

THE ROLE OF TRAFFIC OFFICIALS IN REDUCING ROAD ACCIDENTS IN WINDHOEK

By

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DECLARATION

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I, Mr Polycalypus Shivute Sem, hereby declare that this dissertation, ‘THE ROLE OF THE TRAFFIC OFFICIALS IN REDUCING ROAD ACCIDENTS IN WINDHOEK’, is my own research work and that all the resources that I have consulted and cited in-text have been acknowledged in a comprehensive list of references.

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05 February 2019

Signature

Date

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DEDICATION

This study is devoted to my parents, namely my late father (Mr. Abraham Sem) who passed away in 2004 and I wish he was still alive to witness my successful career as he encouraged and motivated me never to give up and to work hard; May his soul rest in eternal peace. I also dedicated this dissertation to my lovely mother (Mrs. Asteria Eliaser) for her infinite love, support and warm heart. I am so thankful that God made her my mom.

ABSTRACT

The role of traffic officials in road management is very important not only to ensure a smooth flow of traffic, but also to prevent negligent and reckless driving, which could result in road accidents. In light of this, the current study embarked on a research journey to investigate the challenges facing traffic officials in Windhoek (Namibia) to reduce road accidents. To achieve the goal of this study, the researcher embarked on a qualitative research approach to obtain in-depth information from traffic officials regarding their experiences in reducing road accidents in Windhoek. Following a purposive sampling method to identify the research participants, the researcher also used semi-structured interviews to guide his interviews with the research participants.

The problem in this study concerns the high number of road accidents within the Windhoek area. Between 2012 and 2016, the Namibian Police Force Report (2015/2016) recorded 3 052 accidents on Namibian roads, in which 5 289 people were injured and 524 killed. Motorists' negative attitudes towards traffic laws and regulations, unroadworthy vehicles and poor road conditions were identified as the leading causes of road accidents and presented the biggest challenges to traffic officials. Some of the challenges that traffic officials encounter are in respect of law enforcement for motorists driving under the influence of alcohol, enforcement of speed restrictions, the limited number of traffic officials to do patrols, an insufficient number of cameras monitoring traffic lights, uncooperative witnesses during car accidents as well as corruption on the side of fellow traffic officials.

In order to reduce the high rate of road accidents in Windhoek, this study recommends an increase in traffic officials' visibility on the roads, clear standards and guidelines for vehicle inspection pertaining to roadworthiness, toll free lines for reporting corrupt traffic officials, cooperation among stakeholders as well as multilingual road safety educational programmes.

TSHOBOKANYO

Seabe sa batlhankedi ba pharakano mo tsamaisong ya tsela se botlhokwa thata mme e seng fela go netefatsa gore pharakano e elela sentle, fela le go thibela go kgweetsa go go botlhaswa go go ka bakang dikotsi tsa tsela. Go lebeletswe seno, thutopatlisiso ya ga jaana e nnile leeto la patlisiso go batlisisa dikgwetlho tse di itemogelwang ke batlhankedi ba pharakano kwa Windhoek (Namibia) malebana le go fokotsa dikotsi tsa tsela. Go fitlhelela maitlomo a thutopatlisiso eno, mmatlisisi o tsere molebo wa patlisiso o o lebelelang mabaka go bona tshedimosetso e e tseneletseng go tswa mo batlhankeding ba pharakano malebana le maitemogelo a bona mo go fokotseng dikotsi tsa tsela kwa Windhoek. Ka go dirisa mokgwa wa go tlhopha sampole go ya ka maikemisetso a thutopatlisiso go supa bannileseabe ba patlisiso, mmatlisisi o ne a dirisa gape dipotsolotso tse di batlileng di rulagane go kaela dipotsolotso tsa gagwe le bannileseabe ba patlisiso.

Bothata jo bo mo thutopatlisisong eno bo malebana le palo e e kwa godimo ya dikotsi tsa tsela mo tikologong ya Windhoek. Magareng ga 2012 le 2016, Pegelo ya Sepodisi sa Namibia (2015/2016) e rekotile dikotsi di le 3 052 mo ditseleng tsa Namibia, moo batho ba le 5 289 ba gobetseng mme ba le 524 ba tlhokafetse. Maitsholo a bakgweetsi a a nyatsang melao le melawana ya pharakano, dikoloi tse di sa siamelang tsela mmogo le maemo a a sa siamang a ditsela di supilwe e le mabaka a magolo a a bakang dikotsi tsa tsela mme e le kgwetlho e kgolo mo batlhankeding ba pharakano. Dingwe tsa dikgwetlho tse di itemogelwang ke batlhankedi ba pharakano di malebana le tiragatso ya molao mo bakgweetsing ba ba kgweetsang ba nole nnotagi, tiragatso ya dipeelo tsa lebelo, palo e e lekanyeditsweng ya batlhankedi ba pharakano ba ba paterolang, palo e e tlhaelang ya dikhamera tse di tlhokomelang mabone a pharakano, dipaki tse di se nang tirisanommogo ka nako ya dikotsi tsa tsela gammogo le bobodu mo ntlheng ya badirammmogo ba batlhankedi ba pharakano.

Gore go fokodiwe kelo e e kwa godimo ya dikotsi tsa tsela kwa Windhoek, thutopatlisiso eno e atlenegisa gore go okediwe ponagalo ya batlhankedi ba pharakano mo ditseleng, dipeelo le dikaedi tse di malebana le tlhatlhobo ya dikoloi malebana le go siamela go nna mo tseleng, megala e e sa duelelweng gore go begwe batlhankedi ba pharakano ba ba tletseng bobodu, tirisanommogo magareng ga baamegi gammogo le mananeo a dipuodintsi a thuto ya ipabalelo tseleng.

LIST OF ABBREVIATIONS

MSS: Ministry of Safety and Security

MVA: Motor Vehicle Assistance Fund

NAMPOL: Namibia Police Force

NBC: Namibia Broad Casting Corporation

NRA: Namibia Road Authority

NRSCN: National Road Safety Council of Namibia

NTA: Namibia Training Authority

RBT: Random Breath Testing

RTA: Road Traffic Authority

UN: United Nations

USA: United States of America

WHO: World Health Organisation

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CHAPTER 1: GENERAL ORIENTATION

1.1 INTRODUCTION

The report on Global Plan for the Decade of Action for Road Safety 2011- 2020 (2015: 4) indicated that approximately 1, 3 million people who are involved in road accidents die as a results of road traffic accidents, which means about 3000 deaths occur daily across the globe. Furthermore, these accidents lead to 20- 50 million people living with serious injuries worldwide. In Namibia this problem is experienced to a greater extend in urban areas such as in Windhoek District, Khomas Region where numerous people spend a large amount of their time in motor cars rather than in rural areas with fewer motor cars (Banyikwa, 2005:10).

Motor Vehicle Assistance Fund (MVA) (2016) states that about half of all the drivers in Namibia have experienced traffic road accident. However, the types of traffic road accident differ; for example, some drivers might have experienced bumping into each other's motor cars, while others contributed considerably to the increasing number of traffic road accidents that claim the lives of numerous people. Irrespective of the fact that people lose their lives strangely, numerous road users appear to be annoyed and angry while on the road. The Namibian Police Force Report (2016) specifies that the main contributors to traffic road accident are driver' obstruction, caused by traffic overcrowding that usually resulted in the drivers being violent and aggravated. Consequently, they perform unlawful actions such as failure to give way to other vehicles and exceeding the speed limit. There are many reasons for this, one of which is the poor law enforcement by the traffic officers (MVA, 2016).

The National Road Safety Council (NRSC) (2016), states that reduced law enforcement and the increasing congestion in urban areas play a big role in the behaviour of many drivers. Correspondingly, Motor Vehicle Accident Report of Namibia (MVAR) (2015) maintains that serious traffic law enforcement on various road safety matters is required because currently the concentration of traffic officials is only on speeding.

1.2 MOTIVATION FOR THE STUDY

Even though Namibia continues to experience a high number of road traffic crashes, a slight reduction was observed during 2016. Reported crashes in 2016 have revealed a slight decrease in crashes and injuries by 4 percent and 10 percent respectively as compared to 2015 (MVA, 2016:13). However, fatalities increased with 2 percent for the year under review. This is not worth celebrating as the decrease in crashes and injuries has been negligible, and in fact has increased since 2011. Nevertheless, the problem of road traffic accidents is progressively becoming a hazard not only to public health but also to national sustainable development in numerous developing countries. In essence, traffic road accidents contribute to poverty by causing deaths, injuries, disabilities, grief, loss of productivity and material injuries. This is of concern to the Sustainable Development Goal (SDG) target, which is to reduce global road traffic death and injuries by 50 percent by the year 2020. Consequently, more effort is desirable from both the private and public sectors (including the traffic officials) to reach this target. There is a need for teamwork to strengthen the Decade of Action objectives to be fulfilled as noted by the World Health Organization (WHO) (2004:20).

There are three motivations why this research was carried out. First, road accidents and road safety in Namibia are a major concern to both the society and the government. Second, the National Road Safety Council and the Ministry of Works and Transport of Namibia have raised concerns with the growing road crashes, injuries and fatalities associated with motor vehicles (National Road Safety Council (NRSC), 2016:15). Third, there is a gap in the literature which has yet to be filled to examine the role of traffic officials in attempt to reduce road traffic accidents. Although road traffic accidents occurs worldwide, in developing countries (including Namibia) this problem is increasing rapidly (MVA, 2016: 25).

1.3 PROBLEM STATEMENT

In Namibian road traffic accidents began to increase more after 1990 with the advent of Namibian government as an independent country. More people gained the freedom to own and drive cars

leading to more cars and drivers of varying types (i.e. law abiding and reckless drivers) dominating the roads in Windhoek. The Namibian Police Force Report (2016) indicates that between 2012 and 2017, there were about 3052 accidents on Namibian roads, in which 5289 people were injured and 524 killed. Scholars such as Barengo, Mkamba, Mshana & Miettola, (2006); Ansari, Akdaar, Mandoorah & Moutaery (2000), have shown that most of the road accidents in Namibia are attributed to factors such as over speeding, fatigue, driving while intoxicated and poor road conditions.

The Motor Vehicle Accident Report of Namibia (2015) also indicates that the main contributory factors to crashes involving pedestrians in the country includes lack of pedestrian's crossings on the road, drivers and pedestrian's negligence, un-road worthy vehicles, and lack of drivers and pedestrians knowledge on the road rules. The people killed in vehicle accidents include pedestrians, cyclists, passengers, and drivers (New Era, 2013), whereas, the types of crashes include roll-over, head-on collision, head-rear collision, motor cycle, pedal cycle and falling from moving vehicle (Informante, 2013).

Owing to the above discussion, the involvement of traffic officials in road management is important to ensure that road users are safe and road accidents are prevented. In terms of Section 14(1) (a) of the Namibian Road Traffic and Transport Act (22 of 1999), the role of the traffic officials include:

- To stop, inspect or test vehicles on the road in order to determine the roadworthiness of vehicle.
- To ascertain whether such vehicle or the functioning thereof comply with the provision of this Act.
- To determine if the load in the vehicle is within the required mass that is predetermined for that particular vehicle.
- Check if the driver in question has a driver's license and if such a license permits him to drive which type of motor vehicle class.
- To ensure smooth flow of traffic by controlling and regulating traffic in public roads and making sure reckless drivers are cautioned for their unlawful driving.

- To arrest, fine or take the particulars of drivers who are found to be driving unlawfully by ignoring the road signs or regulations.

Given the serious nature of road traffic accidents in Namibia, various stakeholders on the road safety had conducted road safety campaigns in the country (Ipinge and Owusu- Afriyie, 2014). Nevertheless, the problem with traffic road accidents persists and very little is known on the challenges facing the traffic officials in reducing road accidents in Namibia. Hence, this study seeks to fill the gap of knowledge by identifying the challenges facing the traffic officials in reducing road accidents in Windhoek.

1.4 THE VALUE OF THE STUDY

This study will contribute to the academic body of knowledge by highlighting the challenges facing traffic officials in curbing road accidents in Windhoek, Namibia. The findings of this study will also inform the policy makers in Namibia (especially the Namibian Traffic department) on how better to reduce road accidents in Windhoek. Other places with similar problems could also use the findings of this study for benchmarking purposes whereby they can implement the recommendations made to address issues concerning traffic road accidents.

1.5 THE AIM AND OBJECTIVES OF THE STUDY

The aim of this study is to investigate and explore the challenges facing traffic officials in reducing road accidents within Windhoek area.

The objectives of this study include:

- To investigate and describe the strategies used by the Windhoek traffic officials in their attempt to reduce road accidents.
- To identify the challenges encountered by the traffic officials in their quest to reduce road accidents.

- To identify the root causes of road accidents in Windhoek.
- To suggest a framework that could be used to reduce road accidents in Windhoek.

1.6 RESEARCH QUESTIONS

The following research questions will be used to assist the researcher to unpack the problem under this study as well as to achieve the research aim.

1. What strategies does the traffic officials use to reduce road accidents in Windhoek?
2. What are the root causes of road accidents in Windhoek?
3. What are the challenges encountered by the traffic officials in attempt to reduce road accidents?
4. What framework could be used to reduce road accidents in Windhoek?

1.7 LIMITATIONS OF THE STUDY

It would have been useful to include more traffic officials in this study to attain a broader understanding of the problem at hand. However, due to a limited number of experienced traffic officials in Windhoek it is not possible for the researcher to have a larger sample of research participants. The researcher' lack of funding to visit more cities that have similar problem of road accidents in Namibia also caused him to rely only on traffic officials based in Windhoek because of their proximity to the researcher. This would be considered as one of the main limitations faced by the researcher during data collection. Therefore, this study would also be limited to a representative sample (Creswell, 2004:67). Meaning the findings of this study will not be generalised to all traffic departments in Namibia because of the cost and time that will be required from the researcher to travel across the country and conduct interviews with each research participants.

1.8 DEMARCATION OF THE STUDY

This study was conducted in Namibia, Windhoek District. Namibia is an independent country that is situated in the Southern part of Africa. It shares borders with surrounding countries such as South Africa, Botswana, Zambia, and Angola. Windhoek District is situated in Khomas Region,

one of the regions amongst the 14 administrative regions of Namibia (including Erongo, Hardap, Kunene, Karas, Kavango, East Kavango West, Ohangwena, Omaheke, Omusati, Oshikoto, Oshana, Otjozondjupa, and Zambezi). The chosen research site is located within Khomas region. This site was chosen because it is an urban area, heavily populated with people, vehicles and it has a high rate of traffic road accidents.

1.9 DEFINITION OF KEY CONCEPTS

1.9.1 Traffic official

Refers to a member appointed under section 4(1) of the Namibian Police Force Act (19 of 1990) to perform the functions entrusted to him or her by this Act. It also includes a member appointed under section 11(1), subject to Public Service Act (13 of 1995) as a Traffic officer. This term also covers those members who are employed under Namibian National Road Traffic Act (22 of 1999) and any member of a municipality police service (Office of the Prime Minister, 1999: 64).

1.9.2 Road safety

Refers to the measures used by the traffic officials, government and other related stakeholders to reduce the potential risk of people involved in road accidents (National Road Safety Council of Namibia, 2014).

1.9.3 Road accidents

Refers to the collision of vehicles including the injury of persons, death of a driver or passengers and pedestrians involved in road crashes (National Road Safety Council, 2009).

1.9.4 Traffic Law enforcement

Traffic law enforcement refers to the actions towards ensuring road user's safety and the free flow of traffic (The Namibian Police Force report, 2014).

1.10 CHAPTERS LAYOUT

This research report consists of five chapters that are linked to the issues in relation to the study, namely:

Chapter 1: General Orientation- the aim of this chapter is to discuss the problem statement, the value of the study, the aim and objectives of the study, research questions, limitations of the study, demarcation of the study definition and key concepts of the study.

