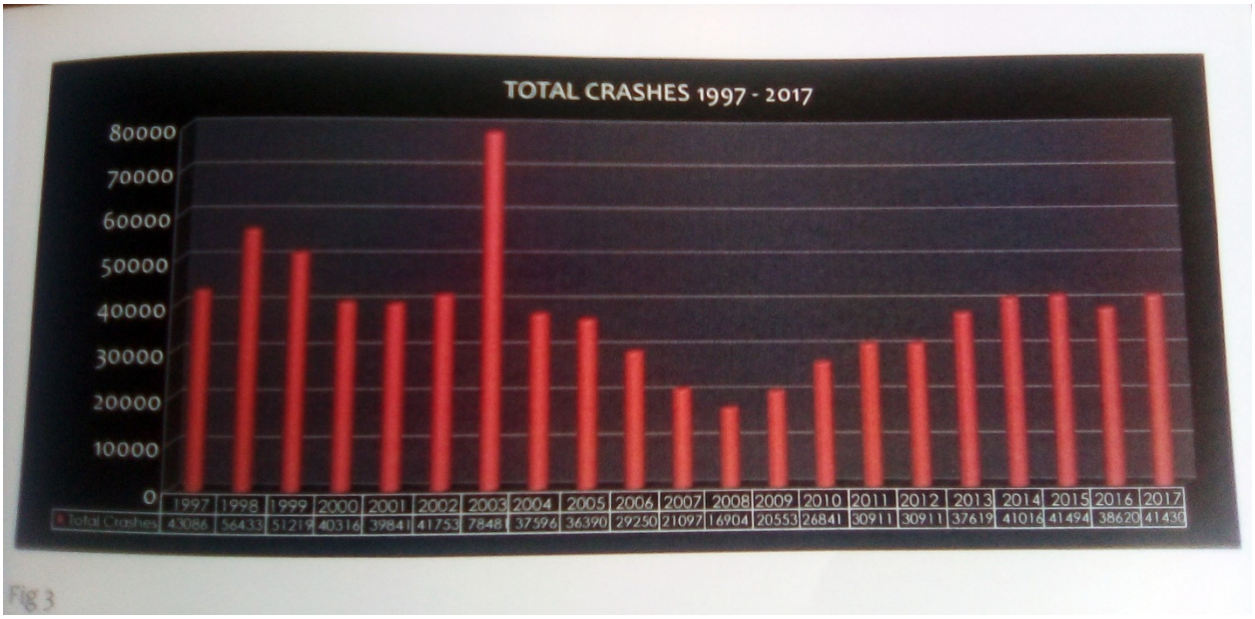
Key terms and acronyms

PSV	**Public Service Vehicle**
PVT	**Private Use Vehicle**
RMT Controller	**Road Motor Transportation Act Controller**
Road carnage	**Road accidents**
RTA	**Road Traffic Accidents**
TSCZ	**Traffic Safety Board of Zimbabwe**
VID	**Vehicle Inspection Department**
WHO	**World Health Organisation**
ZINARA	**Zimbabwe National Road Authority**
ZRP	**Zimbabwe Republic Police**

I. BACKGROUND OF STUDY

Brutal injuries and fatalities in road traffic accidents (RTA) are a public health crisis with consequences like lasting disabilities that are the same as any other public health crisis like cancer, tuberculosis and HIV/AIDS, however they are excluded in the Millennium Development Goals (MDGs). Road injuries keep on increasing in most countries, approximately 1.2 million people die in road accidents every year, 65% of these are pedestrians and 35% of these pedestrian deaths are children (UNECA *et al*, 2011). Low and middle income countries make up 85% of all the road traffic deaths (Nantulya, 2011). The main cause of death through injuryis road traffic injuries (UNECA *et al,* 2011). Disability as a result of road traffic injuries make up around 30-50million people annually. According to Baraj (2008), the traumas concerned make up most costs, around 1 to 3 % of the GDP in a lot of countries which means that road injuries lead to too much expenditure. From the risk assessment that was done for Zimbabwe by THET ICS (2013) it emerged that fatal RTAs are the biggest current threat of all the risks. These threats are shown in table 1.1

Fig1.1: Total road crashes in Zimbabwe



Source: TSCZ (2018)

As shown from the diagram total crashes have been increasing each year from 2012 up to 2015, from there has been a high fluctuation of the total crashes up to 2017. The number of crashes are threat to the health system and the economy of Zimbabwe.

As reported by the Jacobs (2000), at least five people die daily as a result of road traffic accidents. Also in the statistics that were provided by TSCZ (2017) in 2016 a total of 1 838 deaths were recorded, whilst 10 489 people were injured out of 42 430 crashes that happened in 2017, which translate to 153 deaths every month. The accidents show a 10% increase from the 2016.A lot of accidents were down to unlicensed drivers who constituted 475 accidents. The bleak statistics also show that majority of the unlicensed drivers who got involved in the accidents were driving public service vehicles which require that they undergo defensive driving lessons. According to TSCZ (2017) road accidents constitute about 3% of the GDP annually, which translate to US$406, million annually. According to the TSCZ the main blame was given to human error and not bad roads. (Yukushima, 2017)

The road accidents might be attributed to a myriad of factors in Zimbabwe, chief among them is corruption at VID, where driving licences are obtained, this result in drivers who are not qualified to drive, driving cars. For instance, the it was reported by the daily news on 18 March 2019 that the Anti-Corruption trust of Southern Africa (ACT-SA) called for an investigation on Kwekwe VID officials who were alleged to be receiving US$100 in exchange for a class four driver's licence. Such reports if found to be true it derails the fight against accidents in Zimbabwe. Similarly, in all other VID depots the issuance of driving licences has been reported to be marred with corrupt activities. Also the Traffic Safety council of Zimbabwe seem to lack the tooth to bite despite it being an enforcer, when there are unbecoming behaviours. The VID on the other hand is allows vehicles which are not road worthy on the road. The Zimbabwean roads themselves have exceeded their life span, this has resulted in our roads being death traps. In recent years in Zimbabwe road accidents have been attributed to speeding, overtaking error, not giving way, following too close, reversing error, negligent pedestrian/ cyclists and fatigue (TSCZ, 2018).

However, in attempts to fight accidents the ministry of transport and infrastructure development through the TSCZ, ZRP, churches and private companies have been embarking on nationwide campaigns against accidents. The TSCZ have also updated the highway code so that accidents can be reduced. Other strategies include defensive driving, mass media campaigns, exhibitions and trade fairs. Despite all these efforts the graph for total accident crashes have been showing an upward trend since 2009. Fencing of roads to prevent and reduce road accidents associated with livestock. However, the figures seem to have levelled in 2014 but are not decreasing. From 2016 to 2017 road traffic collisions have been increasing by 10 % with fatalities also increasing by 8%. The authorities seem to be clueless when it comes to accident reduction in Zimbabwe. In 2017 speeding constituted 28% of road accidents and this was the most cause of accidents, this is followed by misjudgement. 18%. A lot of road accidents normally occurs between 1801 and 0001 hours.(Duggard,2017).

The roads in Zimbabwe are progressively becoming death traps because death tolls from road traffic accidents are increasingly rising in the first quarter of 2018.According to the TSCZ the road accidents by January 2018 we17,6% t

higher than the same period in 2017. In terms of the injuries they increased by 56% from the 2017 figures. Whereas the amount of crashes increased by 25,6% in February from an earlier month, the people who were injured and killed in accidents dropped by 10% and 2% respectively. These statistics are not going in the right direction as far as the 2010-2020 decade of action is concerned. (Harbour 1997)

During the UN General Assembly, the delegates met and agreed on 2010-2020 decade of action towards road safety. The decade of action was anchored on five pillars the first pillar concentrated on road safety management, this pillar concentrates on the necessity to support established capacity to promote national road safety efforts. The second pillar is about safer road mobility, this pillar emphasises about the necessity to enhance road safety for the good of every road user. The third focuses on safer vehicles, this focuses on the necessity for enhanced vehicle safety through encouraging the harmonisation of appropriate global mechanisms and standards. The fourth pillar is about safer road users meaning This pillar concentrate on establishing comprehensive programmes to enhance road user behaviour. The fifth pillar is about post-crash response, it encourages the enhancement of health and other systems to give suitable emergency treatment and long term recuperation for crash victims.

