



An assessment on factors contributing to road fatalities on R546 Route in Mpumalanga Province: A case of Govan Mbeki Municipal Area

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ABSTRACT

The objective of this study was to evaluate the consequences of road accidents and explore novel approaches aimed at promoting safer behavior among road users. The enforcement of road traffic laws serves as a means to generate income while also ensuring compliance with traffic regulations and fostering a safer road infrastructure that is conducive to enhancing the well-being of individuals and bolstering the economy of South Africa. The data collection process utilized an approach based on non-probability sampling, namely intentional sampling. A total of 30 individuals were selected to participate in the study. This sample consisted of government officials (n=13), taxi operators (n=4), taxi commuters (n=8), and senior academics (n=5). The study's results were categorized into three main themes: human error emerged as the primary factor contributing to road traffic fatalities, insufficient allocation of resources to address road fatalities, and the enhancement of law enforcement operating procedures and working hours. These themes were derived from the perspectives of the participants and findings from previous studies in the existing literature. The findings of the study indicate that professional and organizational factors have a more significant impact on dangerous conduct when compared to external and personal factors. The report provides recommendations for mitigating contributory factors by adopting innovative technical devices to avoid and minimize road fatalities. Additionally, it suggests implementing policy-based measures and establishing regulatory organizations to reduce the occurrence of accidents.

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Introduction

The Gert Sibande District Municipality, namely the Govan Mbeki Local Municipal Area, serves as the pathway for the R546 route, connecting the cities of Secunda/Embalenhle, Evander, and Kinross within this particular municipality. The R546 is a transportation route of provincial or significant regional importance, traversing the municipal area. It functions as a conduit to the national routes and operates as a primary road in regions without a national route. This roadway has gained significant notoriety due to the high frequency of traffic accidents that have transpired, resulting in a substantial loss of lives and inflicting considerable pain upon people affected by such incidents. The study primarily centers on the municipality due to its location within the Gert Sibande District Municipality, namely R546. The Road Traffic Management Corporation (RTMC) reported that there were 14,050 fatalities documented in the Mpumalanga province from January 2017 to December 2017 (RTMC, 2017). A comprehensive investigation indicates that Mpumalanga province documented a total of 1,182 fatal collisions. Hence, the occurrence of fatal accidents on South African roads presents a significant concern for the entire South African population. Consequently, it underscores the imperative for South African scholars to undertake the responsibility of enlightening road users of the prevailing accident rates on South African roads. The province of Mpumalanga is recognized as one of the regions characterized by a significant incidence of traffic accidents. The primary objective of this study is to enhance comprehension of the various aspects that significantly contribute to road accidents,

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as well as to evaluate the economic implications of road infrastructure inside the nation. The present research study aims to further investigate the effects of traffic accidents on individuals who have been directly affected by these incidents, specifically focusing on the victims themselves and their relatives. Extensive examination has been conducted to ascertain the profound effects of road accidents on both the individuals directly affected by the incidents and their respective families. Finally, the expenditure associated with the construction and maintenance of road infrastructure along the R546 within the jurisdiction of Govan Mbeki Municipality. The primary objective of this study is to investigate the many factors that contribute to the occurrence of road fatalities.

The act of moving from the starting location to the intended destination can be achieved via a variety of transportation methods. Nevertheless, the feasibility of the endeavor is contingent upon the magnitude of the distance to be traversed and the financial implications entailed by the resulting relocation. According to reports, South Africa possesses one of the most unfavorable road accident records globally. Based on the findings of the International Transport Forum (ITF) as cited by Steyn (2013:2), South Africa exhibits the lowest performance among a group of 36 nations in terms of road deaths. Additionally, it is approximated that the economic burden of road accidents in the country amounts to approximately R300 billion annually. According to Osei-Kyei and Chan (2016), road transportation serves as the predominant mode of transportation in South Africa, encompassing a diverse range of vehicles for the purpose of transportation. According to the research conducted by Mends-Brew, Dadzie, Dadson, and Amoamah (2018), the predominant mode of transportation utilized by the majority of individuals in South Africa (SA) is road transport. This mode of transport serves as the primary means for everyday commuting as well as the transportation of essential resources such as raw materials and food supplies. According to Luoma and Sivak (2011), road transportation has both beneficial and bad effects on the economic landscape and socio-economic lifestyle of a country. Wei and Lovegrove (2012) argue that based on the latest evidence, it is projected that road accidents will become the third most common cause of death globally by 2020. They suggest that in order to prevent this outcome, it is necessary to develop and apply a novel strategy to mitigate road accidents.

According to Osidele (2016), the occurrence of traffic accidents has a significant impact on the nation, particularly due to the active involvement of young individuals in these incidents. South Africa, as a developing nation, is seeing a rapid growth in various aspects such as business initiatives, the economy, and industrialization. The rate of progress in the expansion of transportation infrastructure is currently outpacing that of developed urban areas (Modipa, 2022). Furthermore, there has been a notable surge in the procurement of automobiles by the populace within the nation. Osidele (2016) asserts that road accidents and car crashes have a significant impact on public health issues globally.