Chapter 2: Literature Review- in this chapter theories underpinning this study together with the relevant scholarly work that support the argument on the issue of road traffic accidents are discussed.

Chapter 3: Research Methodology- this chapter outlines the kind of research approach, design, sampling and data collection methods as well as the methods used to analyse data in this study.

Chapter 4: Presentation of the Research Findings- this chapter presents the research findings and provides the researcher's interpretation of the data and discussion of the findings.

Chapter 5: Conclusion and Recommendations- this chapter contains the final discussion, the conclusion and recommendations made on this study.

1.11 SUMMARY

This chapter equips the reader with a general understanding on the topic under the study and the structure of the research report and the limitations encountered by the researcher during the research journey.

CHAPTER 2: LITERATURE REVIEW

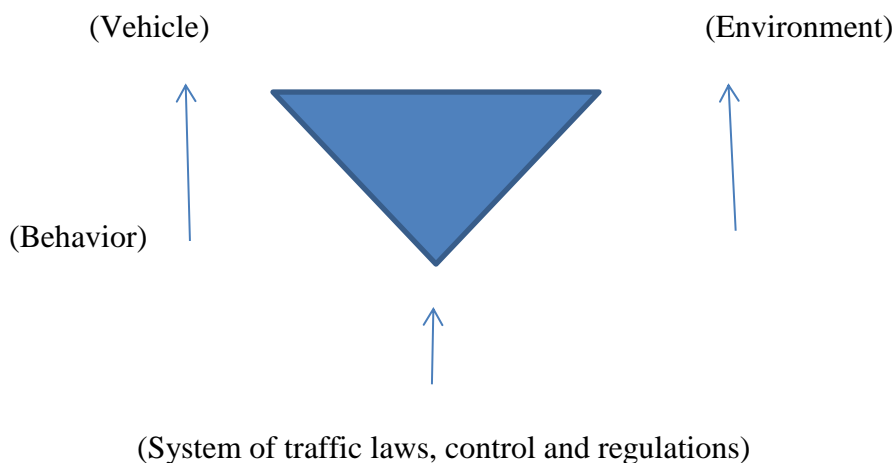
2.1 INTRODUCTION

This chapter covers the nature of road accidents in Windhoek, Namibia and other international countries such as South Africa, Nigeria, India, China and USA. The study drew materials from different sources such as library books, journal articles, newsletters, internet and newspapers articles with relevant information to identify the research information gaps. This study is underpinned by the system theory, political ecology and geographic approaches, which provide a thick description on the root causes of road traffic accidents.

2.2 SYSTEM THEORY

The system theory was adopted in this study because it covers the important elements relating to issues of road traffic accidents. The figure below illustrates the system theory.

Figure 1: System theory



Source: Jorgensen & Abane (1999)

The diagram as indicated in Figure 2.1 above demonstrates numerous cause and deterrence of road traffic accidents. The system theory assists the researcher as follows:

- The theory helps to discover the method of traffic laws, rules and type of enforcement intended to guarantee traffic safety in urban areas (including Windhoek District). Thus, with regard to the vehicle, special attention is given to the vehicle's model, period, mechanical circumstances and protection apparatus like seat strap in a vehicle.
- The diagram on the system theory helps to discover the relationship between numerous roots and/ or safety aspects and deterrence modalities of road crashes such as the physical environment, road system, wider physical, daylight, weather condition, climate and street conditions, spatial conditions settlement pattern, populated area, traffic separation, topography and road constructions qualities.
- It also helps in accepting the most important contributing factor of street traffic accidents such as the behaviour of driver, age, sex and common traffic manners as driving skill, driving manner, hazard factor and driving under the influence of alcohol and drugs (Wilkins, Hayward & Johnson, 2000:80; Jorgensen & Abane 1999; Muhlrud & Lassarre, 2005:98).

Based on the above model, when people obey the rules of the road, traffic road accidents will be minimal. For example, in Namibia traffic rules (speed restrictions are 60 kilometers in urban areas and 120 kilometers in highways. Road signs are also displayed in certain road). The impression made by this model is that when traffic laws are adhered to in terms of using a vehicle that is roadworthy, the driver's behavior is respectful of the road rules such as speed limits and the environment including the road is in good condition then the chances of road accidents are slim. As such, the role of the traffic officials in road management will be more effective.

2.2.1 DRIVER' BEHAVIOUR

According to Rundmo & Iversen (2004:76), human behaviour is an essential part of individual personality traits. Therefore, individual behaviour fluctuates for people living in cities such as Windhoek, Johannesburg, New York, Nairobi, and Lagos. They hold diverse inhabitants characters such as local density, gender, age, sex, education, occupation, socio-economic status, income, family size, and training (Peden, 2004:54). Similarly, their risk taking behaviour contrasts based on their cultural values, their economic conditions, and environment where they live

(Rundmo & Iversen, 2004:89; Rune, 2002:75). Equally, the behaviour impacts people's perception, attitudes and driving behaviour in the direction of traffic road accident risks.

Barengo, Mkamba & Mshana (2006:13) similarly asserts that good quality control of the motor vehicles on the street rests on the skills of the vehicle driver (Gainewe & Masangu, 2010:24). Notwithstanding, driving is a challenge, and traffic road accidents can happen because of dominant mistakes, lack of knowledge, recklessness, lack of skill, law disobedience, lapse, lack of care, drunken driving or the use of drugs (Oltedal, Moen, Klempe & Rundmo, 2004:64; Bjornskau & Gafni, 2000:23). This view is supported by MVA (2012: 23) which testified that the human being feature contributes to the mass of road traffic crashes in Namibia.

Driving skills

Gatrell (2002:98) argues that, with regard to traffic road behaviour, an individual can differentiate among driving knowledge (knowledge and skill) and driving techniques, which shows arrogance, and traffic hazard opinion. Nonetheless, training road users raises the driver's level of knowledge and improves the skill of responsible driving. However, a study completed by Malekela (2005:64) shows that a large number of drivers who holds driving licenses by no means go all the way through a driving examination but possess licenses through illegal means. Drivers who did not go through proper training cause frequent traffic road accidents rates (Mupimpila, 2008:85). During emergence circumstances, stop remoteness is as very significant. It counts on the driver's reaction at a time, velocity of the vehicle, value of tires and the type of the street (Limb & Dawyer, 2001:43).

Similarly, studies completed on drivers who would have been involved in accidents show that driving under the influence of alcohol or drugs are singled as the primary reason for rapid road accidents (Krug, 2002:86; National Road Safety, 2012:21; Holt-Jensen, 2001:65; Peden, 2004:43; Rundmo, 2004:86). Drunk drivers and the use of drugs are identified as the major damage to the driver's capability to observe road signs and take charge of the motor vehicle in case of emergency (Peden, 2004:40).

Additionally, fatigue related crashes are caused by inexperienced and amateur drivers (United Republic of Tanzania, 2006: 18). Also, tiredness by long distance drivers pose danger to street traffic crashes. Prominently, excessive speed is the main cause for street accidents and consequent injury rates of individuals. Conversely, some health circumstances are as well said to be danger factors, for example diabetes and epilepsy (WHO, 2000:72; RSAP, 2000:65; Wilde, 2002:67).

Age

Driver's age too is known as an authoritative contributing issue to amount of traffic road crashes. The study by Vasconcellos (2001:93) reports that traffic road accidents are leading in certain age group and they occur at known hours of the day and week and at known areas. While Gatrell (2002:90) complements that irresponsible driving in youth have been connected with enlarged danger of accidents (Vasconcellos, 2001:93). The difficulty among adolescent road users is that they take advantage but they have no proper driving experience (Gatrell (2002:96). The study done by Wilkins et al, (2000:49) also report that old drivers (70 years and over) have the maximum pace of serious crashes association whilst adolescent drivers cover maximum rates of injuries contribution (Vasconcellos, 2001:100).

Gender

Males are more prone to traffic road crashes than females. Vasconcellos (2001:93) discovered that men compared to women are involved more in deadly accidents. On the other hand, females are much involved in accidents that cause serious injuries. It seems that men are further at danger compared to women in all age group. Vasconcellos (2001:89) reveals that in developing countries males are further at risk than females of being incapacitated on streets accidents.

Individual Perception of risk

According to Oltedal, Moen, Klempe & Rundmo (2004:43) individual perception of risk is classified under four components. The initial perception is the introduction to the quantity of group exploring the inside of the structure by dissimilar road specified users. The second is the fundamental likelihood of accidents assumed at a specific experience. The third is the likelihood damage after a collision. The fourth component is the consequence of harm. Equally, danger can

be described as a result of individual miscalculation, kinetic power, patience of human being and post-crash concern (Oltedal, et al, 2004).

The major advance of these studies is associated to hazard opinion and the link with danger decisions and judgment in hesitation. A variability of cause has been recommended to foresee danger opinion. As Oltedal et al (2004) classifies, less developed countries display the highest danger accepting tradition. Awareness made is that road crashes have dropped within developed countries, compared to underdeveloped where it has intensified.

For people to detect risk, many factors such as the likelihood of the undesirable event and the resulting effect of such event have to be considered. Numerous researchers have shown that imposed high penalties on terrible events results in behaviour modification for the good. This makes drivers to be more careful and defensive in an effort to avoid risks of huge loss and being subjected to penalties (Rundmo & Iversen, 2004:100). As stated in Rundmo & Iverson's research (2004:28), individual perception of danger recompensation is the name known to a presumption which states that a person should be provided with protective mechanisms within the vehicle such as seat belts because of the upsurge sense of protection from the seatbelt. According to Wilde (2002:73) individual's risk-taking decisions symbolize a matching work in which individual perception of danger is weight beside tendency to take danger. The tendency to take danger is predisposed in predictable loot and as an apparent risk increases, however citizens take action by being extra cautious. Bjornska & Gafni (2000:89) contend that there is a matching behaviour predisposed in deceptive hazard and tendency to get the danger which in circle impacts traffic road crashes and loot. If the apparent danger of a condition surpasses objective stage, we turn to decrease it and if the apparent danger is less than the objective level, we shall try to boost our danger reverse to our objective level (danger optimization) during further risky measures. However, Wilde (2002:120) maintains that the objective level of traffic road crash threat is strong-minded by four categories of encouraging factors. First is the likely benefit of reasonably dangers behaviour replacements: for example gaining time in over speeding once the road are excellent (Ansari et al., 2000:94). Second is the anticipated cost of reasonably dangers behaviour alternative- in support of example vehicle repair cost and insurance surcharges for being in violation/ at fault during traffic road crashes (Wilde, 2002:74). Third is the anticipated benefit of reasonably secure

behaviour alternatives (Rundmo, 2004:102), for example the psychology of cover reduction for traffic road crashes. Fourth is the anticipated cost of reasonably secure behaviour alternative: in support of instance, using a tight chair straps (Wilde, 2002:138).

2.2.2 VEHICLE FACTORS

Johnston (2000:100) maintains that the number of vehicles in good service are more involved in road crashes the same as damaged motor vehicles. More importantly, motor vehicles with seatbelts, enough illumination, brakes, navigation wheel, and tires in excellent state can assist to decrease traffic road tragedy. Johnston add that (2000:100) a combination of different types of motor vehicle as well as motorbikes and bi-cycles in service at dissimilar velocity is further prevalent in built-up areas. Consequently, these influence the danger of accidents and collisions among numerous class of motor vehicles (light vehicle, heavy vehicle, and abnormal vehicle) by a variety of categories and un-motorized street drivers. Furthermore, vehicle mile travelled (VMT) and interrupted motor vehicle examination are in addition variables that appear to influence the number of traffic street crashes (NRSCN), 2013/2014).

Motor vehicle uniqueness and motor vehicle make are regularly cited within the existing text as being potentially significant factors causative to elevated motor vehicle connected casualty duty.

2.2.3 ENVIRONMENT APPROACH

With respect to physical environment, different climate threatens drivers' movement, and travel. This includes geo hazards such as warmth, mist, tall winds, snowfall, heavy rain, frost; flood, tornado hurricane and avalanche have special effects on infrastructure consequently on road traffic crashes (Vasconcellos, 2001). Similarly, deep tropic rainfalls also threaten the exterior of the moving vehicles on the road and power street way security, mobility and efficiency. In addition, it touches street security during augmented collide danger, revelation to bad hazard conditions. Additionally, weather conditions impact street mobility by aggregate journey moment interruption, plummeting travel volume, speed limits and declining street capability (WHO, 2004). Equally, in environment of area of residence and working whether in built-up and countryside area weather conditions controls the amount of travel or street risk in an area.

Stylish infrastructure with dividing lines for pedestrians and cyclists is greatly secured than those with no such services. More importantly, street complexity, including the types of road, street segment, traffic lane thickness, intersection design, potholes, well planned with special symbols (Vasconcellos, 2001). The street symbols must be comprehensible by themselves and must express a clearly identifiable meaning to the street users. A study completed by WHO (2004) observes that disclosure to elevated amount of noise at employment place tends to be connected with occupationally acquired trial deficits. These deficits raise the danger of motor vehicle grievance for pedestrians (WHO, 2004:93). Travelling long distances by foot is linked with an increased danger to pedestrians. (WHO, 2004:93).

2.2.4 SYSTEM OF TRAFFIC LAWS, CONTROL AND REGULATIONS

Traffic laws have to do with administration guiding principle concerning street safety. The plan of the traffic guideline systems and enforcement is to guarantee sufficient operations in the traffic and adherence to legislation (Vasconcellos, 2001). Specifically, set of laws by traffic signaling systems, velocity restrictions and velocity reins as well as the continuation of street travel officers to patrols and checkpoints can lead to various decrease of traffic road crashes by prompting the street user's behaviour. Vasconcellos (2001) maintains that, travel street guideline are frequently not methodically implemented and the road traffic officials with sound knowledge to enforce moving violations are fewer.

Similarly, Gatrell (2002) finds that riders with helmet had an 85% decrease in their danger of head injury as compared with those with no helmet. Eden (2004) also reports the efficiency of the helmets in bicyclists and motor cyclists. He state that the use of helmets is reliant upon the velocity of the motorbikes. It is further shielding at little velocity of 50km for each hour but less helpful at higher speeds. While safety belt exercise by front seat occupants has been found to decrease motor vehicle related injury, obligatory seatbelt wearing was supportive; seatbelts for adults and children end just about 50% to 60% of all losses consequential from motor traffic road accidents (Gatrell, 2002). Existing literature asserts that the use of baby restraints, especially baby security seats, can decrease morbidity in adolescent victims of motor vehicle crashes (Charles-Owaba & Adebiji,

2001). Additionally, road safety campaigns can successfully decrease traffic road crashes (Charles-Owaba & Adebisi, 2001).

Vasconcellos (2001:100) asserts that the geographic location can impact the probability of road crashes in a vicinity. Whereas scheduling for street erecting to aid expansion should take into thought the thickness of the street and the plan of the junction. Similarly, the continuation of better roadside services for pedestrians and safer journey points to decrease traffic crashes should rest with the system at different level (Rune, 2002:98). However, the continuation of traffic laws and efficiency with which they are implementing is mostly the responsibility of public administrators. Furthermore, government attitude towards traffic crashes will control the response of drivers and the greater public. This is as well a query of sustainable growth goals and the accessibility of recourses, and a main concern regarding the general danger level of the public in respective nations.

In light of the above discussion on the causes of road accidents, the WHO (2000:79) recognized that traffic street injury contributes to unnecessary injuries, death and significant community and financial costs. Existing literature further maintains that the public recognizes that street crashes are a problem, and they are informed of them through the media. However, they see these problems as not affecting themselves personally, thus they often continue to take risks with their driving. Many members of the public are of the opinion that injuries and fatalities are the cost the public must pay for the high level of mobility (WHO, 2004:200). In a statement in print by the WHO (2004:32), traffic road crashes are ranked the ninth source of death in the planet. This clearly shows how serious road accidents are and that there is a dire need for strict traffic law, control and regulations.