Statement of problem

The increase in road accidents and deaths are of great concern to the health sector, Ministry of Transport, Ministry of Finance and Economic Development, the citizens themselves and other stakeholders at large. The Zimbabwean roads have been death traps, since 2010 when Zimbabwe participated on the UN decade of action, there has been a high fluctuation of crashes and death on Zimbabwean roads, the authorities which include the TSCZ, the police, the VID, including churches embarked on several strategies in a bid to deal with road accidents. The TSCZ together with the churches embarked on road show campaigns to try to reduce accidents rate. By December 2018, the Ministry of Transport and infrastructure development introduced the electronic method of driving exams; this was done to deal with corruption. Road fencing was put by the TSCZ in Matabeleland so as to reduce livestock related accidents. However, despite all these efforts rate of accident is not showing a downward slope, the rate is still high. This continues to give worries to the Ministry of transport, Health. Since these deaths are avoidable deaths. This study thus will give solution to the challenges faced in mitigating accidents in Zimbabwe.

Research questions

- How effective are the strategies that are being used to reduce road traffic clashes?
- What are the challenges being faced by authorities in reducing the rate of accidents in Zimbabwe?
- To what extend the UN's 5 pillars for decade of action implemented?
- What is the impact does the UN's decade of action have on their reduction of road accidents in Zimbabwe?

II. LITERATURE REVIEW

2.1 Major concepts defined

Road Traffic Safety refers to methods and measures used for reducing the risk of a person using the given road network from being killed or seriously being injured. Road users are pedestrians' motorists, cyclists, motor cyclists and passengers carried in any mode of vehicles which include buses and private vehicles.

2.2Causes of road accidents

Road traffic accidents (RTAs) have emerged as an important public health issue which needs to be tackled by a multi-disciplinary approach. The trend in RTA injuries and death is becoming alarming in Southern Africa and more so in Zimbabwe. According to Karanja (2017), the number of fatal and disabling road accident happening is increasing day by day and is a real public health challenge for all the concerned agencies to prevent it. The approach to implement the rules and regulations available to prevent road accidents is often ineffective and half-hearted. In this regard, Coetzee (2016), argues that there is serious need for awareness creation, strict implementation of traffic rules, and scientific engineering measures are the need of the hour to prevent this public health catastrophe. Further to this there is urge need to create awareness among the health professionals about the various modalities available to prevent road accidents and also to inculcate a sense of responsibility toward spreading the message of road safety as a good citizen of our country.

2.3.1Contributing Factors

The road accidents are happening most often due to the reckless and speedy driving of the vehicles, not obeying or following traffic rules, the attitudes of the "right of the mighty" bigger vehicles toward the smaller vehicles, overburdened or overcapacity hauling of public and transport vehicles, poor maintenance of the vehicles, drunk and driving, driver fatigue, and above all the appalling condition of the already chocked roads with every inch encroached by unauthorized persons and properties

2.3.2 Human Factors in RTA

Human factor contribute significantly to increasing number of road accidents in India. Most drivers continue to be acting like maniacs in a tearing hurry and error in judgment often leads to major accidents. Reckless driving, over speeding, decline to follow traffic rules, and drunken driving are main reasons for road accidents. Drunken driving is one of the major causes of road accidents. The statistics also show that most of the road accidents in the highways are due to drunken driving only. According to Coetzee (2016) globally, close to 480,000 deaths and slightly over 20 million of people get injured by drunken driving every year. He goes further to argue that in most high-income countries such as South Africa, Australia and

European countries, about 20% of fatally injured drivers have excess alcohol in their blood, that is, blood alcohol concentration (BAC) in excess of the legal limit. On other hand, Singh (2017), argues that in contrast, studies in low- and middle-income countries like India have shown that between 33% and 69% of fatally injured drivers and between 8% and 29% of non-fatally injured drivers had consumed alcohol before their crash.(Harbour 1997)

In this vein, Moddi (2016b) goes further to say, in "India drunken driving is customary in commercial vehicle drivers. Private car owners and youngsters are also major players in the game. Small bars along the Indian highways are of prime concern to control drunken driving. India has laws to check the drunken driving but its effective implementation is still to be worked upon." However, In Bangalore, 28% of crashes involving males over 15 years were attributable to alcohol. Drunken driving has been responsible for 70% of road fatalities in Mumbai and Delhi.

2.3.3 Driver Fatigue

Kayembe (2017) argues that driver fatigue is a very dangerous condition created when a person is suffering symptoms of fatigue while driving, often resulting from the hypnotic effect especially during night time driving either falling asleep at the wheel or so exhausted to make serious- and fatal-driving errors. He maintains that this is particularly truck drivers who have to cross countries and deliver goods. He gives examples of South African drivers who drive all the way from South Africa crossing Zimbabwe, Zambia sometimes Namibia and Angola to DRC and they don't have assistant drivers. The increasing number of traffic accidents due to a diminished driver's vigilance level has become a serious problem for society. He goes further to maintain that 20% of all the traffic accidents and up to one-quarter of fatal and serious accidents are due to drivers with a diminished vigilance level. Furthermore, accidents related to driver's hypo-vigilance are more serious than other types of accidents, since sleepy drivers often do not take correct action prior to a collision.

As a result of the carnage on the roads and their serious Public Health Issue happening globally, the WHO in mid- 2004 came out with a theme of "Road Safety is No Accidents". The idea of this theme was to seriously highlight the urgency to tackle the issue on an urgent priority basis. Mac Mahon and Ward (2005) argued strongly that it was high time for us to look into the various issues of the RTA in this perspective so that corrective and preventive measures can be undertaken in an urgent manner so that further damages can be lessened.

World's first RTA is supposed to have occurred in 1896. Everybody concerned at that time reported to have said, "this should never happen again." But more than a century later, 1.2 million people were killed on roads every year and up to 50 million more are injured. For every one killed, injured, or disabled by RTA, there are countless others deeply affected by the cost of prolonged medical care, loss of a family bread winner, or the extra funds needed to care for the people with disabilities. RTA survivors, their families, friends, and other care givers often suffer adverse social, physical, and psychological effects. If the current trends continue, the number of people killed and injured on the world's roads will rise by more than 60% by 2020. The health dimension come in through assisting those who are involved in accidents and the cost in budgetary allocation to Ministries of Health in various countries. (Mddi, 2016)

2.3.4 Environment

Road Traffic Accidents are caused by numerous causes and the nature of roads and general road environment is very critical for both vehicles and human beings. One major factor in reducing accidents is the continuous improvement of all major highways as well as putting visible signage in right places so as to warn the motorists and other road users. Nyamukondiwa (2018) notes that narrow roads, have a great tendency to expose vehicles to side swipe and in the event that a vehicle has broken down, it thus cannot be pulled off the road thereby it blocks such roads leading to further accidents. According to Traffic Safety Board of Zimbabwe (2017), Wide roads greatly reduce danger of accidents to both the people and vehicles. Tarmac reflectors as on Bulawayo to Harare highway demarcate lanes markings clearly thereby making night driving very easy. In this regard, ZINARA is seriously playing its part in road design of all the state roads. In addition, all local town and city councils have great challenges with numerous potholes which make road menace a deadly threat to human and vehicle traffic.

2.3.5 Old age and road safety

Gordhan (2015) and Kayembe (2017) do concur that driving is a very complex task that requires individuals to be fully alert using all the senses in order to work effectively. The driver has to be very accurate in his judgement so that he relates well to the environment. However, with age the driver gets more experienced but with age related declines his senses, health conditions and medication does limit and reduce the impact of such an experience thereby affecting the driving skills. According to US Library of Medicine (2009), the common mistakes made by drivers include failing to yield the right of way, failing to stay in the lane, forgetting to forget to stop at a stop sign, speeding or driving too slowly and misjudging the time distance needed to turn in front of oncoming traffic. In the same vein, Jorgensen and Abane (1999) are of the strong view that the older driver is at greater risk particularly after the age of seventy-five. The crashes are usually related to intersections, side swiping and blind spots. In view of this, the older drivers need to take charge of their health by annual eye checks, ear checks, as well as the need of talking to doctors about effects of drugs they may be taking on their driving. Kamau (2016b) argues that the above assertion does not in Africa because of poverty levels which are too high. He goes further than even for serious illnesses; people don't have money to consult doctors at all.

Modi (2016) is of the strong view it is important for drivers to know their limitations and adjust accordingly. It has been further argued that these people advanced in age may prefer to drive during the day if visibility is impaired. If volumes of traffic and fast moving vehicles are a bother, then it is of paramount importance to use or establish safe routes. In addition, Coetzee (2016) is of the view that I f bad weather such as rain, snow or floods, it is recommended the such people should use alternative transport for their safety as well as that if other road users. It has also been recommended by Mlambo (2018), that it is necessary that aged individuals or physically challenged individuals use automatic vehicles with power steering and brakes which suits them well as there is little effort that is put into driving unlike the manual type of vehicles.