The occurrence of road accidents has deleterious effects on families, manifesting as emotional distress, financial instability due to reduced income, and physical impairment. These consequences are particularly pronounced in the context of South Africa's ongoing developmental process. As a result, it can be inferred that the nation lacks robust support systems for individuals affected by car accidents. According to Labuschagne, De Beer, Roux, and Venter (2016), the statistic known as the total cost of road traffic collisions (RTC) holds substantial importance as a road safety indicator. This metric serves as the initial reference point for comprehending the scale and extent of the road safety challenge in South Africa. A comprehensive comprehension of the financial implications arising from road accidents is of utmost importance, given the significant economic hurdle that must be overcome in the pursuit of poverty eradication. Road accidents exert a significant influence on South African society, as evidenced by the escalating economic expenses and loss of human lives associated with such incidents. The objective of this study was to enhance comprehension regarding the factors that significantly contribute to road fatalities and evaluate the influence of road incidents on the national economy. The present research study aimed to investigate the additional repercussions experienced by those affected by traffic accidents, specifically focusing on the victims themselves and the families who have endured the consequences of such road incidents. The examination of the impact of road accidents on both the victims and their families, as well as the assessment of the costs associated with the road infrastructure on R546 in Govan Mbeki Municipality, has been conducted in a comprehensive manner.

Road safety encompasses various factors that contribute to reducing the significant number of road fatalities and deaths experienced by road users on the R546 Route in Mpumalanga Province. These factors include ensuring the safety of roads, drivers, vehicles, engines, buildings, infrastructure, environments, minds, eyes, bodies, and senses. By addressing these variables, it is possible to mitigate the risks associated with road travel and enhance overall safety on the mentioned route. The aforementioned highway has gained notoriety for its high frequency of traffic accidents, resulting in several fatalities, disabilities among individuals, a rise in the number of orphans within the country, and adverse effects on the economy of Mpumalanga. This study aims to address the existing disparity in the establishment of initiatives and collaboration among various parties involved in the management of the R546 road. The current state of road safety education for pedestrians and drivers is lacking in effectiveness, and there is a noticeable absence of police patrols on the highway to ensure compliance with traffic regulations. Moreover, it appears that the local community and community-based organizations, which are in a favorable position to promote road safety awareness among road users, lack awareness themselves in this particular domain.

Literature Review

A Conceptual Framework for Road Traffic Safety

A conceptual framework is defined as a network of linked concepts (Schepers, Hagenzieker, Methorst, Van Wee & Wegman, 2014). The conceptual framework for the development of crash prediction model on national rural roads provides a detailed overview of the

factors that contribute to accidents. It also offers the opportunity to consider all potential methods that can be extended to any of the relevant variables in the term of decreasing the number of accidents as part of the road safety strategies (Dermawan & Tjahjono, 2019). These strategies had been introduced by Haddon (1972) such as a component of the initial logical framework, vehicle, human, infrastructure, equipment, physical and socio-economic environment. Models can define crashes as a sequence of events over time or a process, such as the Haddon's framework, pre-crash, crash and post-crash phases. The proposed framework for accident prediction models could be implemented by road safety professionals and ultimately tested for use. It could also be used to analyse past strategies to identify which techniques and sub-components were not previously applied. The framework could be used by researchers as a guide for defining other variables.

Hughes, Anund and Falkmer (2016) illustrate all the prospective contributors to the crash such as transport and land use context, economic context, social context, natural environmental, human, vehicle, crash response and traffic volume. Tjahjono (2012) as cited in Dermawan and Tjahjono (2019:3) provides information that “the factors that cause accidents written in police reports tend to emphasize errors in human factors or it can be said that human factors are the main factors in the majority of accidents.” However, it is not easy to study the influence of human factors in the event of an accident considering that human characteristics and behaviour vary naturally so that accident management strategies are generally directed at applying technical corrective actions to road infrastructure to decrease the possibility of drivers making mistakes (Tjahjono, 2012 as cited in Dermawan & Tjahjono, 2019:3). This study emphasis more on the assessment on factors contributing to road fatalities on R546 Route in Mpumalanga Province. No every variable in the road infrastructure components become explanatory variables in this model. The selection of explanatory variables should be driven by the earlier documented evidence of factors available from research literature or by the availability of data.