2.3 POLITICAL ECOLOGY APPROACH

Political environment in human being natural features clarifies the methods in which people in developing countries use their resources and opportunities accessible to them. Nevertheless, in this study political ecology of traffic road crashes is strappingly connected to existing resources plus dimensions of the countrywide and home establishment to place street security strategy in position. Thus, the absence of capital and authority to trail up on supervision and enforcement can lead to

lesser inspiration of traffic officers because the management guiding principle does not have the power on all the factors that cause traffic road crashes (WHO, 2004; Run, 2002).

According to Run (2002), Political financial system is concerned with matters of authority and control. While political environmental science stresses that human being location liaison is at home, district and international measures can be understood by analyzing the relations of resources to political financial system services in the country. With respect to the dilemma of elevated traffic road crashes in Namibia, political environmental science approach will assist to incorporate human being location aspect at home level to reduce the traffic road crashes at that exact position in relative to community, financial and political part and perform in stipulations of allocation, distribution of capital, budget, regulations, set of laws and control (WHO, 2004).

2.4 GEOGRAPHIC APPROACH

Geographic approach is grounded on geographic matters including place, time, environment and traffic road accidents as a theoretical framework to comprehend proper use of size of the street, winding street, mountainous vicinity, landscape and provincial distribution in manifestation on traffic road accident within a particular region. For example, it has been experimental that traffic road crashes in Windhoek District raise in cheerful time particularly in Christmas time and it is as well as raining time in that specific occasion (WHO, 2004).

2.5 TRAFFIC LAWS AND REGULATIONS IN NAMIBIA

In Namibia, according to Road Traffic and Transport Act (22 of 1999) as Amended, Road Transportation Act (74 of 1977) and Police Act (19 of 1990) as Amended, road traffic laws are enforced mainly by the Namibian Police (Nampol) and the Windhoek City Police (Namibia Road Authority, 2012). Both Nampol and Windhoek City Police are responsible for the city traffic law enforcement Principally the two serve as a deterrent for road users aiming to entrust road traffic fines, during raising drivers awareness of the danger of being trapped (Amweelo, 2016; Indongo, Angombe & Nickanor, 2013).

However, National Road Safety Council (NRSC) (2015), deterrence strategies, generally involves highly noticeable road traffic officials deployed on the high ways. The following strategies namely: road traffic inspectors, camera activity, drink-driving, speed limits, helmet use, seatbelt use, child restraints and education campaigns, bring about lasting changes in road user behaviour. This significantly changes road users' arrogances through reinforcement of these behavioural modification strategies. In addition, Nampol through the Road Traffic and Transport Act (22 of 1999 enforces provisions), *inter allia* is responsible for patrolling all national roads to improve road safety, diminish road traffic accidents and ensuring that all road rules are adhered to (Amweelo, 2016; Indongo et al, 2013; NRSC, 2015; MVA, 2016).

Nevertheless, Namibia is faced with the certainty of an increase in the figures of car accidents, loss of lives and injuries. According to Tendekule (2015) and NRSC (2015) the cause of these accidents are various but the majority which are more common and regular are:

- nonexistence of proper street protection policy;
- lack of an efficient and reliable collision information management system;
- no consistent street traffic security administration strategy;
- lack of defensive driving courses;
- insufficient pedestrian and cyclist services; as well as undomesticated animals roaming the roads (Amweelo, 2016; Namibia thoroughfare Authority, 2012).

2.6 ROAD ACCIDENTS IN OTHER COUNTRIES

Historically, road traffic crashes were primarily a problem in industrialized countries; but now it is becoming a more challenging issue in emerging economies (Vasconcellos, 2001:99). This is regarded as a worldwide challenge both in developing and non- developing countries. The tendency in traffic road accidents in studies done in Nigeria, South Africa, United States of America, China, and India are discussed below:

2.6.1 An Overview of Road Accidents in Nigeria

Nigeria is one of the fastest growing economies of Africa with a high population on the continent. As a result, Street Traffic Crashes (RTA) has been extremely difficult to prevent. A study completed in 2003 in Nigeria shows that large motorization and street overcrowding has been associated with enlarged street strain, many deaths and disabilities. Oyeyemi (2003:15) identified that speeding, reckless driving, driver impatience, non-compliance to road traffic rules and road rage are among the common causes of traffic road accidents in the country.

Testing Drivers based on Behavioral impairment

In Nigeria, the initial intercession/strategy on traffic official authority is checking the breath of motorist to determine if they are intoxicated and if the driver is influenced by alcohol or drugs. The motives for testing a driver, for inappropriate alcohol consumption and driving have to be evidently recognized as this can be an issue to inquiring in a court of law and guide to a non-conviction (Oyeyemi, 2003).

This strategy has been made known to cover a positive contact on reducing the level of drinking and driving. Section 22 of the Nigerian Road Safety Act (141 of 1988), allows for breath testing of each person who was found to have committed a road traffic infringement to determine the cause of traffic road crashes (Holt-Jensen, 2001:36; Oyeyemi, 2003).

Nonetheless, the use of this intervention has been condemned by Holt-Jensen (2001:36), since it does not give a genuine constant and sustainable level of avoidance. This assessment should be maintained by street surface study which indicates that the figure of alcohol impaired drivers detected through the use of this strategy is objectively small. Oyeyemi (2003:20) has indicated that to arrest drivers based only on the driving behaviour may lead to loss of competence with traffic officials who solely targets road users with general impairment signs (Oyeyemi, 2003).

Roadblock and Sobriety checkpoints

The traffic officials also have the powers to stop motorists at a barricade for certificate check-up and other checks including soberness check. Drivers suspected of consuming alcohol, for reason such as the obvious scent of alcohol and visible impaired manners are subject to breathalysers. However, barricade techniques vary from those who rely exclusively on motivating cue as they

permit traffic officers to create straight contact with a driver despite whether indications of alcohol impairment have been observed (Oyeyemi, 2003). These types of enforcement techniques can as well raise the danger of hesitation, and consequently the level of prevention, as drivers quickly understand that they might be stopped at some occasion and examined for alcohol injury (Holt-Jensen, 2001; Oyeyemi, 2003).

Soberness checkpoints have been identified as one way to reduce the ever increasing number of alcohol impaired drivers on the road flow and the total figure of alcohol associated tragic traffic road crashes. Holt-Jensen (2001:45) established the importance of first reduction in alcohol connected traffic road crashes and fatalities. Nevertheless, questions have been raised regarding the long-term deterrence by road users brought about by roadblock strategy. It appears that the roadblock strategy has only short-term impact on reducing alcohol abuse. Many scholars have criticized this strategy based on the impact it brings against behaviour change in the long term (Holt-Jensen, 2001; Oyeyemi, 2003).

Random Breath Testing

The third and effective wide strategy of traffic official is power that allows them to bring to a halt and breath test any driver with no reasons to suspect that the driver has consumed alcohol. This technique of enforcement is frequently referred to as unsystematic breathing test (RBT) appropriate to the unsystematic choice of drivers for test. The strategy is usually regarded as effective prevention interference. Every driver who is stopped must be subject to compulsory breathalyser check (Holt-Jensen, 2001; Oyeyemi, 2003).

The main reason of unsystematic breathing test (UBT) is to prevent road users from drink driving, because they are aware of the likelihood that anyone is subject to random road-side alcohol testing, and that the danger of discovery and nervousness is current (Holt-Jensen, 2001). A main dispute in support of RBT is that drivers distinguish that they might be tested whether they are shown to have been drinking and that when the danger of discovery is effective and reliable, less road users are tempted to drink and drive (Oyeyemi, 2003).

Oyeyemi (2003) states that the benefit of RBT is that it can curtail drinking alcohol and driving; and thus, it is an effective counter-measure to prevent drivers from drinking; because they are aware of possible consequence, should they have to submit to a random breath test. Maximising the level of prevention requires the making of a logic of discomfort between the potential offender regarding drinking as well as driving. Oyeyemi (2003) posits that this can be attained during:

- Extremely evident law enforcement which gives the feeling that RBT is random, necessary and ever-present;
- Constant elevated level of advertising focusing on RBT enforcement performance;
- Creating an awareness between road users that RBT checkpoints can be encountered at some time and in some places;
- Certainty of penalty which reflect the harshness of the offence committed; also
- The stopping of a big amount of road users and ensuring that everyone is subject to a Breathalyzer test to determine alcohol consumption while driving (Holt-Jensen, 2001; Oyeyemi, 2003).

2.6.2 An Overview of Road Accidents in South Africa

According to Smith (2014), South Africa is one of the world's most dangerous countries and is deemed by the WHO (2004) as having the world's sixth lethal infrastructure with a fatality rate of 31.9 citizens per 100,000 population. Smith (2014) further stated that 51% of drivers in Pretoria and Johannesburg, Cape Town and Durban claimed to have been victims of road rage, from August 2008 to April 2009 but only a few admitted to behaving aggressively. Most importantly, the main causal factors comprise speed, unfocused, irresponsible, negligence, selfish driving, unsafe overtaking, vehicles with faulty tyres, navigation and brakes. Road accidents concerning pedestrians accounted for 33% of deaths. Similarly, jaywalking, pedestrians on freeways, drunk pedestrians walking at night remain major challenges (Kelly, 2006:13). Strategies used by traffic officials to reduce traffic road accidents include:

Red Light information

Posting public speeding information via red lights allows drivers to be cognizant of the speed at which they are driving. When drivers are made aware of their speed in such a public manner, it has the potential to compel them to reduce their driving speed. These red-light speed indicators are useful on roadways that are prone to accidents caused by speeding drivers (Amweelo, 2016)

These signs also can have the capacity to provide feedback to drivers based on the level of speed in which they are driving at the time. The red-light signs can also be successful in having a tangible mechanism to set driving standards for the road using community to see in a public setting. Most importantly, they can provide a visual reference on driving and speed norms which can serve as a reminder for their current and future driving experience.

Red Light Camera

Red-light cameras are mechanisms which automatically take pictures of cars that enter through the street or intersection, once the red-light overhead sign/signal has been displayed. These cameras are an effective strategy to also decrease the number of drivers who are operating a motor vehicle while under driving suspension (Makinen & Hagenzieker, 1991).

According to Makinen & Hagenzieker (1991) red light cameras have resulted in the reduction of up to 50% of drivers who drive in a period of certificate suspension. This does not totally discontinue the sum of unlawful driving, nevertheless, it does make driving more difficult for suspended drivers, as they should attain a different vehicle in order to drive, and the largely regularity of such manners is then low.

Speed enforcement

A speed enforcement strategy is based upon the values of prevention, designed to raise the danger of worry so that the disadvantages of speeding prevail over the advantages. Specific deterrence is based on the theory that drivers who are detained and punished for speeding will be deterred from committing more speed offences (Makinen & Hagenzieker, 1991)

While universal prevention is based on the theory that road users who are out to enforcement and educated on the danger of anxiety will adjust their speed manners to evade the danger of discovery and the resultant penalty. The speed limit in South Africa and in Namibia in peri-urban areas is 120 km while in urban area is 60 km.

However, speed limits encourage safe driving speed as it allows the speed of road users to be used as a way of formative unlawful driving manners. One of the major nuisances related by speed restrictions is that road users frequently see them to be unsuitable in favour of the active street surroundings circumstances (Oyeyemi, 2003).

Seat Belt enforcement

The chair strap enforcement is safety devices fitted in the motor vehicle. The main purpose of inhabitant safety intends to make sure that vehicle occupant is provided with the highest point of safety in traffic road crashes circumstances. Occupier control system, frequently referred to as seatbelts, are an important element of crashes safety plan and are frequently regarded as a way to mitigate the harshness of traffic injury (Makinen & Hagenzieker, 1991).

In South Africa like Namibia, there are two different types of chair strap interventions enforced by the traffic officials, which influence street customer in a number of ways. The first kind of intervention linked exclusively to the motor vehicle, where the fixing of seatbelt compulsory. The second category of intervention connected unambiguously to the street user, chair strap is enforced for every occupant in a motion motor vehicle to apply the seatbelt provided (Makinen & Hagenzieker, 1991).

The road traffic laws in South Africa like Namibia make it mandatory to use a chair strap; and to not use it is unlawful driving manners, with various fines and enforceable punishments. Consequently, these laws frequently rely on a variety of enforcement based to answer method to encourage chair strap practice and to make sure that street user fulfilment is maintained by all drivers on a comparatively elevated point (Makinen & Hagenzieker, 1991).

It is argued that seatbelts contribute significantly to saving lives. Firstly they preclude occupier as of beating the navigation controls and windscreen within every except the mainly harsh traffic road crashes. Secondly, they stop expulsion since the motor vehicle into crashes circumstances, an incident that raise the danger of fatality. Thirdly, in crashes incident harsh factors are unsurprisingly invited to allow on motor occupiers with chair belts be operative during distribution these crashes services on the fittest parts of the body. Finally, chair strap lessen the height deceleration height suffered in the occupier in cashers circumstances in permitting the stop practice to begin in advance in the street crashes progression (Makinen & Hagenzieker, 1991).

It is commonly accepted that the use of seat belts in motor vehicles reduces injuries and saves lives. Both in South Africa and Namibia the use of seatbelts by drivers and passengers is a legal requirement for driving and riding in a motor vehicle. However, unfortunately a large number of occupants of cars refuse to use their safety belts. According to Makinen & Hagenzieker (1991) there are 12 possible reasons why people refuse to use their seatbelts:

- lack of interest; lack of memory;
- afraid of being trapped in car restraint and not able to escape the vehicle when necessary after a crash;
- Fending off method weighing up by an achievable crash;
- Distrust in the crash danger;
- Distrust in the injury-reducing possessions of chair strap;
- Distress;
- Diminish motivating satisfaction;
- Community norm;
- Receipt of danger;
- Liberty of preference; also
- Short prejudiced danger of discovery for non-use (Makinen & Hagenzieker, 1991).

2.6.3 An Overview of Road Accidents in United States of America

In order to reduce traffic road fatalities, traffic officials should ensure that a traffic strategy/intervention is in place. This strategy should be implemented by the traffic road officials through programmes, practices and planning processes. The strategies used by the traffic officials in the United States of America to reduce traffic road accidents include, targeting teenagers, older drivers, motorcyclists, bicyclists, pedestrians and passengers. Therefore, the traffic road officials use the following interventions:

Traditional Enforcement methods

Traditional enforcement methods are strategies used by traffic road officials in the United States of America to raise the possible prevention consequence that the attendance of a traffic officer have scheduled the manners of street drivers (Krug, Sharma & Lozano, 2000).

The major difficulty with customary enforcement methods is that their consequence on driver's manners is frequently simply short-term. Street drivers often adapt their manners at the enforcement place and where they observe that the danger of nervousness is maximum. Formerly the drivers believe that the enforcement danger is no longer prevalent, hence their manner quickly reverts to pre-enforcement level. The difficulty is that there are not enough police wealth to cover up the whole street system and street user are aware that the danger of anxiety at some time is extremely little. This likely raises the height of police visibility (Johnston, 2000).

Automated Enforcement devices

Mechanical enforcement strategies normally consists of discovery apparatus, a dispensation part, a camera, and a video recorder digital picture soundtrack machine. Once a motor vehicle is detecting the dispensation part to determine whether a crime is being committed and if so, a picture is recorded. However, the picture depicts information on the motor vehicle, road users and the occasion and day of the crime. The information is then used to recognize the licensee. A traffic crime notices and caution memo is then mailed to the licensee of the motor vehicle (Krug et al, 2000; Johnston, 2000).