The infrastructure on the highways has to improve in line with such safety challenges. The changes thus should include advanced warnings of road curves, intersections, and so on so as to make driving easy for senior citizens. In the same vein, Coetzee (2016) maintains that the ageing of drivers is a reality that every country has to live with and as such, it is important to be proactive and accommodate the issue so as to sustain traffic safety for the elderly and fir the rest of all road users.

2.4 Legal framework governing Road traffic [in Zimbabwe]

There several pieces of legislation that governs the use of roads especially by motorists. In this regard, the Government of Zimbabwe has put in place legislations in order to regulate and sustain road safety. Primarily, Ministry of Roads and Transport has the Road Traffic Act which outlines the restrictions or conditions that relate to the use of roads by Traffic.The Road Traffic Act does empower certain people to carry out certain duties and those duties of the police are also outlined in this act. Thus the RMT Act is part of the road traffic safety governing document. Further to this there are many statutory instruments which do guide operations and these include:

- RMT (PSV Regulations) SI 1998
- Road Traffic (Driving School) regulations SI 1985
- Road Traffic (Licensing of Driver) SI 1997
- Road Traffic (PSV Drivers) Regulations SI 2006
- Road Traffic (Safety Belts) Regulations SI 1987
- Vehicle registration and Licensing Act 1996

Since these various Statutory Instruments or Acts do empower certain persons to execute certain duties in the road traffic safety, departments have been designated in the Ministry of Transport and Infrastructural Development to implement these decisions. According to Mlambo (2018), The Road Traffic Safety Act empowers the vehicle inspectors to carry out inspection and certify them road worthy by issuance of certificate of fitness. In addition, VID driving inspectors are empowered to tests applicants for competence on driving. Thus Section 79 and 80 of the Act does refer to the appointment of such officers. The Act further stipulates all official activities which includes fees to be paid for such services. Finally traffic police officers as well as medical officers have their powers also outlined.

There are challenges that are faced in the interpretation of these various statutory Instruments. Sometimes stakeholders such as ZRP and VID or ZINARA interpret the laws differently thereby bringing discord in the smooth operations of traffic safety. According to Nyamukondiwa (2018) there is serious need to expose ZRP Traffic section officers to all road traffic safety regulations so that implementation does not cause conflict. At VID, impounded vehicles are sent to the police for fines. It therefore follows that the police and ZINARA can send vehicles for axle weighing from their road blocks, but they are reluctant to do it. Axle weighing is done by VID for ZINARA. Gordhan (2015) is of the strong view that the police at road blocks sometimes do not know how to handle certain traffic matters. As a matter of fact, sometimes police appear not to know the powers they have. In addition, ZINARA officials seem concerned with collecting toll fees only and take comfort in sending vehicles to VID unnecessarily.

According to Kamau (2016a), another area of confusion is the driver licensing area whereby the officers are not versatile with the classes of drivers and vehicle with the classes of drivers and vehicles to be driven. As a result of this, there is a lot of confusion that leads the society to lose confidence in the road traffic safety enforcement system.

2.5 impact of Road Traffic Accidents

According to Hagan et al (2001), worldwide it is estimated that over 3700 people are killed every day and it is the second leading cause of death among people aged 5−29 years. Over and above this, RTA injures or disables between 20 million and 50 million people a year worldwide. In this vein, Gaudy et al (2000) add that RTA ranks as the 11th leading cause of death and accounts for 2.1% of all deaths globally. This shows that RTA are a serious matter that needs attention from all global leaders to come together so as to find practical solutions in order to reduce deaths around the globe. It has been argued by Mathews (2018) that over 90% of all road traffic accidents deaths occur in the low income and middle income countries. This means that Zimbabwe and South Africa rank top in this as part of low and middle income countries respectively. In addition, more than half of all road traffic accidents deaths among young adults between 15 and 44 years of age and 73% of all the RTA fatalities are males. This therefore according to Sichel (1999), accidents affect those that are productive and have important skills. This further implies that the most vulnerable road users are pedestrians, cyclists, two-wheeler riders, and passengers on public transport.

Edwards (2017) strongly believes that RTA injuries are becoming the third largest contributor to the global burden of diseases by 2020.RTA deaths are predicted to increase by

83% in developing countries and to decrease by 27% in the developed countries. This is attributed to measures that are being adopted by the governments of European Union and the level of awareness that are being developed by these governments through curricula and public media as well as stringent regulations that have been adopted and these have gone a long way to resolve these challenges of road traffic accidents.

Coetzee (2019b) goes further to say it is estimated that every year RTA costs billions of Rands are nationally in South Africa. More importantly road traffic accidents injuries put significant strain on health care budgets at provincial and national level. The net implications are that road traffic accidents are costly to the governments and therefore affect all sectors of the economy. It affects insurance business in that they have to do payment to damages that have been caused as a result of these accidents. In addition, there is another added costs to health and collateral damage that could have been done through loss.

2.6 Preventive Measures for RTA

Road deaths and injuries are preventable. A wide range of effective road safety interventions exist and a scientific system approach to road safety is essential to tackle the problem. This approach should address the traffic system as a whole and look into interactions between vehicle, road users, and road infrastructure to identify solution.

2.6.1 Vehicles

There an urgent need to ensure that vehicles must be well maintained vehicles with good breaks, lighting, tyres etc. Edwards (2017) argues that this will go a long way in reducing accidents in these roads thereby saving lives and reduce insurance payments due to recklessness on the part of drivers.

In this vein, US Library of Congress (2009) strongly believes that older vehicles and highly polluting vehicles should be phased out of the roads for good. This proposal is also supported by Yukoshima (2017) who is of the strong view that older vehicles should be phased out of the roads. However, this proposal does not go well with African governments which have no industry of their own which manufacture vehicles for their markets. It is necessary that all vehicles should be provided with seat belts and other necessary safety provisions (like airbags). In addition, it should be mandatory to wear seatbelts and the fine should be huge as a deterrent.

2.6.2 Condition of roads

It is very critical that roads should be well maintained with frequent relaying of road surfaces and markings of road safety signs. This goes a long way to reduce accidents in these roads and provide safety to the public. Coetzee (2017) goes further to argue that there is serious need to provide proper footpaths for pedestrians and pedestrian crossings at intersections. He maintains that road network planning should encompass this kind of planning. This will greatly reduce accidents and save lives. There is need to retrain drivers and create awareness on drivers so that they know use of separate lanes for slow-moving and fast-moving vehicles. Gordhan (2015) maintains that in most roads including South Africa have this provision but drivers tend to ignore it thereby rendering the whole idea useless. In this vein, roads and junctions should be wide and well lit so that visibility is good.

2.6.3 Human factor

There is need for change of attitudes on the part of drivers because drivers can significantly contribute to reducing the accidents thereby saving lives. More importantly, Gordhan (2015) strongly argues that issuing of the driving license should be strictly based on the minimum proficiency acquired by the learners from designated driving schools. In this vein, Mlambo (2018) says in Zimbabwe there is multiplicity of schools of driving and most of these are owned by VID instructors. Therefore, learner drivers are issued with licenses when they haven't learnt much. They get these licenses after parting with huge sums of money. It has been suggested that minimum qualifications should be fixed for different categories of drivers in particular those who drive PSV which carry out passengers on a large scale. It is also necessary that all drivers should be properly trained and should possess a valid driving license. There is need to educate the drivers and traveling public about traffic rules. This will assist in improving literacy on road regulations because everyone uses roads and one's mistake is costly not only to himself but to many other people and usually innocent people suffer from these accidents. (Kayembe,2017)

The traffic police need to professionally carry out periodic medical check-up especially vision and hearing for the drivers. Training on first aid should be compulsory along with heath education and traffic education for the general public to prevent accidents. It should be avoided to indiscriminate honk, except as a means of greeting or in dire emergencies. (Modi, 2016)

2.6.4 Legislation

While too many legislation is not right, it is critical that some comprehensive legislation be adopted for the safety of road users. Therefore, rules for compulsory wearing of helmets by two wheelers and seat belts by four wheelers has to be implemented. In addition, there is serious need to enforce traffic rules by the concerned authorities strictly. (Mathews 2017)

Further Edwards (2017) is of the strong view that there is need for removal of stray animals such as cattle, goats and donkeys and removal of encroachments on footpath and road margins will enable smooth flow of traffic. In all municipal and public places, motorists must prevent haphazard parking of vehicles on busy roads and intersections to ensure free flow of traffic.

2.6.5 Management of accident victims

Several authors that include Modi (2016) have been radical to the extent that they propose the importance of the "Golden Hour" in giving adequate treatment to the accident victim in saving the injured should be highlighted to both the health personals and the community. They argue that there is need for provision of medical care/first aid care facilities on highways and busy roads. This they will go a long way of reducing deaths of those involved in accidents as they try to reach nearest medical centre. Furthermore, there is serious and urgent need for provision of ambulances and trained health personals in shifting and transporting the injured person to nearby hospitals for treatment. This can be done at strategic positions along highways. This has been supported by Yukoshima (2017) who maintains that there is very practical and can save lives that are unnecessarily lost by those involved in accidents. Along the same lines of thoughts, Mathews (2017) adds that awareness creation among all sections of the society to treat accident victims with sympathy and without fear so that the morbidity and mortality can be reduced.

2.6.6 First Aid in Road Accidents

Karanja (2017) supported by Bruce (2019b) have adopted a radical approach and suggest that part of driver training should include training in first aid for every driver. Their arguments stresses that many lives can be saved and impact of injuries can be prevented with first aid if causalities are treated immediately. The basic aims of first aid should include how to save lives, protecting the casualty from getting more harm and to reduce pain and priorities of casualty treatment.

2.6.7 Road Traffic Injury is a Public Health Issue

It has been argued by writers such as Coetzee (2016) and Kayembe (2017) that road traffic accidents cannot be left to a select few. The health sector is an important partner in the process of prevention and control of road traffic accidents. However, the role of the medical professionals in advocacy for the prevention and control of RTA is always under-rated. The role of health sector is to provide appropriate prehospital and hospital care and rehabilitation for victims, improve data collection, contribute to policies, develop prevention activities, conduct advocacy, and contribute to the implementation and evaluation of interventions. Yukoshima (2017) sums this as that the road traffic injury prevention can be achieved by avoiding over speeding and following speed limits, avoiding drunken driving, use of helmets by two-wheeler drivers and use of seat belts and child restraints in cars.

III. RESEARCH METHODOLOGY

This part deals with how respondents were sampled, how data was collected from respondents. The researcher adopted mixed approach methods design because of the advantages of suiting this study. According to Collis and Hussey (2003), the biggest advantage of this design is that it offers a complete description and analysis of a research subject, without limiting the scope of the research and the nature of participant's responses as would be the case in a purely quantitative research. supported by Creswell (2009) who argued that a problem that has not been examined in a certain area of a state should be explored. A mixed method will be appropriate for this study. Mixed method involves collecting both quantitative and qualitative data for the study (Frels & Onwuegbuzie, 2013). The research sought to infer the relationship between driving curriculum and attitudes of drivers as well as rate of accidents on the roads. However, the qualitative approach will also be used to find out how drivers and road users think and feel about accidents and their impact. Therefore, the quantitative and qualitative research methods will be the most appropriate methods for use in this study.

Population and Sample

The researcher targeted the Zimbabwe Traffic Safety Board, Driving Schools Association, public transport drivers, taxi drivers above mentioned population groups. The remaining population however plays an important role in the communication and implementation of the regulations and was therefore taken into consideration in the sampling design.

Sampling Techniques

The researcher selected various sampling techniques depending on the characteristics of the population and also aiming on having representation of all the different target populations.

Purposive Sampling

Purposive sampling is the main method that was used to develop the sample of this research study and it falls under non-probability sampling techniques. According to Freedman, Pisani and Purves (2007), purposive sampling selects sample members on the basis of their knowledge, relationships and expertise regarding a research subject. This is supported by Tashakkori and Teddlie (2003) who defined purposive sampling technique as selecting certain units or cases based on a specific purpose rather than randomly. In literature, this method is also referred to as judgement sampling while others call it criterion based. Through the application of the above explanation of purposive sampling, sample members for this study had a special relationship with the phenomenon under investigation as well as sufficient and relevant work experience in the field of taxation and tax compliance. For this cause, the population for this study purposively constituted registered corporate taxpayers who were expected to be highly competent in this technical area. In addition, simple random sampling technic was also adopted for this study. This complemented the purposive sampling. This kind of sampling was used to select samples from the Greater Harare in order to establish views of various people on accidents and what their views were on accidents, causes and ways to avoid or reduce residents, giving them all an equal chance of being part of the sample. The sample of respondents included, VID officers, TSCZ Management, PSV drivers, PVT vehicles, passengers,

cyclists, pedestrians. With regards to data collection, data was collected using both questionnaires and interviews. These two instruments complemented each other.

IV. FINDINGS

The findings from this research paper do indicate that most of the respondents were males. The percentages were 69% male and 29% females. The explanation for this variation is because most of the drivers and those who work in traffic related areas are mainly male in the context of Zimbabwe. Perhaps this may reflect on the overall employment situation in Zimbabwe where males outnumber females in employment. It was imperative to include the level of respondent's education standards in this study. This was combined with both methods to understand if it affects the way they affect respondent's views regarding research objectives. It was found out that all respondents had a minimum of secondary level education to past graduate to comprehend the topic at hand. Likewise, the government and stakeholders' organisation who were equally educated to address policy issues. The age of respondents was explored in understanding the views about the study. It was found that mainly in government and regulatory bodies most decision makers are done by those above 41 years with few young respondents were some drivers who are public road. In government and regulatory bodies such Traffic Safety Board, Driving School Association, 65% of the respondents have more than five years in regulatory policy development. It was of interest to note that both in government and regulatory agencies' decision making is done by the relatively older generation who have been in the system for so long that the idea of change will be difficult to introduce.

4.1 Major cause of accidents

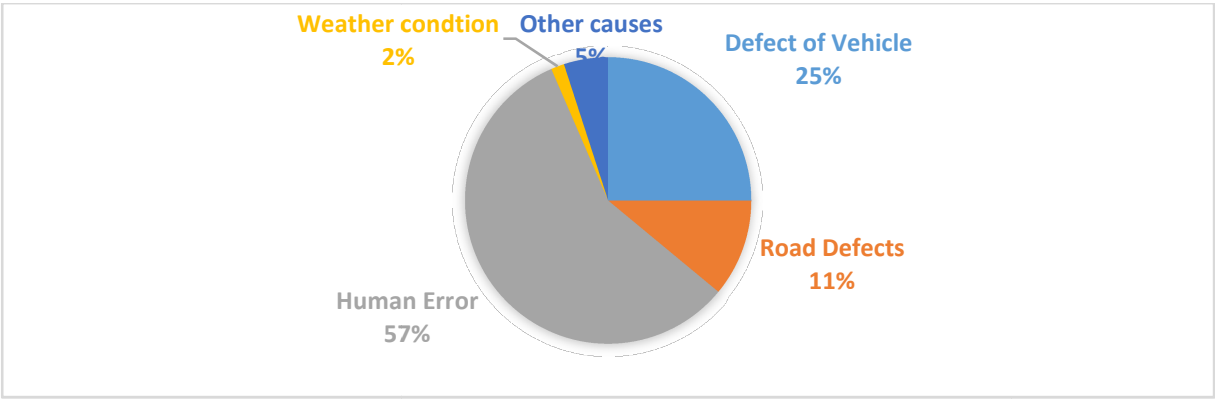
The findings do indicate the various views of respondents on the causes of road traffic accidents. Fifty-seven percent of the respondents were of the strong view that human error was the major cause of road traffic accidents in Zimbabwe. The explanation for this being the fact that the human beings are very much unpredictable and the state of human mind is very critical as one is driving in any of the roads, whether main roads or any other roads in the cities or any part of the country.

Furthermore, of the above respondents, fifteen percent are of the strong view that drunken driving have caused so many accidents nationwide. Once drivers have taken more alcohol it has a tendency of impairing their judgement capacity. As a result of drunken driving many lives have been lost and so much damage have been caused to human lives and property and also road infrastructure, eleven percent of the above strongly suggest that error of judgement especially at intersections that are not robot controlled and also in turning either left or right.

Over and above this, ten percent of the above respondents felt that there are so many unlicensed drivers on the road who are taking advantage of non-availability of traffic police on the road. They simply drive without due care and consideration for other road users. To make matters worse, they are responsible to carrying the public in Harare where this study was being conducted. This is further exacerbated by the fact that urban transport in major cities is done by Mushikashika. Most of the owners of these Mushikashika employ unlicensed drivers as cheap labour. Their major worry is profit and nothing else.