Krug et al (2000) describe numerous habits in which mechanical enforcement strategies can add to the efficiency of the hard work of traffic official enforcement. Firstly, such strategy can raise the possibility of discovery of traffic violations with no significant upsurge within traffic official capital. Secondly, such strategy can upsurge the volume and significance of information provide to the street drivers. Finally, these strategies create positive facts that a crime has been committed which can raise the justice and impartiality of enforcement (Johnston, 2000).

Drinking and driving

In many countries mitigating the occurrence of drinking and driving is relegated to the criminal justice system. Traditional drink and driving countermeasures usually place the importance on the individual road user to simply not drink and then operate a motor vehicle. However, if individual drivers refuse to adhere to community norms of not drinking and driving, then it becomes the responsibility of law enforcement system to deter, apprehend and punish offenders. Therefore ultimately, the sole enforcers of national strategies to deter drinking and driving if for the most part the responsibility of road traffic officials (Krug et al, 2000; Johnston, 2000).

Use of Different Types of Penalties

Once a traffic crime is detected there are range of likely punishment decisions availed to traffic officials. These can range from - a verbal or written warning, arrest or jail (Krug et al, 2000; Johnston, 2000). The utilization of these punishment options have been revealed to be effective in curtailing driving offenses. In totalling, the strategies applied by the traffic officials include warning letters, fines and licence suspension.

Warning Letters

The application of warning letters has been advocated by many researchers (Krug et al, 2000) who emphasize the possible profit of such an advance and emphasise the significance of justice of implementation. These letters serve to teach drivers about their negligence in the quest to educate them on possible future punitive actions, if the offense continues (Johnston, 2000).

Traffic Fines

The primary kind of travel infringement punishment is the application of permanent total fines. The exercise of this kind of punishment has been revealed to have a contact on the height of unlawful street user manners. Nonetheless, the implementation of traffic fines has a figure of profit. Firstly, they give resources of describing punishment harshness to the kind of traffic crime devoted. Secondly, they can provide financial resources to policing institutions. Thirdly, they deliver an enactment prevention as monetary sentence means that the offender may be less likely to reoffend as a result of the financial penalty imposed.

Licence suspension

Certificate deferment has been revealed to be an operative counteract calculate beside replicate offender and persons who infringe further severe traffic law. The drivers are suspended without driving licence (Johnston, 2000).

Demerit point Schemes

The uses of demerit point system have turn into progressively fashionable means to punish road users. Graziano & Raulin, (2004) stress that such system includes the share of points to numerous types of traffic crimes. Once a driver accrues extra points in quantified occasion bound, then the highest figure allowed repeated certificate deferment grades.

Application of advertising

Street security campaigns are frequently used to sustain travel enforcement performance and there are strong facts to support the idea that a change in enforcement practices should constantly be escorted by some shape of supporting advertising. The major advantage of using advertising is that it can raise the apparent danger of anxiety and consequently prevention. Community expectations can be raised on those additional and new enforcement performances encountered.

Therefore, the advantages connected with the use of promotion is that it can raise neighbourhood awareness of street security subjects as well as the necessary use of enforcement (Graziano &

Raulin, 2004). Therefore, neighbourhood receipts of traffic regulation enforcement performance can play a vital function in the course of curbing street user conduct.

2.6.4 An Overview of Road Accidents in China

China is the largest developing country, consisting of over 1.3 billion people. The number of cars owned has increased from 9.4 million in 1994 to 20.5 million in 2002 (Johnston, 2000). In China a car is only driven on public roads upon being registered with the traffic official management division of a community safety appendage. Where a car is not yet registered but needs to be driven on public infrastructure momentarily, a momentary surpass is obtained. However, traffic officials use the following strategies to reduce road accidents in China (Yin, 1989):

Speed Measurement devices

Speed dimension devices of a car can be done by one of numerous diverse methods comprise time/distance dimension machines, radar apparatus and laser apparatus. The common of these machines have the proficiency of being simultaneous to various types of mechanical photogenic revealing part. Traffic officers in diverse situations currently use all three types of pace dimension apparatus and all have been reported as having an elevated height of speed dimension correctness (Yin, 1989; Johnston, 2000).

Time/Distance Measurement devices

Period/speed dimension devices utilize antenna, on or in the street exterior to determine the occasion gap engaged by a car to move an exact space. These types of apparatus habitually contain of two sensors, which are positioned all along the measurement lengthwise of the street. The moving of a car is resolute by calculating the period engaged from discovery at the initial antenna to discovery at the second antenna, a permanent space left. Such apparatus can spot the occurrence of a car by change in brightness greatness and force (Johnston, 2000).

Radar Based devices

Radar is primarily used as a form of pace dimension machine. Radar apparatuses produce an incessant microwave ray at recognized regularity and when a vehicle is detected, the modification in the incidence of the reflected ray allows the pace of the motor vehicle to be resolute by an elevated stage of accuracy. There are two diverse types of radar machines: down-the-street radar and across-the-street radar (Johnston, 2000).

Down-the-street radar produces a microwave ray all along the thoroughfare, typically into an approaching car, and can be used in equally still and movable form and is as well moderately low-cost. This type of enforcement radar part is the mainly regularly used velocity/speed dimensions machine in action in traffic motor vehicles approximately the world (Fitzpatrick, 1991). It has provided evidence in movable campaigns and is normally fine liked by traffic operative outstanding to its ease and generally trustworthiness (Yang, 2003).

Down-the-street radar does have some shortcoming as well as the piece of evidence that makes sure that they detect motor vehicles speed. One additional shortcoming of this machine is that the elevated control ray emit can be identify by road users with radar detectors (Yang, 2003).

Across-the-street radar produces an extremely thin, low-powered ray focussed at a viewpoint of around 20 degree diagonally the stream of traffic. The benefit of this kind of radar part contain the capacity to make sure affirmative recognition of pace motor vehicles, to spot almost every speeding motor vehicles (still in elevated amount traffic flow), it is comparatively open from effect of electrical and other interferences (when positioned properly), it is functioning still beside vehicles with radar detectors (Yang, 2003).

Laser Based devices

These machines produce a thin elevated regularity crew of infra-red illumination pulses which can precisely conclude pace outstanding to the modify in the regularity of laser pulses (Yang, 2003)

Vehicle Based enforcement

Vehicle based enforcement is a device used to detect speed of a motorist which use computerised time/distance measurement device. These devices have figure of recompense, as well as the reality that they are typically little and convenient and fine liked by traffic officers operators outstanding to their ease of use (Vasconcellos, 2001). The major benefit of these machines is the truth they can be used in equally movable and motionless enforcement modes. This raises the rank of prevention as road users distinguish that any police motor vehicle has a possible pace enforcement ability (Vasconcellos, 2001; Yang, 2003).

Fixed Site enforcement

The next nature of engage site campaigns is where automatic pace enforcement machines are momentarily lay down up for an assured time-span, and are frequently, except not essentially, man with traffic staff.

Everlasting fixed-site operations can discourage speed manners at the enforcement location and can be effective in dropping speed manners at recognized elevated crashes areas (Johnston, 2000). Although, as such sites can be seen towards street users, and everlastingly set, their result going on speed performance is generally limited to the enforcement locale. Turning an automatic discovery device between a sequence of set home installation, which are tactically located all along a street, may be one likely result to the difficulty of place exact prevention.

Operations that are fixed at a site normally use automated enforcements systems. There are two types of systems, the first one being those that are not manned by traffic officials. The second type of involves speed enforcement devices being temporarily set up and operated by traffic personnel.

Fixed-site operations that are permanently installed can deter speeding drivers at the enforcement site and can be effective in reducing speeding in areas that are prone to high accident occurrences (Johnston, 2000). However, because these sites can be easily viewed by drivers and permanently installed, their impact on speeding drivers is usually only maintained to the area which is being enforced. “Rotating an automated detection device among a series of fixed housing installations,

which are strategically positioned along a roadway, may be one possible solution to the problem of site-specific deterrence”. Drivers are thus not aware which site or sites have a device fitted and therefore are more prone to drive at the speed limit over the entire length of the treated roadway (Vasconcellos, 2001).

Aerial enforcement

Above ground speed enforcement is an additional means of identifying speeding drivers. This kind of enforcement has some recompense above customary approaches recitation mostly because speeding drivers can be identified easier among a longer space. It is as well changeable and problematic to spot since the attention of the driver is frequently determined on the instantaneous street location (Vasconcellos, 2001).

2.6.5 An Overview of Road Accident in India

Traffic road accidents in India are influenced by many factors of which rapid economic growth was amongst them and had led to many people owning vehicles (New Delhi Television (NDTV), 2010). The strategies undertaken by traffic officials include the following:

Mobile traffic operations

Mobile traffic campaigns to compel seat strap practice are frequently carried out in alliance with everyday traffic tour of duty. If the traffic officer, in the route of common traffic enforcement operation campaigns, observes a motor vehicle occupier not wearing a seat strap then the motor vehicle is stopped and a violation letter issued (Vasconcellos, 2001).

The advantage of movable enforcement operation is that the occupier has less time to set on the chair strap and the police officer is better equipped to identify the traffic violation. The use of police motorcycles has been recognized (Vasconcellos, 2001) as a viable resource for movable enforcement that can raise the efficiency of seat strap observation operations.

Motorbikes are extra manoeuvrable than other type of police bikes as well as are not just capable to spin and run after an criminal extra fast but can as well be located so as to give a improved sight interested in motor vehicles. The simply difficulty connected with this kind of seat strap enforcement scheme is that there are merely incomplete figures of motorbikes accessible to the police (Vasconcellos, 2001).

Seat Belt usage

The initial kind of law is based ahead a strategy of derived enforcement where a seat strap law infringement may be addressed alone if the traffic staff has stopped up the motor vehicle driver for other kind of infringement. The next kind of law is based upon a procedure of main enforcement which allows a traffic agent to impede a motorist exclusively on the centre of a chair strap law infringement.

Main enforcement policies have been exposed to contain the most contact on chair strap taxing conduct. This makes instinctive logic as after using this enforcement advance the danger of hesitation is elevated since drivers distinguish that they can be stopped up at some point for not using a chair strap (Vasconcellos, 2001).

Police Education Programmes

It is normally considered that teaching and appealing to traffic officers to vigorously enforce seat strap laws can enhance considerably their enforcement practices (Vasconcellos, 2001). If the community become alert of a raise in chair strap enforcement performance, then the connected raise in the alleged danger of fear as well as the supplementary centre on chair belts always leads to a raise public accountability.

Integrated Enforcement programmes

The ease of use and price efficient advance to rising seat strap enforcement is meant to incorporate seat strap enforcement operations with other policing performance. This advance, when accompanied by helpful hard work to raise community responsiveness, has been revealed to be a successful means of obtaining lengthy gains in chair strap practice duty (Vasconcellos, 2001).

The major remuneration of this kind of enforcement advance is that such an agenda is simple to administer and does not need the distribution of extra police capital. Chair strap violation notice is issued as an element in progress police performance and, as a result, this type of enforcement advance does not need a raise in the height of policing (Vasconcellos, 2001).

Selective Enforcement Programmes

Raising the apparent danger of anxiety connected with non-seat strap taxing is reliable ahead means of street users observing and initiating a suitable response in a raise in the height of chair strap enforcement action. The paramount means to achieve this is during the use of rigorous, extremely noticeable, and vigorous publicised seat strap enforcement operations (Vasconcellos, 2001).

Incentive programmes

There is a vast amount of literature which indicates that optimistic strengthening is a distant operative means of adjusting manners than unconstructive underpinning. The use of incentives to support chair strap practice is based upon this code of constructive support and assumes that conduct, which has good penalty, is more likely to be continual and at elevated charge than manners that does not guide to positive effect (Vasconcellos, 2001).

Feedback mechanisms

The use of response strategy to tell occupants to use a seat strap has been revealed to be an efficient means of escalating seat strap practice. The beliefs following this advance is that occupants may frequently disregard to use their seat strap and a number of figures of calm token may be all that is necessary to get them to accept suitable seat strap taxing manners.

Motor Vehicle Reminder Systems

A figure of motor vehicle manufacturers has incorporated seat strap forewarning strategy in their motor vehicles as a means of inspiration to occupants to use chair strap. These systems

characteristically consist of a forewarning beam and warning sign which point out that an occupant is not wearing a chair strap.

Dashboard sticker

The use of control panel markers is one advance that has been adopted to support chair strap practice. Vasconcellos (2001) reports on the competence of such an advance which used a sticky label with the meaning 'chair strap practice is necessary in this motor vehicle'. The markers were then disconnected from the motor vehicle to look at whether or not other factors had affect chair strap practice.

Public posting signs

The efficiency of community relocation symbols has also been acknowledged by a several researchers. Vasconcellos (2001) reports on the use of a big symbol installed at two elevated amount intersections which displayed the meaning. The practice could be additionally enlarged, if someone was standing next to the sign and was able to make motor vehicle occupants attentive of the meaning demonstrated.

2. 7 Global plans for the Decade of Action for Road Safety 2011- 2020

According to global plan for decade of action for road safety 2011-2020 (2015: 4), road traffic accidents are preventable and countries need to consider the following guidelines as the pillars for strengthening their plan of actions against road accidents:

Pillar 1: Road safety management - encourage multi-sectoral partnerships that will improve coordination of resources on dealing with street security issues.

Pillar 2: Safer infrastructure and mobility- ensure that street security infrastructures cater for the support of all street users including pedestrians, cyclists and motorcyclist. Stakeholders also need to be held accountable for their role in creating safer infrastructure and mobility.

Pillar 3: Safer motor vehicles - create awareness to motorists on new improved vehicle safety measures such as crash avoidance technologies including anti-lock brake system.

Pillar 4: Safer street users - implement educational programs that alert road users on the risk and prevention measures for road traffic accidents. The study conducted by Iipingge and Owusu-Afriyie (2014: 536) on road safety programmers in Namibia support the above provision and furthermore identified the following aspects as essential to reduce the high road accident in Namibia, namely:

- The use of all indigenous languages when broadcasting road safety educational programmes
- Increase in traffic police visibility on the roads especially in towns
- Regular patrols by traffic officials
- Increase the traffic robot in town toward control the stream of vehicles and pedestrian crossings.

Pillar 5: Post crash response - provide quick support and emergency services to road accidents victims and long-term treatment and support for the traumas endured during the accident.

2.8 SUMMARY

This chapter discussed the issue of road accident in Namibia and other countries such as Nigeria, South Africa, China, India and America. It was clear that, traffic road accidents are a global problem that requires strict law enforcement and improved strategies to prevent the phenomenon. It was also evident that distinctive common factors of traffic road accidents such as gender, age, aggression, and congestion exist in all countries. Abuse of alcohol and drugs by some drivers also surfaced in all countries as a contributing factor to the road carnage. This literature has informed the researcher of global challenges that remain prevalent in Namibia, and also engaged the research to further investigate best practices and relevant strategies to overcome the aforementioned challenges. The next chapter will provide the study method.

CHAPTER 3: RESEARCH METHODOLOGY

3.1 INTRODUCTION

This chapter focuses on the methods employed for collecting information for this study. This chapter also involved a discussion of research design and approach, population and sampling, data collection, data analysis, methods to ensure reliability and validity, and ethical considerations.

3.2 RESEARCH DESIGN AND APPROACH

3.2.1 Case Study design

In this study a case design was employed. Creswell (2007) defines a case study as an experimental examination that examines a current marvel within its factual life setting particularly when the limits between marvel and setting are not obviously obvious (Creswell, 2003; Baker, 1999). A case study design was employed when the researcher had little control over measures and when the emphasis was on modern marvel with real involvements (Creswell, 2007; Yin, 1989). In the process of understanding the risk factors that contributed to traffic road accidents, Windhoek District was chosen as a case study.

3.2.2 Qualitative research approach

In this study, qualitative research method was employed. Creswell (2003) defines a qualitative study approach as a thoughtful life involvements founded on the collective sense of peoples' social life. A qualitative study covered a number of techniques including interviews, respondent's observation and focus group discussions. The rationale for adopting a qualitative study was because the researcher sought to understand human behaviour and the reasons that govern such behaviour (Limb, 2001).

The qualitative study permitted the investigator to distinguish the study respondents better by locating their special understanding on the topic of the study. This also offered a chance to the members to generate a connection with the examiner and be able to ask for clarity on the study questions so that they could offer the researcher relevant answers.

3.3 POPULATION AND SAMPLING

Population refers to the large groups of people or things (Creswell, 2003). The study population for this research consisted of all traffic officials working within Windhoek. These include traffic officials from the Traffic department in the Namibian Police and those working in the City Police, Traffic unit. Owing to the difficulty of studying the entire population group, the researcher settled for a sample group that served as a representation of this population. According to Creswell, (2007) and Ghauri & Gronhaug (2002), a sample group is a percentage of basics reserved from a populace, which is considered to be characteristic of the target population. A purposive type of sampling method was chosen for this study because it led the researcher to those traffic officials that have first-hand experiences of working on road safety issues (including road accidents). Purposive sampling refers to a method whereby the researcher intentionally selects certain people from the research population simply because they have the kind of information necessary for the research (Creswell et al, 2007).

For this study the research members were nominated based on the purpose of this study, as such sampling group included only those with experience of working as traffic officials dealing with matters related to traffic road accidents. The total number of research participants was thirty (30); this included the traffic officials in higher ranks and those at lower ranks from the Namibian Police and City Police. The officials included 20 Namibian Police and 10 City Police.

Purposive sample techniques was employed to classify research members founded on the characteristics of a populace and because the researcher' aim was not to generalize the study findings but to present an overview of the challenges facing the Windhoek traffic officials with regards to reducing road accidents (Creswell, 2007; Ghauri & Gronhaug, 2002). Purposive sampling is a judgmental technique which was used only to identify people because they fit the required criteria for the study (Gray, 2004; Creswell, 2003), which in this case included: five years working experience as a traffic official within Windhoek area.

3.4 DATA COLLECTION

3.4.1 One-on-one Interview

The researcher also used key informant interviews whereby he conducted in-depth face-to face interviews (Creswell, 2003). The questions asked from research participants were guided by an interview schedule and such questions were semi- structured type of questions. The reason for this was to allow the research participants (in both one-on-one and focus group interviews) to freely add information which they deemed relevant to the research topic. As such an interview schedule guided the process of the interviews so that the important research questions were answered (Creswell, 2003).

Advantages to this option included participants who served as a good source of information to gain a more holistic view of the situation. The information gathered came from people who had pertinent information and vision. In relation to semi-structured interview method, members were permitted to ask new issues related to the topic of study (Ghauri & Gronhaug, 2002).

3.4.2 Focus Group discussion

The researcher also used focus group discussion which was a small group of four to eight people who participated in a group interview (Creswell, 2003). Ghauri & Gronhaug, (2002) suggests that focus group discussions are a qualitative approach in which a group of people are asked about their perceptions, opinions, beliefs and attitudes towards a product, service, concept, and idea. In this study, the researcher asked the respondents questions in an interactive group setting where respondents were free to talk with other group members.

3.4.3 Secondary data

Secondary data consisted of books, journals and annual reports on the topic in question. The researcher also studied booklets, articles, archives and brochures issued by the Ministry of Safety and Security, Namibia Police and City Police traffic police records. Data was obtained from monthly and annual reports from January 2010 to December 2016. These documents assisted in confirming or disputing the success and challenges encountered by the traffic officials in dealing with road accidents.

3.5 DATA ANALYSIS

The analysis process involves reading through the data transcriptions, identifying important segments of data and providing meaning to them (Creswell, 2003: 26). In this process, themes that emerged during the process of gathering the data are grouped together according to their similarities. For example, in this study themes were identified from the research transcriptions and later on discussed with the purpose of giving the meaning behind the participants' responses. The themes identified in this study include: age, gender, strategies used to reduce road accident and challenges thereof of the research participants. This was done in order to secure the standard of quality of the data.

3.6 METHODS TO ENSURE RELIABILITY AND VALIDITY

In order for research data to be of value and use, they must be both valid and reliable.

3.6.1 Reliability

According to Creswell (2003), reliability refers to a degree of consistency with what an instrument is designed to measure. The research measures have to be reasonably consistent, in a manner that they will show the same results even if they are repeated several times by different persons. Reliability refers to the repeatability of findings. If the study were to be done a second time the scale displays the same weight every time we measure a specific item (Saunders et al., 2007). To ensure the reliability of this study the researcher provided a detailed description of the limitations and the profile of research participants used in this study so that should anyone need to repeat the study, she/ he will be aware of the conditions that encompasses this study.

3.6.2 Validity

Validity of a study in research is affirmed once the investigation instruments process precisely what it planned to determine. Flick (2009) makes it clear that in a qualitative study, validity is used to ask the question by using certain methods and investigates what is really meant to be investigated. Flick (2009) states that the term validity describes whether the measure used accurately represents the concepts it is meant to measure. Validity in this study was proven because the research interview schedule was submitted to the supervisor for approval. In addition to that,

the participants were chosen due to their experience and knowledgeable expertise in the subject area and the interview sessions in both the one-on-one and focus group interviews were tape-recorded. A tape recorder was kept by the researcher to ensure that he was reminded of the true answers as provided by the research participants.

3.7 ETHICAL CONSIDERATIONS

Ethical considerations were maintained throughout the study. Three main research ethical considerations were adhered to when conducting interviews namely; informed consent, confidentiality and the right to privacy.

3.7.1 Informed consent

Before embarking on this study the researcher asked for permission from the University of South Africa for approval. The researcher also asked for permission from the Namibian Traffic department authority to allow access to conduct research within their jurisdiction. As such, the research process was guided by the terms and conditions as provided in the Unisa Ethical policy (2007).

According to Saunders et al. (2007), informed consent refers to the importance of informing respondents of the nature of the research study. In this study, research participants also received a written letter requesting their voluntary consent to participate in this study. This letter was detailing the nature of the research being conducted, that their involvement would be voluntary and that they have the right to discontinue in the research study should they feel uncomfortable to proceed. Every respondent signed a consent form before assuming with the interview as a way of showing that they voluntarily agree to participate and they understand the nature of the study. All the research participants who were interviewed had given their consent for the interview and the purpose of the study was fully articulated emphasizing the issue of no accrued benefits for participating in the study.

3.7.2 Confidentiality

The researcher ensured that the data obtained from the respondents was treated with utmost confidentiality. The researcher also composed, scrutinized and provided facts and opinion with no negotiation of the personality of the participants. The true identities of the participants would not be used instead the researcher had labelled the participant with quotes like participant 1, 2, 3, and so on. The researcher had ensured that the data obtained from the respondents is treated with utmost confidence and is kept safe in a computer that was locked with a password and hardcopy transcripts were destroyed after use. The participants were also guaranteed that the study would only be utilized for academic purposes and any other use of the data would not be done without their explicit consent. In this way, the meeting of closed doors was held as a way to defend the confidentiality of every individuals, to make mutual faith and relationship with study participants, and to keep moral values and the honesty of the investigation procedure.

3.7.3 Right to privacy

The privacy of the respondents was protected during the research by ensuring safe storage of the research data and the use of coding during analysis. The participants were guaranteed that any reports they gave should be held with strict confidence. This study protected the respondent's privacy so that not everyone is capable to attach his/her answer and any other facts that recognize him/her. This is why quotes such as Participant 1, 2 and 3 have been used during the presentation of data. Only the researcher and his supervisor had access to information that identified the respondents to carry out this research study. The results were reported in aggregate form only, and could not be identified individually. The participants were informed that the research data would be kept for the length of the study (five years) and after that time it would be destroyed.

3.8 SUMMARY

The chapter discussed how the respondents were selected and the specific type of research instruments used during data collection and techniques followed during data analysis. The main purpose of this chapter was to inform the reader on how well the research methodology was employed in this study and how ethical, valid and reliable the study is.

CHAPTER 4: RESEARCH FINDINGS AND DATA ANALYSIS

4.1 INTRODUCTION

The study examined strategies used by traffic officials to reduce road accidents in Windhoek District, Namibia. As stated in the preceding chapter, the study relied on the use of primary data collected from traffic officials working in the Traffic Department in the Namibian Police and those working in Windhoek City Police, Traffic unit. The research participants were purposively selected for this study based on their extensive experience in the traffic road management. The total number of research participants was thirty (30); this included the Traffic Officials in higher ranks and those at lower ranks from the Namibian Police and Windhoek City Police.

4.2. PROFILE OF THE RESEARCH PARTICIPANTS

In order to have a clear understanding of the background of the participants to this study, their age, sex, rank and working experience were accounted for which is summarized as follows:

4.2.1 Age distribution of the participants

The following Table 4.1 and Figure 4.1 represent the age of the participants who were considered relevant for the purpose of this study.

Table 4.1 Respondents by age

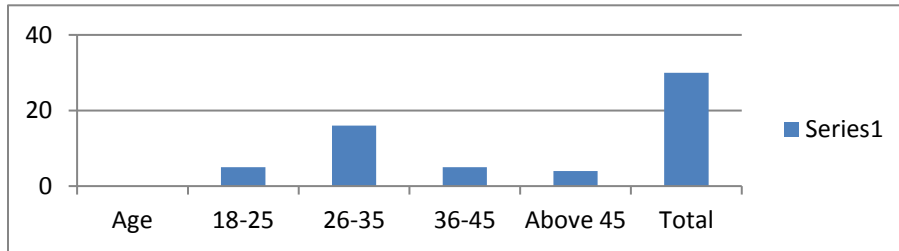
Age	18-25	26-35	36-45	Above 45	Total
Number of participants	5	16	5	4	30

Source: Author's Field Survey

The highest number of participants by age group as shown in Table 4.1 and Figure 4.1 were from the 25-35 age group. They occupy the highest number at 16 percent of traffic officers interviewed;

followed by age group of 18-25 and 36-45 that occupied 5 percent each while the last group of above age of 45 occupied 4 percent. In this study most of the research participants were between the ages of 26 -35.

Figure 4.1: Respondents by age



Source: Author’s Field Survey

4.2.2 Distribution Participants by sex

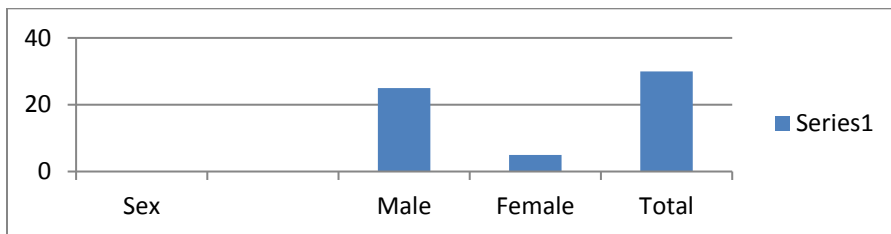
Men participated more in the research study compared to female respondents. This is because traffic department in Windhoek has a higher number of men than women.

Table 4.2 Respondents by Sex

Sex	Male	Female	Total
Participants	25	5	

Source: Author’s Field Survey

Figure 4.2 Respondents by sex



Source: Author’s Field Survey

4.2.3 Respondents by rank

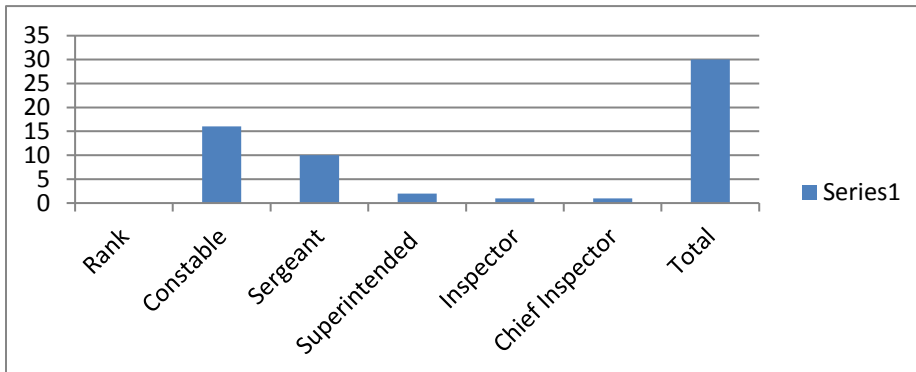
It could be seen from Figure 4.3 that the highest rank attained by City Police is superintended with majority 68 percent of them having rank of Constable. Twenty-six (26) percent have a rank as Sergeant, 4 percent have rank as superintendent, 1 percent has rank as of Inspector, and again 1 percent has rank as of Chief Inspector.

Table 4.3 Participants by rank

Rank	Constable	Sergeant	Superintended	Inspector	Chief Inspector	Total
Participants	16	10	2	1	1	30

Source: Author's Field Survey

4.3 Respondents by rank



Source: Author's Field Survey

4.2.4 Participants by working experiences

The participants were asked to indicate their working experiences as shown below:

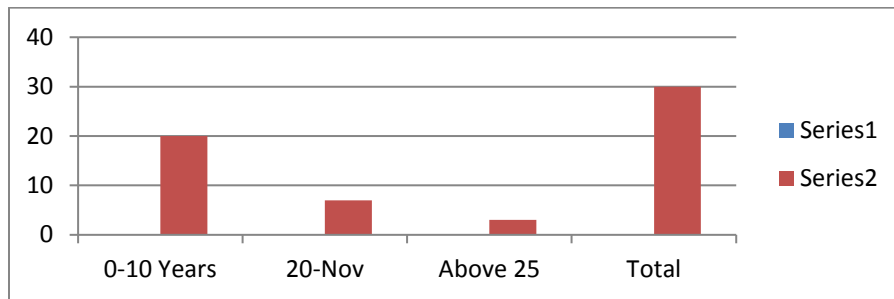
Table 4.4: Participants by working experiences

Working experiences	0-10 Years	11-20 Years	Above 25 Years	Total
	20	7	3	30

Source: Author's Field Survey

In this study, about 82 per cent of the respondents have 5-10 years working experience as compared to 13 per cent of the respondents with 11-20 years and 5 per cent have above 25 years' experience.

Figure 4.4 Participants Working experiences



Source: Author's Field Survey

4.3. RESEARCH FINDINGS

The findings of this study revealed that Traffic Officials in the Windhoek Constituency are guided by the following legislations dedicated to road safety in Namibia:

- Road Traffic and Transport Amendment Act (22 of 1999)
- Namibian Police Amendment Act (19 of 1990)
- Windhoek Municipal By Laws
- Local Authorities Act (24 of 2000)
- Namibian Criminal Procedure Act (13 of 2010)

Windhoek is like other Districts in Namibia and has a Road Safety Committee whose mandate is to account for Road Safety. The above four legislations guide the operations of the committee. However, the committee ensures that Government agencies and institutions are provided with conducive environment to cooperate and work in harmony to ensure that road safety strategies are successfully implemented.

4.3.1 STRATEGIES ADOPTED BY THE LOCAL AUTHORITIES IN WINDHOEK

Based on the interviews made among the road Traffic Officials who are also component of the Road Safety working group in Windhoek District the subsequent information outlines the strategies used to provide road safety:

4.3.1.1 Increased Budget

The City of Windhoek has increased the amount of the financial plan relating to road traffic safety in Windhoek District from three percent (3%) to three comma eight percent (3.8%) of the entire financial plan of the District. The financial plan implemented as from 2017, although this financial plan percentage is inadequate, hard work has been completed to create road traffic safety actions as one of the main concerns in the financial plan contribution and circulation. This has made it possible for the constituency to buy twelve (12) fix speed cameras along b1 and b2 main roads; twelve (12) mobile speed cameras to be utilised by Traffic officers on national roads; increased roadblock and sobriety checkpoints; random breath testing to enable the traffic officers to stop motorist drivers at roadblock for licence inspection including sobriety checks. These created awareness among drivers that random breath testing (RBT) check points might be encountered at any time and in any location. These initiatives are sustained by Bjornskau & Gafni (2000) who point out that the three major aspects persuaded the prevention efficiency include: speed cameras, roadblock and sobriety checkpoints; and random breath testing.