Twenty-five percent of the respondents maintained that defective vehicles accounted for second largest cause of road traffic accidents. According to these respondents most of the vehicles on the roads in Harare during the period under study are not road worthy at all and this has been complicated by the exorbitant costs of spare parts and shortage of foreign currency. In Zimbabwe, Since November 2017, after the military coup which removed Mugabe from power, the removal of the police from the road while it was welcome it has led to unbecoming behaviour among motorist as they stop anywhere and anyhow in the roads for the purposes of either picking and or dropping passengers and in some cases the drivers can chat while in the road with colleagues without due regard to fellow road users. The presence of police is necessary as a deterrent on the roads and it assist the motorists to stick to road regulations

Figure 4.1



Eleven percent of the respondents were of the strong view that the state of roads, potholes, lack of road signs, humps that are excessively lager that it becomes extremely difficult for smaller cars to climb these mountains. According to these respondents lack of maintenance of roads both in rural and urban areas due to inadequate budgetary allocations has resulted in this sorry state of the roads.

According to five percent of respondents, there are other causes of accidents. These include stray animals, corruption by law enforcements agents who accept bribes and allow overloaded vehicles, combis and buses to pass through the road blocks after paying some money to officers at any given roadblock. Corruption comes in many forces. According to VID officers, the operators pay bribes to have their taxis, combis buses "pass" fitness tests at VID such that any vehicle including public vehicles that carry people can have certificate of fitness while they are not road worthy. In addition, all process of enforcement is riddled with corruption by all those involved which includes municipal police, ZRP, ZINARA, VID.

4.2 Challenges facing enforcement authorities in curbing traffic accidents

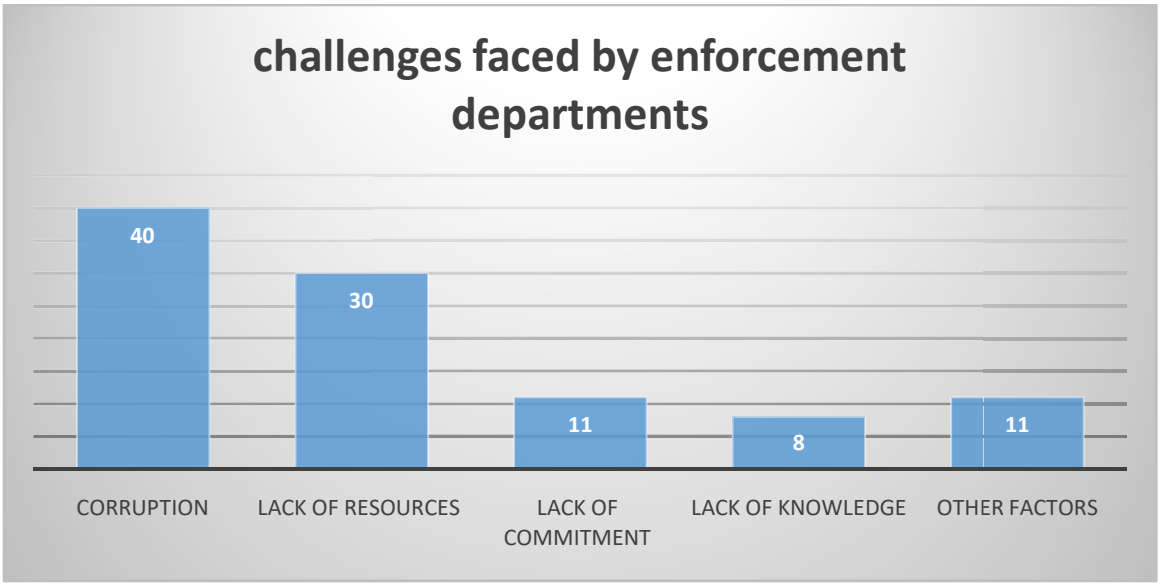
The various law enforcement agents face various challenges. According to forty percent of the respondents, law enforcement agents are greatly affected by high levels of corruption that exist in both local municipalities and cities such that motorists pay bribes depending level of seriousness. Half of this forty percent argue that statements taken at the scene of road traffic accident in some cases are altered when the individuals who have perpetrated crimes have "strong pockets." This means that justice is denied to those who are innocent.

Another thirty percent of the respondents maintain that there are very insufficient or inadequate resources that law enforcement should be using. Law enforcement respondents cited lack of resources as the greatest challenge they face. They argue that without resources, they cannot do much as anticipated by the public. These respondents cite shortage of vehicles to do night patrol and be visible in areas of greatest congestion. In addition, it was noted by the researcher that the law enforcers from all the departments such as VID, ZRP, Municipal police and even ZINARA were greatly demotivated such that they see no need to do serious work

Eleven percent of the respondents especially the male were of the strong view that there was general lack of commitment on the part of law enforcement agents to do the right thing. They argue further that the general public is not appreciative of the work they do and the communities are totally indifferent. It was also noted by the respondents that criminals were wreaking havoc especially to law enforcers who appear to be professional and duty bound. This in a way leads to lack of commitment on the part of law enforcers. In addition, they also become lethargic in their approach to avoid being targeted by armed and other criminals who feel that these law enforcement agents are becoming a hindrance to the operations of these criminals.

Lack of knowledge on the part of many stakeholders is another challenge. Despite awareness campaigns on better road usage and safety procedures, it is still not clear why all stakeholders are not able to work together in solving this problem. There is also suspicion on the amongst the stakeholders and this is coupled by what eight percent of the respondents said. These respondents argued that there is lack of knowledge on what should be done by whom and under what circumstances. Thus, this lack of knowledge is a serious threat to the enforcement operations to curb road traffic accidents on the roads.

Figure 4.2



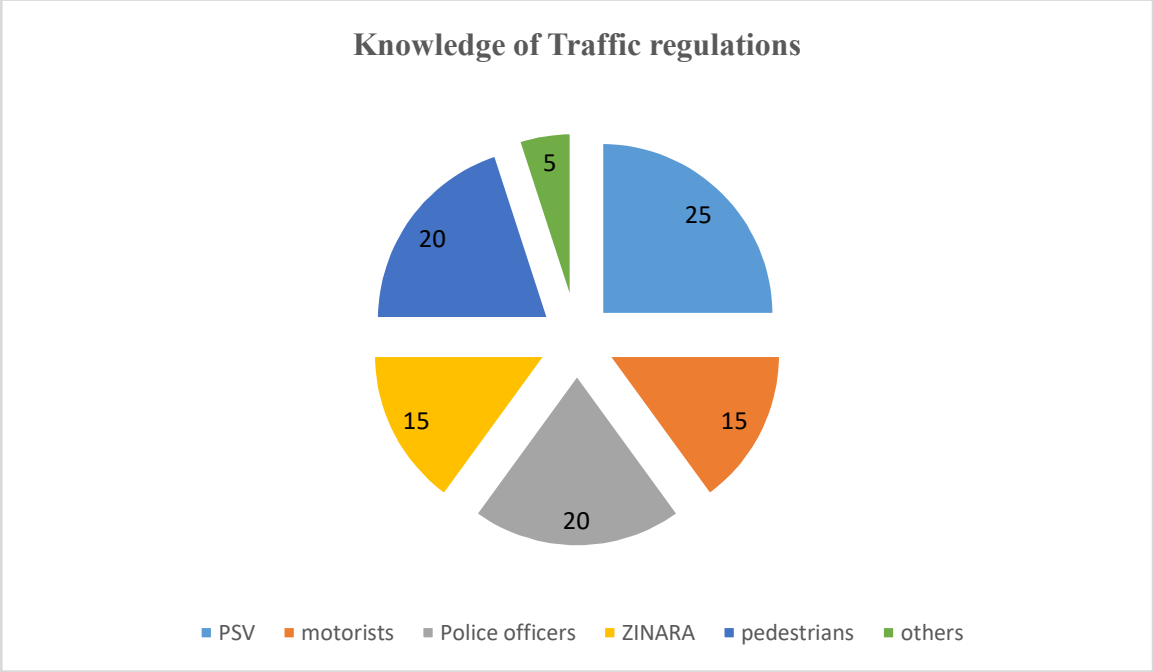
4.3 Knowledge of Traffic regulations

The respondents have various views on knowledge of traffic regulations which make the roads safer places for all the road users. Twenty- five percent of pedestrians were not fully aware of traffic regulations and use of Zebra Crossing in urban areas. They argued that they had learnt some of these things at school and don't remember much. In the view of respondents this is alright as long as they are not involved in any road traffic accidents. This researcher strongly believes that it therefore necessary to include most of these regulations in the curriculum of schools as well as tertiary education where the bulk of the people pass through at one point or the other. The unfortunate thing is that pedestrians form the largest number of road users and this is not right because failure to know and understand the regulations means that it renders use of roads extremely difficult.