4.3.1.2 Construction of humps

The study shows that, the City of Windhoek has created 200 humps on a main roads in the Windhoek District to limit motor vehicle speed in vicinity anywhere children are walking near schools and education institutions; the building was completed in partnership with the society. The society recognized the entire areas that there is great rate of recurrence of citizens passing the road; and particularly in areas close to where there are education institutions or marketplaces and the City of Windhoek financed the building of the humps.

4.3.1.3 Regular repair and Replacement of the Road Traffic signs

Participant 1 stated that *“the Local Authority has repaired 50 poll signs, 20 zebra cross marks and replaced 50 road signs including the distance poll mark in a period between 2016 to 2017”*, He further stated that, *“plate polls are very expensive to repair and the budget allocated is low. The construction and maintenance of the high way road is fundamentally the responsibility of the central government and not local authority, the decision to repair and replace road signs is just a step and decision within local district authority towards road safety in the district.”*

4.3.1.4 Organising Road Traffic Safety Week campaign

Participant 2 stated that *‘the City of Windhoek in partnership with Namibian Police Traffic Division and Road Authority makes and carry out Road Protection Periodical Operation each year to highlight road traffic protection alertness between the communities. The groundwork of actions to be prepared and tackle on the Road Protection Periodical Operation, Windhoek district engage public involvement on classifying and choosing what must be concentrated on and what have to be the main actions to be convened on the upcoming year. Public crowds similar to adolescence, female and learners are engaged in crafted theatre for improvement connecting to road safety, by appraising then debating diverse matters on road safety’*

4.3.1.5 Education

Participant 3 also stated that *‘the City of Windhoek in partnership with Namibia Police Force (Nampol), Road Authority and the Namibia Broad Casting Corporation (NBC) organised and broadcasted the news and awareness regarding road safety strategies. ‘the content of the transmit comprised of road and rail network and their significance, correct utilize of road infrastructures, accountability and constitutional rights of drivers, riding bike and tricycle, road traffic crashes, emergency supporters in road crashes circumstances, strengthening off-road safety policy and rules, educating people to drive properly and to meet license requirements. That was best steps in the direction of road safety perspective in Windhoek Region about road safety messages in NBC radio’*.

- **Road Safety Messages**

Most of the participants believed that road safety communication has to be done in a straightforward and understandable manner. A small number of participants also believed that communication was not enough; for instance, communication is not widespread enough and therefore missing out significant facts that drivers can relate to. Another concern is that some of the drivers are illiterate, and/ or cannot read English. Additionally, participants believed that traffic summons for infringement must be greater than before, and regular lawbreakers should serve up a confinement period. Various participants supported that those drivers who are caught drinking and driving; their cars must be impounded for a specific time, and irresponsible drivers must be reprimanded with hard labour.

Some participants articulated that much was being done to create awareness on road safety, however the public has a tendency to disregard the messages. The participants, also were of the opinion that law enforcement groups also failed to pursue the rules and policies of the roads, while also placing blame on public members for disregard of the traffic laws and regulations. Participant 3 specified that *“Windhoek is highly populated town compared to the other small towns in the Regions and vehicles population is in high volume compared to other towns, which over stretches the number of available traffic personnel”*.

- **Road Safety Messages and Campaigns**

Participants believed that road safety campaigns and traffic operations were enough and to a large degree very effective during the Festive season and school holidays. However, such actions must be sustained throughout the entire year. Participants furthermore recommended that road safety communication on TV and radios must be transmitted from 19h00, because many students have afternoon programme and schoolwork.

- **Effectiveness of Road Safety Messages and Campaigns**

Participants specified that road safety operation have improved the way the public respects and adheres to the regulations of traffic laws. For example, police traffic officials should regularly appear on national TV and Radio. Such appearances can create a sustainable

dialogue and awareness that can effectively influence the public's awareness of the importance of road safety. During such media appearances, traffic officials can provide statistics on road accidents, injuries, fatalities by region and so on. Such statistics can serve as a sober reminder to the public as to the importance of respecting and adhering to the rules of the road.

- **Target Audience of Road Safety Messages and Campaigns**

The participants articulated that it is necessary to focus on communities staying in remote areas, as they are often not acquainted with the rules and regulations of the traffic laws. Moreover, the youth should be actively targeted for road safety campaigns as they are increasingly becoming drivers and are unfortunately more prone to accidents. Various participants assured that the operation (*Don't Drink and Drive*) was not applicable to them for the reason that they did not have any vehicles, so they were not involved in drinking and driving. Conversely, a number of participants deviated and argue that the communication was applicable however, since they would as well be drivers in future. The sooner the communication known, then the better. Some participants also suggested that road safety should be initiated as an area under discussion in educational institutions, from secondary school - onwards; to teach the youth on the subject of road safety.

4.3.2 SAFETY STRATEGIES ADOPTED BY TRAFFIC OFFICIALS

The following measures have been prioritized by the traffic officials as the means to reduce road traffic accidents:

4.3.2.1 Car Inspection

The participants pointed out that they are currently encouraged to do regular car inspection on the road and test driver's sobriety in order to reduce road accident. Participant no 1 also stated that, *"by conducting frequent inspection of motor vehicles to ascertain their roadworthiness in the district enables them to restrict defective vehicles being in use without proper service"*. The Regional Traffic Commander also mentioned that, *"there is no mandatory vehicle inspection in Namibia and the motor vehicle owners lack the culture of repairing their vehicles, hence, this*

causes such vehicles to be part of the main causes of traffic road accidents in Windhoek District. The current vehicle inspection accepted by road Traffic Officials is principally a visual examination due to lack of vehicle inspection equipment. As a result, road Traffic Officials only check tires, brakes, steering system, lightning system, driving license, and the availability of safe equipment like seatbelt at least in front seats and restricting open cars like pick-up to carry passengers in the district”.

4.3.2.2 Highway Patrols, Arrest and Notice of fines

Alternative safety measure taken by traffic officials is to arrest and provide fine notices to drivers who are in contravention with the traffic laws and other related by-laws in the constituency. Regular visibility by police traffic officials are completed in town vicinity also on highways to secure directly the persons on foot and kids passing the freeway.

4.3.2.3 Installation of speed control in state vehicles

The traffic officials furthermore confirm and sustain usual check-up of compulsory appropriateness of speed control devices to every community facility of motor vehicle. To ensure all public vehicles are not abused and they adhere to the road rules. There are many motor vehicles garages in Windhoek approved to install speed control to public vehicles and provide certificates to all vehicles that are equipped with speed control.

4.3.2. 4 Cooperation among stakeholders

In highlighting the activities undertaken to fight the road traffic crashes in Windhoek area, the Provincial Traffic chief officer stated that road safety is a fundamental right and as well bury corrective procedure that require organization collaboration in Namibia. It is during such collaboration that road safety strategies are able to enhance predominantly by identifying the accident hot spots and by encouraging the community members to obtain accountability plus answerability and contribute on road safety issues therefore to fight traffic road carnage in Windhoek District. Poor participation by public members has been reported by most of the participants as the issue of concern.

At hand are some other associations which execute road safety actions in Windhoek Region, and these associations are operational dispense with limited administration establishment, for instance The Namibia Road Authority (NRA). The Namibia Road Authority (NRA), is affiliated with the Ministry of Works and Transport and was established under Act 22 of 1999 of Road Traffic and Transport as Amended, stimulating with the accountability of constructing quality roads in Namibia. NRA is accountable for the calendar day administration of the national infrastructure system. Their major purposes comprise the preservation and progress of the principal road set-up to sustain the financially viable and social- improvement of Namibia.

NRA is accountable for the Road transportation schemes, which consist of three substantial mechanisms: the communities on foot (pedestrians), commuters, drivers, as well as the infrastructure which contain their urgent surroundings. NRA is an entity of the Namibian state organization which is undertaking various road safety actions on Windhoek public road for the upgrading of road safety throughout community alertness operations. NRA considers that, motorway consumers are a crucial component in the transportation scheme; their behaviour must be dealt with if their mandates and objectives are to be achieved. Solution aspects are a fundamental consideration of the traffic scheme, and capability to be acquainted with and keep away from risk and put into effect secure conduct. Understanding the traffic operations and how to conduct yourself in movement of vehicles can first and foremost be enhanced in the course of improved learning.

NRA has undertaken security promotion campaign strategies within Windhoek District to attain diverse endeavour and purpose. The intent of such exposure strategies is to amend the commuter behaviour, approach or understanding and to instruct road safety in the region. In term of participants, group campaigns within Windhoek area is anticipated to attain the following:

- Improved alertness of traffic accidents;
- elevate point of message to the society concerning traffic protection;
- Adjust commuter behaviours and value traffic set of laws and policy; and
- To incorporate limited administration power in arrangement and carrying out of road traffic method in the region.

4.4 CHALLENGES FACED BY TRAFFIC OFFICIALS IN REDUCING ROAD ACCIDENTS

4.4.1 Enforcement of Alcohol Restrictions on motorists

The study found that alcohol restrictions is a challenge to the traffic officials because in Namibia the alcohol limit is 0, 37 mg per 1000 ml. As such, it is difficult to charge a driver who is found under the alcohol limit even though he/she was driving while under the influence of alcohol.

Some participants pointed out that in order to punish traffic violations in Windhoek, many traffic officials mostly concentrate on giving fines, which are considered to be quite small. Every respondent believe that this setback might be dealt with by establishing strict laws. Participant no 2 contended that, *“the current authority for law enforcement is not satisfactory and it is difficult for us to punish traffic offences. Since revoking a driving license is a very difficult process, we prefer to not do that”*. Another participant no 3 stated that, *“The current station-based traffic official’ monitoring guidelines for road traffic management is out of date and old fashioned; the laws should provide greater authority for Traffic Officials. It is necessary to install more speed cameras for traffic monitoring.”*

4.4.2 Speed enforcement

The study found that speed has been well known as a contributory aspect in many fatal and serious injury road traffic accidents in Windhoek. And despite the roadblocks and speed humps in the area, over speeding by motorists remains a problems.

4.4.3 Limited Traffic Officials to do patrols

The study found that the visibility of the traffic officials motivates drivers to modify their behaviour. Nonetheless, due to limited number of traffic officials in Windhoek to do daily patrols on every highway, observable enforcement plans are regularly negotiated by drivers; who merely change their attitude at the site of enforcement action. Then as soon as they pass the traffic police

spot, they go back to their negligence driving behaviour. This study concurs with the study by Liping and Owusu- Afriyie (2014) that there is a serious shortage of traffic officials in Namibia and that led to motorists escaping the punishment for reckless and negligent driving.

4.4.4 Traffic lights Cameras

The utilization of traffic automaton cameras has been established to be a more expensive safety strategy for reducing and stopping road crashes. Machine and Hagenzieker, (1991) support this finding by arguing that the use of speed cameras is important for improving restrictions on the speed limit by motorists. Participant no 4 stressed that *“the use of red-light cameras has problem of low detection rates, the perpetuity of on-site enforcement treatments and the length of time taken to notify drivers that an offence has been committed. These problems can reduce the effectiveness of red-light camera operations.”*

4.4.5 Roadblock, random Breath testing and Sobriety Checkpoints

The study established that traffic officials have power to conduct breathe analysis merely if there are practical reasons to believe that the driver’ act is affected by alcohol. The general reasons for doubt are rough driving conduct, association in crashes and the commission of road traffic infringement. The motive for examining a driver, is due to suspicion of being under the influence of alcohol.

4.4.6 Improved road Infrastructure

According to every respondents, there are many challenges in relation to the transportation system and its safety relates to the use of one way road, insufficient road lighting, not having particular roads for low-speed motor vehicles, a lack of sufficient roadside security, inadequate traffic signs on the infrastructure, and insufficient road protection, especially in accident prone areas. Furthermore, there are not enough safe routes for pedestrians and cyclists, and inappropriateness of high and low-speed motor vehicles were additional confrontational. As articulated by respondents, it is necessary to have increased traffic signs, efficient road maintenance, installation of speed bump in greatly inhabited areas and crash barrier in high-risk spots. These will assist to decrease crashes at road accident hot spots in equally the short and the long term. In addition,

many respondents indicated out that improved town infrastructure including dividing roads up into diverse traffic road, make them broad, and setting aside exceptional lanes for urgent situation services would also facilitate matters. Respondents disputed that there are more of road accident-prone areas on the roads all the way through the country. Traffic officials have made significant efforts to enhance road safety; nevertheless, due to poor condition of motor vehicle and road safety plans there are still a high number of crashes, injuries and recorded fatalities on Namibian roads.

4.4.7 Uncoordinated road safety activities

Many respondents narrated the concern of insufficient communiqué and harmonization among stakeholders in relation to road safety actions plan, which was one of the significant challenges to crime deterrence. As indicated before, there are presently some associations running in the road safety field, but they are badly harmonized. Consequently, there is no particular group with overall power and accountability to make resolution and organize road safety actions. Furthermore, respondents suggested that there is no inclusive information method to record motoring offences in Windhoek District. The lack of integrated road safety programmes or activities were noted by Vasconcellos (2011) as an issue of concern for an effective road safety.

The study found that the incorporation of traffic law enforcement actions plan into one harmonized tactic is one strategy capable of progress. This should include roadblock, camera surveillance, and alcohol use by motor vehicle drivers, speeding offences, seat belt use by road users and the use of head covering by moped riders. This also should include speed limit law enforcement; red robot traffic signal law enforcement; high utilize motor vehicle traffic lane enforcement and heavy motor vehicle enforcement.

4.4.8 Uncooperative Car accident witnesses

Participant 2: Indicated that *“it is a challenge to get information from the scene of accident because people who witnessed the accident are often scared to come forward with information and help the police to identify the cause of the accident.”*

Individual respondents agree that the regular danger aspect which lead to apprehend of the motorists in Windhoek District include; congestion of passengers, driving while under the influence of alcohol, driving over speeding limit, driving without wearing seatbelts, driving with no driving license, driving a vehicle which is not roadworthy vehicles, driving vehicles with no insurance, and overcapacity in heavy vehicles. By the same token they also point out that, there is a requirement to enlarge the main road and revamp it as a result, traffic partition in the main road is immediately required. Currently, the freeway is constricted, and it contains just one line, this circumstance cannot permit overtaking of other vehicle.

4.4.9 Corruption and negligence among traffic officials

Bribery, inconsistency and bad administration are among the actions that contribute to continued reckless driving by motorists. This is because many motorists know that they can avoid arrest by paying bribes to traffic officials. Participant no 5 mentioned that “some traffic officials give priority to corruption and tips other than following the traffic laws and regulations”. Other participants argue that in most cases traffic officials have a tendency to discuss explicitly with the motorists regarding an option by the way to keep away from paying the fine. Participant no 6 adds that “*Windhoek highway is identified as one of the areas where most of the traffic officials earn illegal income through corruption from drivers due to existing high volume of vehicles from Windhoek to other up-country regions and neighbouring countries*”.

4.5 THE ROOT CAUSES OF ROAD ACCIDENTS IN WINDHOEK

4.5.1 Driver attitude

According to participant 4, “*the bad behaviour of the drivers contribute to more traffic road accidents in Windhoek because they are driving while under the influence of alcohol, driving recklessly and negligently. Other causes include not obeying road signals and using incorrect methods of overtaking, u-turning and parking*”. Most of the participants agree that traffic road crashes are rooted by irresponsible driving which consist of alcohol; infringement of traffic

indication; driving long distance; incorrect driving at junctions and crossroads; and disobedience of pedestrians.