Twenty percent of police officers' respondents said the majority of police officers were knowledgeable about road regulations and the matter had been complicated and corrupted especially between 2013 to around November 2017 where ZRP Traffic Department was simply busy collecting moneys from motorists over minor offences. This scenario took many officers into the road without sufficient knowledge of all the regulations and statutory Instruments that deal with the use of roads.

Twenty percent of PSV respondents said that forty percent of the drivers were poorly knowledgeable about traffic regulations. Those that are poorly knowledgeable negatively affect the smooth operations of road services by good drivers. As a result of this, driving becomes surviving game. It was further noted that Public Service Vehicle drivers were rebellious to law enforcement agents. The reason attributed to this is that every time they see law enforcers they see as though they are being targeted. Even where awareness is being carried out by ZTSC and ZRP, these PSV drivers do not even attend. Thus this spirit of non-compliance is negatively affecting the operations of various departments that deal with safety of road users.

Figure 4.3



Fifteen percent of ZINARA respondents agreed that they knew the regulations but application and enforcement was far beyond their mandate. There were a number of reasons why this is the case. Firstly, according to these respondents, they were demotivated by corrupt practices from the top in the organisation such that top management were corrupt and always sent the junior officers to cover up their tracks and furthermore there is not much investment on trainings and buying of vehicles that can be used by the junior officers to patrol and to enforcement of traffic regulations.

Another twenty percent of policer officers responded that they had limited knowledge of all traffic regulations as these were not dealt with in greater details during their police trainings. According to these respondents, it was evident that their training fell short on how to deal with traffic offences as they are usually challenged by the public on interpretation of various statutory instruments that deal with road traffic regulations. Furthermore, during traffic congestions where this study was carried(Harare), the police were left with eggs on their faces as they had no clear idea as how to handle congestions and in most cases according to these respondents

they resorted to use of unnecessary unorthodox means to control traffic.

4.4 Regulatory independence and adoption of corporate governance principles

From the majority of respondents, it was noted that there is of lack of transparency which implies that it is the major problem in the operations of stakeholders. Lack of fairness, integrity and honesty follow up with the same frequency. However, it can be seen that lack of commitment has the least frequency 17 which is slightly below the mean implying people believes it is not a major problem. It can be deducted that all corporate governance pillars are the centre of the major problems being faced in Zimbabwe with regards to road traffic safety.

The respondents believed the Zimbabwean government has partially adopted the corporate governance framework with fifty-eight percent. Despite this adoption, there is no evidence on the ground that suggest that things are being done well transparently in the interests of the motoring public or road users. For instance, resources are being allocated opaquely for road administration and maintenance. Another nineteen percent of the respondents in particular from motoring public strongly believe that the government never adopted the corporate governance framework. They seriously think that the government does this as it suits them in stealing public funds that are meant to improve the roads and make them usable by all road users.

It can be deduced from above that it is clear that 60% of the respondents agree that the stakeholders seem to be ignoring the new national corporate code whilst 20% strongly agree and the other 20% is in neutral. No respondent disagrees they are not ignoring indicating that there is a big problem here. Seventy-two percent of the major stakeholders argued that consultations with stakeholders appears formality. Maybe these occasions are meant to drain the financial resources from government or ZINARA in these consultations where large sums of money are used for no better justification. These respondents argue that what is really wanted are meaningful and concrete consultation which translate into reality with meaningful action plans for road safety.

Slightly over eight percent of respondents are of the view that participation framework does exist on paper. There is no clarity on the powers of stakeholders who are participants. They argued further that Ministry of Transport and Infrastructural Development is rather arrogant in its approach. Hence the outcome of these consultations and participatory framework does not assist in resolving road safety to the generality of the public road users. Seven point one percent of the respondents indicated that though they were engaged during the process of establishing ways to mitigate road traffic accidents, their deliberations are not documented, and they don't have access to these. Most respondents from the stakeholders like TSCZ, Ministry of Transport and Infrastructural Development, VID, ZINARA observed serious absence of the feedback system in the country. Stakeholders indicated a lack of a feedback process in this regard.

Lastly, 12.4% of the respondents stated that most regulatory bodies only have a framework to engage with key stakeholders in who will be affected. In this regard, the risk of leaving other stakeholders like the public has been noted by TSCZ. Furthermore, on participation framework, 13% of the respondents have indicated that their organisations have an engagement structure and procedures on how to carry out the process. Most regulators disclosed that the course of including subject matter experts on the regulatory system has proven difficult and brought some untrustworthy on some occasion.

4.5 Accidents in pictures

Picture A King Lions

Picture B- King Lions

Picture C- Bus lost control

Picture D- Bus fell off the narrow bridge

Picture E- Zupco involved in head on

V. CONCLUSIONS

This part gives the conclusions which have been derived from findings in chapter four and subsequently from these conclusions, the researcher will come up with recommendations from this study.

- More than sixty percent of drivers are males, aggressive, selfish and this research established that thirty- six percent were females who are normally more careful. This attitude with male drivers expose them to road traffic accidents and it is mostly male drivers who drink, take drugs especially in the form of mbanje and currently brongo, text on their mobile

cellphones and drive while women drivers are normally guilty of texting while driving.

- The research also concludes that most accidents in Greater Harare City take place during mornings usually (0630 to 0830hours and 1630 to 1945 hours) which is usually peak hours. In these hours, there is usually a lot of activities on the roads with people either taking children to school and rushing to get to work on time.
- It is evident that that all three major factors namely drivers, state of vehicles and road environment are of paramount importance in road traffic safety. The driver factor includes inexperienced driving, inattention, or distraction, physical incapacitation, alcohol consumption, risk taking behaviour. To make matters worse, some of the drivers are not licensed at all or do not qualify at all to drive Public Service Vehicles because they lack experience and their ages is not allowed.
- Some vehicles in the roads are not roadworthy. The owners are not aware of it or are simply not bothered. Some PSV vehicles have not been inspected of their roadworthiness or have their systems checked against steering, brakes, suspension, wheels and state of tyres, lights and coupling. The owners usually get to know the mechanical conditions of their cars when there is breakdown or accidents.
- The study also concludes that 75% of the drivers are still youthful in the age range of 16 to 39 years old. This means that the road network is exposed to immature people who are exposed to driver risk factors. These youthful people easily get excited and like to show off thereby exposing themselves and others to danger. This is the group that makes up most of minibus and kombi drivers as well as young people who are adventurous and out to explore the behaviour of vehicles. Usually minibus drivers like to play the cat and mouse game with enforcement agents at the same time exposing the passengers to danger in dramatic chases.
- Only 15% of Public Service Vehicle drivers have been retested. The drivers cannot afford it. The requirements are that they go to Traffic Safety Council of Zimbabwe for a defensive driver's certificate, then go to a government doctor for a medical certificate, have five years' experience and go to VID for retest. However, the fees required are not out of reach for these people but the owners of vehicles are not willing to foot the bill.
- Road safety is complex system involving various stakeholders which include all road users, government through the Ministry of Transport and Infrastrucral Development, Vehicle Inspection Department, Traffic Safety Council of Zimbabwe, driving schools Association and other such as police. Therefore, it cannot be left out to a few individuals to deliberate on it. The study notes that so far approaches that were being adopted were not multi-sectoral in nature.
- Road traffic accidents have had negative impact and has been costly to Government, insurance companies, Ministry of Health whose annual budget is insufficient to accommodate injuries and other matters emanating from accident related issues, loss of productive experienced professionals in various fields, costs of repair of vehicles. More importantly permanent loss through death, and disabilities.

VI. RECOMMENDATIONS

The researcher would like to make the following recommendations based on the above conclusions:

I. A system should be put in place that ensures fines are properly paid, rather than pocketed by potentially corrupt police officials. Police officials should receive training on the impact of road crashes on society and public health in order to have a better appreciation for why their job of enforcing traffic laws is so important. Police forces must also have access to the technical equipment they need to do their jobs well (such as radars, breath analysers, as well as patrol cars). Legislation on, for example, drinking and driving, has little meaning if the traffic police do not have the power or equipment required to enforce the laws. In the interim, road crashes continue to take place and people continue to die and beinjured.

II. Review the current driving test method or policy. Adopt the new ways that allows the driver to be tested on highway driving, night driving, rainy season driving and the social interaction with other drivers as well as the pedestrians. As for the class two and one they should be tested on safety of the goods, moving with hazardous chemicals/ or loads as well as the general safety with other traffic users. A simple 30 minutes driving test is not comprehensive. Defensive driving should be part of the test as well as the learning period There is need to use of technology cameras for surveillance will enhance road safety as the drivers will be aware that their behaviour is being monitored. The law enforcement agents should be IT trained to be able to incorporate that in road traffic safety. The driver's license should be linked to the holder's personal details.