The study found that there is evidence to advocate that there is a need to enhance traffic penalties, as a measure to encourage road drivers to be obedient of the traffic road rules and reduce accidents. The respondents in the research understood that the utmost achievement would be attained by altering motorists' mindset by the way of sensitizing, education promotion and the additional demanding enforcement of rules.

Moreover, obedience strategy merely takes away consequence if it can be constant. A main concern is shortage of resources (such as trained traffic officials, adequate traffic police cars, speed cameras equipment and alcohol testing devices) which made it problematic for traffic law enforcement to give the skill and tools that is needed to create enforcement competent. The type of risk activities, when mentioned on by respondents included: insufficient road safety awareness and traffic law; logic of necessity between mainly motorists; not enough drivers' education; inadequate law enforcement of traffic and transportation rules, which collectively create dangerous driving circumstances.

This study found that there is a need for traffic authorities to educate motorists through road safety awareness campaigns that are introduced, such as the protected method to road safety that was adopted on 2011 by United Nations (UN). This approach was aimed at shifting the mindset around road safety from a person-at-fault perspective to the more realistic acknowledgement that all road users should inevitably make mistakes on the road.

4.5.2 Contravening Traffic rules

The study found that as a road traffic transgression is identified there is a scope of probable punishment presented to traffic officials this include fines, suspension of driver's license and oral or on paper caution. However, many motorists ignore these traffic rules and eventually get involved in road accidents.

4.6 PROPOSED STRATEGIES TO REDUCE ROAD ACCIDENTS IN WINDHOEK

The research participants argue that the following strategies can reduce the problem of road accidents in Windhoek area, namely:

4.6.1 Environment and Road network

It was recognized in the dialogue that one of the major hazard aspects linked to the effect of road traffic crashes in Windhoek area is the technological factor of the freeway structure in Windhoek area. For example, roads are too narrow to accommodate the high volume of vehicles since the road was constructed many years ago when there were no many vehicles.

The transportation of passengers in Windhoek has become a major concern for example; taxis drop passengers anywhere on the roadways simply because there were no taxi ranks facilities. Therefore, the taxi drivers use any provision portions alongside the road to pull off their taxis whenever they want to offload passengers. The Buses, Midi-buses and Mini-buses were also having a problem of bus terminals facilities where they can offload their passengers for long distance. The potholes and cracks on the road surface within Windhoek District are also issues of concern.

This finding was confirmed by the Regional Traffic Commander who mentioned that Windhoek highway road was not intended to hold the character and behaviour of motorists, motor vehicles, and traffic situation that currently exist in the district. Interviews with Traffic officials identified that not having divided traffic lanes, lack of illustration direction, lack of arrangement principles and inadequately restricted and unrestrained crossroads and right of entry to the road are the major danger aspects concerning to traffic road crashes within Windhoek area. Correspondingly, the majority of participants point out that poor traffic divided lanes accounts for accident hazards in Windhoek District. Again, the combining of two aspects high-speed motor vehicle traffic and low-speed pedestrian traffic create accidents inescapable particularly in vicinity of extreme pedestrian traffic similar to business spots are in high threat.

Concerning to the dialogue made with the City Police Traffic Officials in Windhoek District, officials point out that, the building of Windhoek main road did not engage people from specific Town to take part, particularly on road safety actions. The highway designers and building engineers lack of officially authorized and official responsibility to be accountable for the road traffic safety effect on their work as road construction supplier.

4.6.2 Human Behaviour elements

It was acknowledged via all respondents that behaviour of motorists in Windhoek District (pedestrians, commuters and drivers), needs to be improved, to decrease road accidents. A majority of participants point out that driving whilst using mobile device is one of the human behavioural aspects affecting the causes of traffic road accidents in Windhoek area. Throughout the dialogue, it was offered that mobile phones by drivers and pedestrians is a major cause of road crashes

One of the traffic officials, Participant no 2 who was also interrogated in this research points out that, *“some drivers possess driving license before they knew how to operate a vehicle, and Windhoek freeway is frequently used to train learners drivers unofficially outside of the town, hence there is an accessible hazard of being implicated in traffic road crashes within Windhoek area”*.

It has furthermore been recognized by the traffic officials that pedestrians with visual disabilities walking without guides in Windhoek District contribute to road accidents by causing misunderstanding on the motorists (Wilde, 2002). It is very familiar to persons on foot passing the road without taking appropriate concentration to the traffic flow in Windhoek, and this illustrate that their attitude in using the public road is as well one of the danger aspects adding to traffic road crashes.

4.6.3 Vehicle Factor elements

It was remarked in the dialogue with the traffic officials from the Ministry of Safety and Security (MSS) that the number of motor vehicles on the road has increased significantly, and the Windhoek freeway infrastructure is still unchanged. Nevertheless, some motor vehicles crossing on the public roads are in poor situation of repair; because many are brought in from outside countries to the country as second-hand vehicles become old varying from three years to twenty-six years. A large amount of motor vehicles brought in Namibia is old to the level that several of them are not roadworthy. Due to the interviews completed with the traffic officials on the motor vehicle assessment carried by traffic officials being predominantly an illustration inspection, which is insufficient to capture the current circumstances. It is thus, very important that methodical road worthy certification ought to be initiated in Namibia to eradicate the defective motor vehicle aspect and therefore dropping traffic road crashes.

4.7 SUMMARY

The conclusion has acknowledged many aspects that contributed to traffic road crashes within Windhoek area. It shows that at hand the security strategies initiatives carried out in the district to manage and avoid traffic road crashes are more theoretical than practically implemented. Traffic officials' commitment is imperative to the success of road traffic protection initiatives the same as the reduction of traffic road accidents in the district. However, most participants interviewed criticised and mentioned that, vehicle inspection by traffic officials is not technical but visual. This means more technical support is required to enable the traffic officials to do their job properly.

CHAPTER 5: SUMMARY, RECOMMENDATIONS AND CONCLUSION

5.1 INTRODUCTION

The focus of this section is to provide an overview of what this study was about and to suggest the recommendation resulting from the findings of this study as well as to make a finale. The purpose of this research was to investigate the challenges facing traffic officials in reducing road accidents in Windhoek. After analysing the reports and literature on road accidents in Namibia it was shown that most of the road accidents in Namibia were attributed to factors such as over speeding, fatigue, driving while intoxicated and poor road conditions. Furthermore, the Motor Vehicle Accident Report (2016) of Namibia indicated that the main contributory factors to crashes involving pedestrians in the country included lack of pedestrians' crossings on the road, drivers and pedestrian's negligence, un-road worthy vehicles, and lack of drivers and pedestrians knowledge on the road rules.

To accomplish the intention of this research, the researcher selected the study participants based on their work experience as traffic officials dealing with matters related to road traffic accidents. The total number of research participants was thirty (30) including the traffic officials in higher ranks and those at lower ranks from the Namibian Police and Windhoek City Police.

This study was qualitative in nature, as such the researcher adopted semi- structured one-on -one interviews with some of the key informants and also carried out the focus group interviews with another group of participants. The reason for using semi-structured interviews in the study was to allow the research participants (in both one-on-one and focus group interviews) to freely add information which they deemed relevant to the research topic.

The following research questions were asked from the research participants in order to achieve the research aim.

1. What strategies does the traffic official use to reduce road accidents in Windhoek?
2. What are the root sources of road carnage in Windhoek?

3. Which of the challenges are encountered by the traffic officials in attempt to reduce road accidents?
4. What could be done to reduce road accidents in Windhoek?

Upon collecting the research data, the researcher began with the data analysis process by transcribing each recorded interview session word-for-word, read through all the transcriptions and started identifying the similarities and differences among the transcriptions. Data was analysed in accordance with the thematic method. This method assisted the researcher in reducing data into themes and categories. The use of thematic analysis allowed the researcher to reduce and manage large volumes of data without losing its true meaning. The following themes were identified in this study: the root causes of road accidents, the challenges facing traffic officials as well as the roles the traffic officials play on daily basis in order to reduce road accidents on the road. Literature was used to support and find integration and correspondence between the responses of the participants and the recent available literature on the research problem. The recorded data was transcribed verbatim, which simplified the production of themes in the process of data reduction. Literature also was used to support and find integration and correspondence between the responses of the participants and the recent available literature on the research problem.

The section below outlines the review of the study result.

5.2 SUMMARY OF THE STUDY

5.2.1 SAFETY STRATEGIES USED TO REDUCE ROAD ACCIDENT IN WINDHOEK

The study revealed that the traffic officials in Windhoek do road patrols and roadblocks as a way for reducing road accidents but due to limited capacity of staff members, they are unable to conduct these roadblocks and patrol on regular basis. On the other side, the local authority contributed by increasing the amount of the financial plan associated to road traffic safety in Windhoek region from 2% to 2.8% of the entire financial plan of the region. That was successful from 2017, although this budget percentage is not sufficient to cover all the requirements for road repairs, tough work was done to create road traffic safety actions as one of the first responsibility in the financial plan distribution. As a result, the City of Windhoek did well to erect 200 humps on main road in Windhoek Region to manage cars fast movement in the vicinity where mostly kids are passing the motorway to schools. The City of Windhoek has repaired 50 poll signs, 20 animal cross marks and replaced 50 road symbols as well as the long way pole spot during 2016 / 2017.

The study revealed that the City of Windhoek in Khomas Region in partnership with Namibia Police Force (Nampol), Road Authority and the Namibia Broad Casting Corporation (NBC) organised and broadcasted the data and understanding about road safety strategies. The broadcast covered issues such as the meaning, types and importance of safety signs, proper use of roads, responsibility and rights of road users, riding bicycle and tricycle, road traffic accidents, first aid in road accident situation, reinforcement of road safety rules and regulations, learning to drive and licensing requirements. This initiative was one of the best steps towards educating people of road safety measure, however the message was broadcasted only in one language which is English and whereas many motorists are not fluent in speaking and understanding the English language.

5.2.2 THE ROOT CAUSES OF ROAD ACCIDENTS IN WINDHOEK

The findings show that the root sources of road carnage included the dire attitude of the drivers which contributes to most of the traffic road accidents in Windhoek (i.e. Drunk and driving, reckless and negligent driving). Unroadworthy vehicles are also a cause of concern in Windhoek; the study found that the number of vehicle population has increased significantly in Windhoek, while the road construction still not yet change. On the other hand, most of the vehicles passing on the roads are in old and unroadworthy states. As a result, maintenance cost on these vehicles is always higher, leading to mishandling of most vehicles on our roads. This difficult has been attributed to the shortage of systematic road worthy certification and inadequate law enforcement.

The escalation of the number of cars resulted into a consistent intensification of traffic road carnage causing a loss of life in Windhoek Region.

5.2.3 CHALLENGES ENCOUNTERED BY THE TRAFFIC OFFICIALS IN ATTEMPT TO REDUCE ROAD ACCIDENTS

5.2.3.1 Enforcement of Alcohol Restrictions on motorists

The study found that traffic law enforcement of alcohol restrictions among motorists is a cause of adapting driver's attitude and preventing road accidents from occurring due to alcohol consumption is challenging.

5.2.3.2 Speed enforcements

It was also found that over speeding of vehicles was one of the contributing aspect on many fatality and serious injury during crashes. Nevertheless, decreasing the degree of fast-moving vehicles has confirmed to be a problematic encounter and confidence characteristically remained positioned on regulation and implementation to prevent the percentage of reckless motorist via fines.

5.2.3.3 Limited Traffic Officials to do patrols

The study found that the visibility of law enforcement officials motivates drivers to modify their behaviour. Conversely, due to limited number of traffic officials in Windhoek District to do daily patrols on every highway.

5.2.3.4 Traffic Lights cameras

The utilization of traffic light (robot) speed cameras has been established to be a cost-efficient security strategy for deduction and stopping accidents at controlled intersections. Nevertheless, the study found that the utilize of red-light cameras has problem of weak discovering tariff, the ceaseless of on-site enforcement treatments and the long-time taken to inform the drivers that an

transgression has been devoted. These challenges can lessen the efficiency of red-light camera development.

5.2.3.5 Roadblock plus Sobriety checkpoints

The study found that traffic officials have the power to breathe analysis only when there are realistic grounds to believe that the driving commitment of a driver is affected by alcohol. The general grounds for doubting are rough driving conduct, participation in road crash and the doing of a traffic contravention. Challenge here is that if the ground to suspect that the motorist is impaired by the alcohol are not proved through the blood tests, the suspect may act against such claim in court and there is no legal obligation to perform any roadside sobriety test including walking heel to toe, one leg stand or other balance tests or blowing into preliminary alcohol screening devices within Namibia.

However, checkpoint method diverge from those relying exclusively on driving signs as they tolerate traffic officials to create straight speak to with a driver despite of whether or not symbols of alcohol impairment are there (Krug, 2002). Any types of enforcement methodology can also enhance the danger of apprehension, and consequently the intensity of anticipation, because drivers may notice that they may perhaps be blocked at any point in time and tartan for alcohol impairment.

The efficiency of roadblock and sobriety checkpoint measures has also been doubted due to the fact that these procedures are still based on the biased decision of police officers to decide if a driver is impaired by alcohol, and whether a breathing examination is reasonable (Krug, 2002).

5.2.3.6 Infrastructure

The study found that many of the challenges in items of the transportation arrangement and its security appear, predominantly connecting to the one-way streets, insufficient road lighting, insufficient roadside security, inadequate traffic signs on the roads, a deprived generally intensity of road repairs and revamp as well as a huge amount of crashes on blind spots.

5.2.3.7 Uncoordinated road safety activities

The study found that there is an insufficient communiqué and harmonization among institutions in regarding to road safety measures, which was one of the main challenges to transgression deterrence. There are presently numerous stakeholders operating in the road safety initiatives but they are weakly harmonized.

5.2.3.8 Uncooperative Car Accidents witnesses

The study found that it is challenging to get information from the scene of accident because people who witnessed the accident are often scared to come forward with information and help the traffic officials to identify the cause of the accident.

5.3 RECOMMENDATIONS

For the purpose to reducing traffic road accidents in Khomas Region, Windhoek the researcher will advocate the following strategies to remedy the problem:

5.3.1 Multilingual road safety educational programmes

It is recommended that there is a need for multilingual road safety programmes. The messages should be interpreted into different languages to accommodate people who do not comprehend English. For example, Damara, Nama, Herero, Ovambo, Afrikaans, Kavango, Tswana, and Lozi languages should be used for successful communication and promotion of Road Safety. This will encourage the public to follow the regulations of the road.

5.3.2 Clear standards for car inspection

It is recommended that there is a need for clear standard for car inspection to include modern mobile vehicle inspection equipment to test brake, headlight, smoke and gas, wheel play detector, and wheel alignment. Thus, with regard to the vehicle; special attention should be given to the vehicle's composition, how old, scientific circumstances and protection gear such as seat belts in the vehicles. The above-mentioned standard will assist to categorize relationship between various roots and hazard aspect and deterrence mode of traffic road carnage such as physical environment

and road system. This will also help indulgent the key causative factors of road traffic crashes such as, driving style, risk factor, operating a motor vehicle while intoxicated by drugs or especial alcohol (Wilkins, Hayward & Johnson, (2000:80); Jorgensen & Abane 1999; Muhlrud & Lassarre, (2005:98)).

5.3.3 Toll free lines to report corrupt traffic officials

It is recommended that there is a need for public members to report corrupt traffic official anonymously. To be specific, corruption, irresponsibility and poor management are among the actions that contribute to continued reckless driving by motorists. This is because many motorists know that they can avoid arrest by paying bribes to traffic officials. Some traffic officials provide precedence to bribery and gratuity instead of subsequent the traffic rules and policy. In most cases traffic officials have a tendency to talk explicitly with the vehicle operators about an option way to keep away from paying the fine. The toll-free line will help to reduce road accidents in Windhoek District.