III. It is recommended that there should be assessment of the problem, policies and institutional settings relating to road traffic injury and the capacity for road traffic injury prevention in the country. An important element in dealing with road safety is ascertaining the magnitude and characteristics of the problem, as well as the policies, institutional arrangements and capacity within the different provinces such as Harare, Bulawayo and Mutare in

order to deal with road traffic injuries. This includes an understanding not only of the volume of traffic deaths, injuries and crashes, but also of which road users are most affected; in which geographic areas the greatest problems are found; what risk factors are contributing; what road safety policies, programmes and specific interventions are in place; what institutional structures are addressing the road traffic injury problem; and what their capacity is. Intermediate outcome measures – such as mean speeds, rates of seat-belt wearing, and rates of helmet wearing – can also be useful and can be obtained through simple surveys.

IV. Possible sources of data include: police; health ministries and health care settings; transport ministries; insurance firms; motor vehicle manufacturing companies; and government agencies collecting data for national planning and development. However, the accuracy, consistency and thoroughness of these data should be assessed before making use of them. Information systems on road traffic deaths and injuries should be simple and cost-effective to implement, appropriate to the skill levels of the staff using them, and consistent with national and international norms.

V. It is further recommended that there is need to prepare a national road safety strategy and plan of action in Zimbabwe which should prepare a road safety strategy that is multi-sectoral – involving agencies concerned with transport, health, education, law enforcement and other relevant sectors and multidisciplinary – involving road safety scientists, engineers, urban and regional planners, health professionals and others. The strategy should take the needs of all road users into account, particularly vulnerable road users, and should be linked to strategies in other sectors. It should involve groups from government, the private sector, nongovernmental organizations, the mass media and the general public.

VI. This multi-sectoral approach committee needs to set ambitious but realistic targets for at least five or ten years. It should have measurable outcomes and sufficient funding to develop, implement, man- age, monitor and evaluate actions. Once the road safety strategy is prepared, a national action plan, scheduling specific actions and allocating specific resources, should be developed.

VII. It is recommended that government should make meaningful budgetary allocation thereby allocating both financial and human resources to address the problem. Well-targeted investment of financial and human resources can reduce road traffic injuries and deaths considerably. Zimbabwe can improve road network and out of toll gate fees as well as identifying potential new income sources to afford the investment needed to achieve road safety targets. Alternatively, funds for road safety may come from fuel taxation, road and parking charges, vehicle registration fees and fines for traffic violations.

VIII. The researcher recommends policy, legislation and enforcement. There is serious need to enact and enforce legislation requiring the use of seat-belts and child restraints, and the wearing of motorcycle helmets and bicycle helmets. Over and above this, government must further enact and enforce legislation to prevent alcohol-impaired driving. Standard and uniform vehicle safety standards must be enforced.

IX. It is further recommended that civil societies, communities and individuals should encourage governments to make the roads safe for all road users. In addition, these groups should assist in planning safe and efficient transport systems that accommodate drivers as well as vulnerable road users, such as bicyclists and pedestrians.

X. These civil societies must encourage enforcement of traffic safety laws and regulations, and campaign for firm and swift punishment for traffic offenders.

XI. It is further recommended that driver education programmes be done regularly to improve safety behaviours and reduce driver errors. Programmes can be given to individuals or group or can be targeted to a higher risk group such as older people or novice drivers. It has been noted through the responses that driver education programmes can improve driving performance and knowledge as well as awareness of driving hazards.

XII. It is highly recommended that Installation of cameras at intersection can limit speeding cars from violating red traffic light at intersections. Red light camera installation can be a sustainable measure because the camera can be a permanent component of transportation infrastructure. This intervention could be expensive in Zimbabwe but will go a long way in reducing accident sthat take place as a result of crossing red robots.

REFERENCES

[1]. Accidental Deaths and Suicides in India – 2010. National Crime Records Bureau. Ministry of Home Affairs. Government of India. [Last cited 2012 April 16]. Available from: http://www.ncrb.nic.in/ADSI2010/ADSI2010-full-report.pdf .

[2]. Allwood, C. (2011). 'The distinction between qualitative and quantitative research

[3]. Ameratunga S, Hijar M, Norton R. Road-traffic injuries: Confronting disparities to address a global-health problem. from, http://www.thelancet.com/journals/lancet/article/PIIS0140-6736 (06)68654-6/fulltext .accessed 12 June 2019.

[4]. Brickley, J. A., Coles, J. L., & Terry, R. L. (1994), 'Outside Directors and the Adoption of Poison Pills', *Journal of Financial Economics*, Vol.35, pp.371-390.

[5]. Burns, N. & Grove, S.K. (2003). Understanding Social Research. 3rd ed. Philadelphia: Saunders Company.

[6]. Cameron, K. (1986a). A Study of Organizational Effectiveness and its Predictors. Management Science, Vol.32, number 1, pp.87-112.

[7]. Carpenter, M.A., Geletkanycz, M.A., Sanders, W.G. (2004), 'Upper Echelons Research revisited: antecedents, elements, and consequences of top management team composition'. *Journal of Management,* Vol.30, pp. 749-778.

[8]. Champy, J. (1995) Reengineering Management. Harper Business. New York

[9]. Coetzee, A. (2016) Accidents and their Prevention: The Case of South Africa, Juta Press Pretoria

[10]. Collins, J.C. (2001), *Good to Great: Why Some Companies Make the Leap. . .and Others Don't*. Harper-Collins Publishers: New York.

[11]. Creswell, R. (2014). Research design: qualitative, quantitative, and mixed methods approaches. USA: Sage Publications

[12]. Cyert, R. M., & March, J.G. (1963), *A behavioral theory of the firm.* Englewood Cliffs, NJ:

[13]. Deloitte (2013), The Digital Transformation of Customer Services: Our Point of View. https://www2.deloitte.com/content/dam/Deloitte/nl/Documents/consumer-business/ deloitte-nl-the-digital-transformation-of-customer-services.pdf

[14]. Demsetz, H. & Villalonga, B, (2001), 'Ownership Structure and Corporate Performance'. *Working Paper*, UCLA.

[15]. Denzin, N.K. and Lincoln, Y.S. (1994). Handbook of Qualitative Research, Thousand Oaks, CA: Sage

[16]. DiMaggio, P.J., & Powell, W.W. (1983), 'The Iron cage revisited: Institutional isomorphism

[17]. Dougherty, D. and Hardy, C. 1996, *Sustained production innovation in large, mature organisations: Overcoming innovation to-organisation problems.* Academy of Management Journal, 39(5): pp1120–1153.

[18]. Drost. E.A (2011), *Validity and Reliability in Social Science Research,* Education Research and Perspectives Journal, vol.38, no.1, http://erpjournal.net/wp- content/ uploads/ 2012 /07/ERPV38-1.-Drost-E.-2011.-Validity-and-Reliability-in-Social-Science-Research.pdf, accessed 4 June 2017

[19]. Drucker, P. (1954), *The Principles of Management. Harper*-Collins Publishers: New York.

[20]. Drucker, P. (1985), Innovation and Entrepreneurship: Practice and Principles. Harper & Row

[21]. Duggard, G (2017), Preventing Road Carnage Scholl Books Publisher Ltd, Mumbai

[22]. Edwards, J. G. (2017), 'Drivers and Accidents :What are the Challenges. Journal of Information Technology, vol.21, no.3, pp.195–202

[23]. Fink, A. (1995), How to Sample in Surveys. Vol. 6. London: Sage Publications

[24]. Finkelstein, S., Hambrick, D.C. (1996), *Strategic Leadership: Top Executives and their Effects on Organizations.* West's Strategic Management Series: Minneapolis/St. Paul. MN.

[25]. Fraser, M. (1994), What is Quality in Higher Education? pp. 101–111, Buckingham, Open University press and Society for Research into Higher Education.

[26]. Gabarro, J. (1987), *The Dynamics of Taking Charge*. Boston, Massachusetts: Harvard Business School Press.

[27]. Geneva: Global Road Safety Partnership; 2007. [Last cited on 2012 April 18]. Drinking and Driving: A road safety manual for decision-makers and practitioners. Available from: http://www.who.int/roadsafety/projects/manuals/alcohol/drinking_ driving.pdf . [Google Scholar]

[28]. Ghauri, P., Grønhaug, K. and Kristianslund, I. (1995), Research Methods in Business Studies: A practical study, New York: Prentice Hall.

[29]. Hagan, F, Montgomery, J; Oriel, J (2001) Accident Prevention: Manual for Business and Industry National Safety Council, Ilionois.