5.3.4 Installation of Speed cameras on busy roads

While common prevention is stand on the speculation that drivers who are exposed to enforcement and knowledgeable concerning the possibility of fear will adapt their speeding manners to evade the threat of discovery and the follow-on penalty. It is recommended that speed cameras should be installed on busy roads.

5.3.5 Increased visibility of traffic officials

It is recommended that the official staff capacity be increased so that there can be more visibility of traffic officials on the road. The more visible the traffic officials are on the road the less negligence and reckless behaviour of the drivers.

5.3.6 Strict laws for repeat reckless and negligent drivers

It is recommended that the law be strict with punishment like increase fines. This means by putting strict rules in place to punish repeat offenders, many motorists may reconsider their driving skills.

5.3.7 Coordination of road safety activities

It is recommended that there is a need for coordination between the stakeholders namely Local Authority, Road Authority, Namibian Police and Motor Vehicle Fund as well as the community at larger. This collaboration on road safety strategies can enhance traffic police initiatives by identifying the accident hot spots and by encouraging the community members to take accountability and answerability and contribute on road safety issues to fight road crashes in Windhoek District. Poor participation by public members has been reported by most of the participants as the issue of concern (Motor Vehicle Assistance Fund (MVA), 2016). However, through integrated safety programmes, many people maybe encouraged to participate.

5.3.8 Quality maintenance of road with clear road signs

It is recommended that there is a need for quality road maintenance because there are still potholes and cracks on the road. More importantly, road set-up, the kind of roads, worth of the road such as black spot, road section, traffic lane size, intersection design, potholes, supposed to be well deliberate with extraordinary signs (Vasconcellos, 2001). Side road signs ought to be obvious by themselves and must transmit clearly identifiable meaning to the road users.

5.4 CONCLUSION

It can be concluded, that road traffic accidents in Windhoek District are consequences of a mixture of numerous issues and it is regularly challenging to single out one dominant source. The road accidents in Windhoek Region can be attributed to the following factors: Firstly, environmental risk factors which included the technical component of the main road building in the district is lower average and it hold high traffic volume without consideration of proper road safety strategies like road traffic lane separation and suitable road infrastructure and signs alongside the roadway. Secondly, human behaviour elements which includes pedestrians, drivers and road users in Windhoek District. Thirdly, vehicle factor elements which includes the increasing of vehicle population even though the road construction and road network is still unchanged. Fourthly, traffic regulations enforcement which includes weaknesses in traffic regulation enforcement, corruption,

irresponsibility and poor management. Therefore, the traffic officials alone cannot address this problem, instead there is a serious need for a collective effort local government, traffic authority, the road users and the public members in general to overcome the problem of high road accidents in Windhoek.

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EDITOR'S REPORT

22 January 2019

I, Brian David Wheeler hereby confirm that I was responsible for editing the research report for Polycalypus Shivute Sem Submitted in agreement with the requirements for the degree of Magister Technologiae in the topic Policing at the University of South Africa entitled: **The role of traffic officials in reducing road accidents in Windhoek.**

Editors Qualifications:

PhD Candidate, Peace & Security Studies, Addis Ababa University, Leipzig University
(Ethiopia/Germany)

Masters of Science in Humanitarian Services Administration: University of Connecticut, Storrs
CT, USA

Bachelors of Science in Organizational Communications: Wilberforce University, Wilberforce
Ohio, USA

Editor's Contact Details:

Email: namediting@gmail.com

Phone: +264 812669022

Brian D. Wheeler

Signature

APPENDIX A: ATTACHED SUPPORTING DOCUMENTS



REPUBLIC OF NAMIBIA



MINISTRY OF SAFETY AND SECURITY

Enq: Dep/Comm. Ludwig

Tel.: 061-231769

Fax: 061-231776

Ref: 2/5/4/26

The Head
Traffic Law Enforcement Division
Namibian Police
Private Bag 12024
Ausspannplatz
WINDHOEK

21 May 2015

**OFFICE OF THE REGIONAL COMMANDER
KHOMAS REGION**

Namibian Police Force
Private Bag 13210

WINDHOEK

Namibia

**RE: APPLICATION TO CONDUCT A RESEARCH IN THE NAMIBIAN POLICE FORCE:
NO. 05037 CHIEF INSPECTOR P.S. SEM: TRAFFIC LAW ENFORCEMENT
DIVISION**

1. The above subject matter bears reference.
2. No. 05037 Chief Inspector P.S. Sem applied to conduct research on the topic of the Traffic Officers in reducing road accidents in Windhoek towards the Master Degree in Policing.
3. The member's application was approved as per attached letter of the Inspector General of Namibian Police Force. The member is humbly requesting your good office to avail Traffic Officers from your office to interview them with guide questions.
4. The main aim is to assist the member with information regarding the abovementioned topic.
5. Your assistance in this regard will be highly appreciated.

Page 1 of 2

Yours Sincerely


DEP/COMM
R.H. LUDWIG: THE HEAD
TRAFFIC LAW ENFORCEMENT DIVISION

Page 2 of 2



*Insp. f. Kayalwa
H. M. M. E.
REC
16.01.2015*

REPUBLIC OF NAMIBIA

POL 716



Namibian Police Force

MINISTRY OF SAFETY AND SECURITY

Tel. No: (+264 61) 209 3111
Fax: No: (+264 61) 220 621

OFFICE OF THE INSPECTOR-GENERAL
Namibian Police Force
Private Bag 12024
Ausspannplatz
WINDHOEK
Namibia

Enquiries: Comm Kashihakumwa / C/Insp Shimbu
Our Ref.: 05037/6
Your Ref.:

(Handwritten mark)

12 January 2015

The Regional Commander
Namibian Police Force
Khomas Region
Private Bag 13210
WINDHOEK



APPLICATION TO CONDUCT A RESEARCH IN THE NAMIBIAN POLICE FORCE:
NO 05037 WARRANT OFFICER (1) P.S. SEM: TRAFFIC LAW ENFORCEMENT UNIT,
KHOMAS REGION

1. The above subject matter has reference.
2. No 05037 Warrant Officer (1) P.S. Sem, applied to conduct research on the topic of the of Traffic Officials in reducing road accidents in Windhoek Traffic Officials working in Windhoek towards the Master Degree in Policing.
3. The member's application is approved. Hence, the member should make proper arrangements, with Deputy Commissioner Ludwig head of Traffic and Law Enforcement to administer the questionnaires

Kindly for your information and inform the member accordingly.

Best regard,

(Red stamp: NAMIBIAN POLICE WINDHOEK 2015 -01- 14)
(Signature)
INSPECTOR GENERAL

LT-GEN

S.H. NDEITUNGA
INSPECTOR – GENERAL: NAMIBIAN POLICE FORCE

(Red stamp: NAMIBIAN POLICE WINDHOEK 22 JAN 2015 UNIT COMMANDER TRAFFIC DIVISION)
(Signature)
REC

UNISA CLAW ETHICS REVIEW COMMITTEE

Date 20170828

Reference: ST46 OF 2017

Applicant: PS Sem

Staff: Dr. SA Mabudusha

Dear PS Sem

**Decision: ETHICS APPROVAL
FROM 28 AUGUST 2017 to 27
AUGUST 2020**

Researcher: PS Sem

Supervisor: Dr. SA Mabudusha

**THE ROLE OF TRAFFIC OFFICIALS IN REDUCING ROAD ACCIDENTS IN
WINDHOEK**

Qualification: MTech in Policing

Thank you for the application for research ethics clearance by the Unisa CLAW Ethics Review Committee for the above mentioned research. Ethics approval is granted for 3 years.

The CLAW Ethics Review Committee reviewed the negligible risk application on 28 August 2017 in compliance with the Unisa Policy on Research Ethics and the Standard Operating Procedure on Research Ethics Risk Assessment. The decision was ratified by the committee.

The proposed research may now commence with the provisions that:

1. The researcher(s) will ensure that the research project adheres to the values and principles expressed in the UNISA Policy on Research Ethics.
2. Any adverse circumstance arising in the undertaking of the research project that is relevant to the ethicality of the study should be communicated in writing to the CLAW Committee.
3. The researcher(s) will conduct the study according to the methods and procedures set out in the approved application.



4. Any changes that can affect the study-related risks for the research participants, particularly in terms of assurances made with regards to the protection of participants' privacy and the confidentiality of the data, should be reported to the Committee in writing, accompanied by a progress report.
5. The researcher will ensure that the research project adheres to any applicable national legislation, professional codes of conduct, institutional guidelines and scientific standards relevant to the specific field of study. Adherence to the following South African legislation is important, if applicable: Protection of Personal Information Act, no 4 of 2013; Children's act no 38 of 2005 and the National Health Act, no 61 of 2003.
6. Only de-identified research data may be used for secondary research purposes in future on condition that the research objectives are similar to those of the original research. Secondary use of identifiable human research data require additional ethics clearance.
7. No research activities may continue after the expiry date 27 August 2020. Submission of a completed research ethics progress report will constitute an application for renewal of Ethics Research Committee approval.

Note:

The reference number ST46 of 2017 should be clearly indicated on all forms of communication with the intended research participants, as well as with the Committee.

Yours sincerely,



PROF D GOVENDER
Chair of CLAW ERC
E-mail: govend1@unisa.ac.za
Tel: (012) 429-9482



PROF OS SIBANDA
Acting Executive Dean : CLAW
E-mail: sibanos@unisa.ac.za
Tel: (012) 429-8374

APPENDIX A: PARTICIPANTS CONSENT FORM

Affiliation: University of South Africa, MTech: Policing student

Researcher: Mr Polycalypus Shivute Sem

Title of study: The role of traffic police in reducing road accidents in Windhoek.

Purpose of study

To explore the challenges facing the traffic officials in reducing road accidents in Windhoek.

Procedure

The researcher will carry out interviews aided by an interview schedule. In some instances the researcher will use audio recorder to record the conversations. The researcher will obtain an agreement for an interview; explain the purpose of the interview and likely duration and the venue. The duration will be agreed upon and should not interfere with the core business of the interviewee and that is why the participants reserve a right to terminate the interview if circumstances that cannot be surmounted by instincts or routine prevail.

Risks and discomforts

There are no anticipated risks or discomfort arising from the interview, but should anything result in discomfort for the research participants, the researcher will allow the participants to terminate or postpone the interview to a later date. The researcher will at all times mitigate such risks and where possible serve the interests of the respondent.

Participant's rights

Participation in this study is voluntary and participants will be truthfully informed about the nature of the research and their involvement, the method of the interview, that they will be no incentives and how the findings will be disseminated. The participants reserve a right not to participate and the right to withdraw from the interview at any time. They (respondents) also have a right to anonymity and right to confidentiality.

Security of data

Data obtained from the research participants will be kept confidential and raw data will be stored in the computer hard drive and locked with a secret pin and only be accessed by the researcher. The respondents reserve a right to ask for destruction of data upon withdrawal.

- 1. Voluntary consent:** I know that my participation in this research is completely voluntary.
- 2. Option to withdraw:** I know that I have the right to withdraw at any time and such withdrawal will not be used against me in any manner.
- 3. Opportunity to ask questions:** If I have any questions about this research, I know I can ask the researcher to clarify any aspects of the research and that I may reach him on sem@iway.na.
- 4. Privacy and confidentiality:** I have been assured by the researcher that about the contents of this consent form and that my identity will not be revealed while the research is being conducted or when it is published.
- 5. Respondents access to final research report:** I have been informed that should I need to have access to the final product of this research study I should access it on google scholar under the researcher' profile or request it directly from the researcher via email (sem@iway.na).

Thank you for your participation in this study

I, the undersigned agree to participate in this study voluntarily without undue influence.

Signed at.....on this.....day of.....20.....

Signature..... (Participant no:.....)

APPENDIX B: INTERVIEW SCHEDULE

PARTICIPANT NO:_____

My name is Polycalypus Shivute Sem, I am an MTech: Policing student at University of South Africa, (Student no: 47295892) currently busy with my research study (The title of my research study is: The role of traffic officials in reducing road accidents in Windhoek, Namibia). I request your permission to answer the questions below and if you agree please sign me the consent form letter. For any inquiries regarding this study you may send me an email to the following address: sem@iway.na.

INTERVIEW GUIDE QUESTIONS WITH TRAFFIC POLICE OFFICERS

Date----- Age----- Gender-----

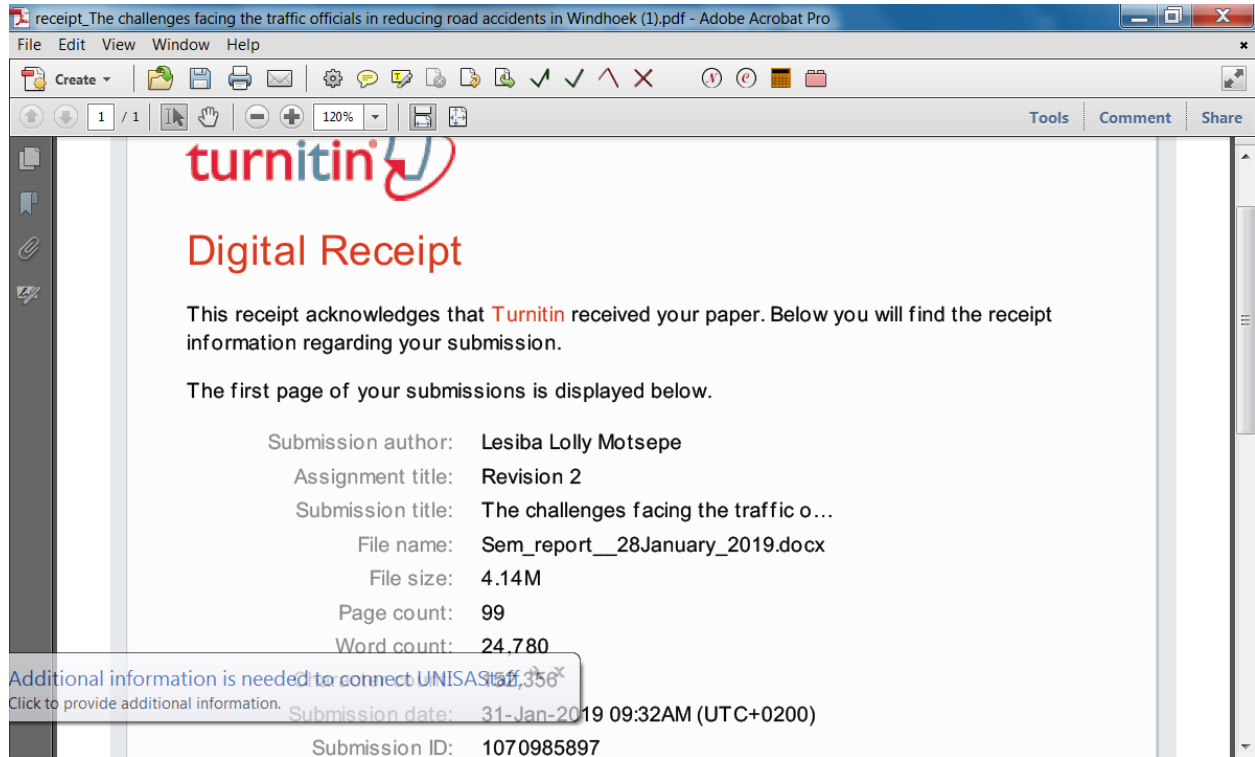
Rank----- Working experience-----

- 1. How does the traffic officials in Windhoek enforce the road safety rules?-----

- 2. What are the challenges encountered by the traffic officials during the implementation of the road safety rules? -----

- 3. What are the root causes of road accidents in Windhoek?-----

4. What strategies can be used by traffic officials to enhance road safety within Windhoek?-



Please note: The name identified as the author on this report is the name of the person who helped the student to run his dissertation via Turn-it-in software. The author of this report is Mr Polycalypus Shivute Sem.