[30]. Gordhan, R. (2015) Challenges of Traffic Safety in Third-world Countries. Mail & Guardian, 26 October, 2015, Johannesburg.

[31]. Hambrick, C.D. (2007), 'Upper Echelons Theory: An Update'. Academy of Management Review, Vol.32 number 2, pp.334-343.

[32]. Harbour, J. (1997), The Basic Approaches in Solving Road Carnage, Productivity Press, Ilinois

[33]. Hermalin, B., & Weisbach, M. (1991), 'The Effects of Board Composition and Direct Incentives on Firm Performance', *Financial Management*, Vol.20 number 4, pp.101-112.

[34]. Hossain, M., Cahan, S. F., & Adams, M. B. (2000): "The Investment Opportunity Set and the Voluntary Use of Outside Directors: New Zealand Evidence", *Accounting and Business Research,* Vol.30, number 4, pp. 263-273.

[35]. Jacobs G,(2000). Estimating Global Road Fatalities. TRL Report 445. 2000 ISSN 0968-4107. Transport Research Laboratory. 2000 Scholastic Books, New Delhi

[36]. Kamau, K. (2016a) Accidents and their Impacts in East Africa, MacMillan Publishers, Kampala

[37]. Karanja., G. (2017b) Challenges in Driving in East African Roads, Longman, Nigeria

[38]. Kayembe, C.M. (2017) Road Traffic Challenges in Kinshasa, Longman Nairobi

[39]. Kerlinger, F.N. (1986). Foundations of Behavioural Research, 3rd Ed. Fort Worth, Texas: Holt, Rinehart, and Winston

[40]. Kothari, C.R (2006), Research Methodology; Methods and Techniques, 2nd Ed, New Age International limited, New Delhi.

[41]. Kothari. C.R (2004), Research Methodology, Methods and Techniques, 2nd revised Ed, New Age International Publishers

[42]. Krathwohl, D.R. (1988). How to Prepare a Research Proposal: Guidelines for Funding and Dissertations in the Social and Behavioral Sciences. Syracuse NY: Syracuse University Press.

[43]. Kumar, R (2011), Research Methodology; A Step by Step Guide for Beginners, Sage Publications

[44]. Laitinen, E. (2002), A Dynamic Performance Measurement System: Evidence from small Finish Technology Companies, *Scandinavian Journal of Management*, Vol.18, number1, pp.65-99.

[45]. Lawrence, P.R., Lorsch, J.W. (1967), *Organisation and Environment.* Harvard University Press: Cambridge, MA.

[46]. Lebas, M., & Euske, K. (2004), A Conceptual and Operational of Performance, in Neely, A. (Ed), Business Performance Measurement: Theory and Practice, Cambridge University Press, UK.

[47]. Lee, C., Rosenstein, S., Rangan, N., & Davidson III, W. N. (1992), 'Board Composition and Shareholder Wealth, The Case of Management Buyouts', *Financial Management*, Vol. 21, pp. 58-72.

[48]. Lieberson S, O'Connor.IF. 1972. Leadership and organizational performance: a study of large corporations. American Sociological Review Vol. 37: pp. I17-130.

[49]. Mac Mahan, E. & Ward, M (2005), Road safety and Its Challenges In Developing Countries. Juta Press, Pretoria.

[50]. Mathews, M. (2018). The Impact of Traffic Accidents on the Economy. *Dissertation Abstracts International: Section A. Humanitiesand Social Sciences, 74*(07(E). (UMI No. 3556987)

[51]. McAvoy, P. W., Cantor, S., Dana, J & Peck, S. (1983), 'Statement of the Business Roundtable on the American Law Institute's Proposed', *Principles of Corporate Governance and Structure: Restatement and Recommendations.* New Haven, CT: ALI methods is problematic'. *Quality & Quantity*, Vol. 46, pp.1417-1429.

[52]. Miller, D., & Shamsie, J. (2001), 'Learning across the life cycle: experimentation and performance among the Hollywood studio heads'. *Strategic Management Journal*, Vol.22, pp. 725–745.

[53]. Mlambo, J. (2018) Road Traffic Accidents: Causes and Impact. College Press, Harare

[54]. Modi, D.H. (2016) Impact Of Road traffic Accidents on the Economy, Collage Press, Harare

[55]. Nacchamius, P. and Frankfort, C. (1996), *Research Methods in the Social Sciences*. 5th Ed. New York: St Martin's Press.

[56]. Naidoo,H (2011) Killer Roads. from: http://www.thehindu.com/opinion/editorial/article2042983.ece .

[57]. Nantulya VM &, Reich MR.(2011) The neglected epidemic: Road Traffic Injuries in Developing Countries. : www.bmj.com/content/324/7346/1139.full . [PMC free article] [PubMed] [Google Scholar]

[58]. Neely, A., Gregory, M. and Platts, K. (2005). Performance Measurement System Design: A Literature Review and research Agenda, *International Journal of Operations & Production Management,* Vol.25, number 12, pp.1228-1263.
[59]. Neely, A., Gregory, M., and Platts, K. (1995). 'Performance Measurement System Design,' A literature Review and Research Agenda, *International Journal of Operations & Production Management*, Vol.15, number 4, pp.80-116.
[60]. Nyamukondiwa, A. (2018), Road Accidents Costs: Who Suffers Most? Financial Gazette 18 August 2018, Harare
[61]. O'Reilly, C.A., Caldwell, D.F., Chatman, J.A. (2005), *How Leadership Matters: The Effects of Leadership Alignment on Strategic Execution.* Research paper series no. 1895 Stanford Graduate School of Business, Stanford University, Stanford, CA.
[62]. Park, Y. W., & Shin, H. H, (2003), 'Board Composition and Earning Management in Canada", *Journal of Corporate Finance,* Vol. 185, pp.1-27.
[63]. Publication No. 68, Bengaluru. 2008. [Last cited on 2012 May 22]. Available from: http://www.nimhans.kar.nic.in/epidemiology/bisp/sr1.pdf .
[64]. Report of Transport Department for the State Road Safety Council. Government of Tamil Nadu. 2012. [Last cited on 2012 April 18]. Available from, http://www.thehindu.com/news/states/tamil-nadu/article2787268.ece .
[65]. Report on emergency medical care to victims of accidents and during emergency medical condition and women under labour. Law commission of India; August. 2006. [Last cited on 2012 Apr 20]. Available from, http://lawcommissionofindia.nic.in/reports/rep201.pdf .
[66]. Richard, P. J., Devinney, T. M., Yip, G. S., & Johnson, G. (2009), 'Measuring organisational performance', *Journal of Management*, Vol.35, number 3, pp.718-804.
[67]. Road Accidents in India (2011). from: http://freedrivingtest.in/road-accidents-in-india-a-concern.html .
[68]. Saradadevi M, Bajaj P.(2008), Driver fatigue detection using mouth and yawning analysis. Science New Security, Scholastic Books, New Delhi..
[69]. Saunders, M., Lewis P., and Thornhill, A. (2009), *Research Methods for Business Students.* Person Professional,London: Pitman Publishing.
[70]. Schein, E.H. (1992), *Organizational Culture and Leadership* (The Jossey-Bass Business & Management Series). Jossey-Bass: San Francisco, CA.
[71]. Shaw, L. and Sichel, H.S.(1971) Accidents Proness, Pergamon, Toronto
[72]. Sing,C. K.H. (2017a)Indian Driving Schools. Road Safety; Drunken Driving. 2011. Available from, http://www.indiandrivingschools.com/drunken-driving.html .Accessed 13 May 2018
[73]. Sing. C. K. H. (2017), Road Safety, Everyone's Business. *Review of Financial Economics*, Vol.12, pp.61-172.
[74]. Singh, M. & Davidson III, W. N. (2003), 'Agency Costs, Ownership Structure and Corporate Governance Mechanisms'. *Journal of Banking and Finance*, Vol. 27, pp.793-816.
[75]. The National Road Safety and Traffic Management Board Bill. 2010. from: http://www.prsindia.org/billtrack/the-national-road-safety-and-traffic-management-board-bill-2010-1147 .
[76]. United Nations Road Safety Collaboration. World unites to halt death and injury on the road. WHO. 2011. [Last cited on 2011 Sept 16]. Available from: http://www.who.int/roadsafety/en .
[77]. US Library of Medicine (2009) Accidents: What Needs to be Done, American *Scientific Journals*, Vol.11, number 1, pp.257-297.
[78]. World Health Day: 2004 road safety. [Last cited on 2011 Sept 16]. Available from: www.who.int/world-health-day/previous/2004/en/index.html