Road safety

Displacement from the point of origin to the destination can be accomplished through diverse modes of transportation. However, it depends on the distance that needs to be covered and the costs coupled with the consequential movement. South Africa reportedly has one of the worst road accident records in the world. According to the International Transport Forum (ITF) (Steyn, 2013), South Africa is ranked the worst out of 36 countries when considering road fatalities and it is estimated that road crashes cost the country over R300 billion every year. Osei-Kyei and Chan (2016), assert that road transportation is the major system of transportation in South Africa, which relies on various kinds of vehicles as means of transport. According to Mends-Brew, Dadzie, Dadson and Amoamah (2018), most people in South Africa (SA) rely mainly on road transport for their daily commuting, as well as the conveyance of raw materials and food commodities. Luoma and Sivak (2010), stipulate that road transportation imposes both the negative and positive impact on the economy landscape of the country, as well as on the socio-economic lifestyle. According to Wei and Lovegrove (2012), a latest outcrop signifies that road carnage will be the third leading reason of fatalities worldwide by 2020 except if an innovative assurance to impediment is formulated and implemented. Osidele (2016), asserts that roads carnage inflicts an immense dispute to the country, as the population age cohort identified to be involved in most of this carnage is an industrious youth. South Africa is a developing country and consequently, a swift escalation in terms of business venture, economy and industrialisation is ever-increasing. The continuing development of transport infrastructure is at a more rapid pace than the urbanised world. Moreover, there is an increase in the acquisition of vehicles in the country by the citizens. According to Osidele (2016), road accidents and vehicle crashes contribute to problems encountered within the public health sector throughout the world.

Contributing Factors

According to Chen (2010); De-Ona, Mujalli and Calvo (2011); Cornelissen, Salmon, McClure and Stanton (2013), there are numerous factors which contribute to RTAs and traffic injuries. Some of these factors are often caused by the use of cell phone (Tedesco, 2014), alcohol and drug abuse (Institute of Alcohol Studies, 2010; Singh, Singh, Gupta & Kumar, 2014), fatigue (Gopalakrishnan, 2012; Sagberg, Jackson, Kruger, Muzet & Williams, 2014), human factors (Demissie, 2017; Leeming and Hartley, 2011; McHugh, 2011; Van Elslande, Naing & Engel, 2018; De Winder & Dodou, 2010), speed (Abele & Moller, 2011; Martinussen, Møller & Prato, 2014; Wilson, Willis, Hendrikz, Le Brocque & Bellamy, 2010), vehicle factors (OJungu-Omara & Vanderschuren, 2016; Komba, 2017; Oduro, 2012; Onuka & Akinyemi, 2012; OJungu-Omara, 2016), and external factors including road conditions and infrastructure (Al-Hammoudi, 2014). Road damage is a factor that can prevent accidents if the damage is handled properly. Modipa (2022) indicates that the weather is one environmental risk factor that is known to affect collision rates.

Roux, Venter and Labuschagne (2016), stipulate that the high number of road traffic crashes and their associated consequences have a significant impact on the South African society, which continues to hamper socio-economic development and impact on the well-being of all South Africans. Wismans (2017), indicates that road accidents cause consequences to medical costs, which are the costs resulting from the treatment of casualties like the costs of a hospital stay, rehabilitation, medicines and adaptations and appliances for the handicapped. The economy landscape of the country is also hampered by the social security that the government must deal with in terms of making sure that those involved in road carnage are compensated through the Road Accident Fund (RAF). Hardcastle, Oosthuizen, Clarke and Lutge (2016), insist that road traffic carnage involve indeterminate budget consumption due to the unpredictability of the general burden and injury severity that may result in the injuries suffered by a victim. Some injuries leave a person disabled forever with severe conditions that need to be monitored now and then. This means that the government must support

and take care of the victims for the rest on that persons' life. Klopper (2014) indicates RAF is a common law right that was formulated to compensation for bodily injury and loss resulting from road accident deaths.

The existence of role players or policies are not enough but the enforcement makes the difference. Mphela (2011), affirms that enforcing laws and policies does not translate into compliance, even though there are role players that are currently being implemented in Govan Mbeki municipality. The reduction of road traffic accidents and fatalities can, however, be achieved if road-user compliance is improved. Aparacio, Arenas, Mira and Páez (2011), attribute that a large proportion of road traffic accidents are because of road-user behaviour and more specifically, accidents that occur because of the decisions taken by road users to disobey or break the rules of the road, commonly referred to as human error. Al-Hammoudi (2014), highlights that police enforcement is very important in decreasing the problem of road accidents.

Research and Methodology

Materials and methods

This study used a qualitative method of data collect. Interview schedule were administered to participants during face-to-face interviews. The interview schedule consisted of two sections. Section A elicits demographics and, section B enlists research questions used to explore the views of participants from the following categories: government officials (13), taxi operators (4), taxi commuters (8) and senior academics (5). Performing data analysis on qualitative data involves dismantling, segmenting and reassembling data to form meaningful findings in order to draw inferences (Boeije, 2010, cited in Wahyuni, 2012:75). A common approach to the interpretation of meaning from textual data is using content analysis (Wahyuni, 2012:76). Thematic content analysis (TCA) was conducted using Atlas.ti software. Atlas.ti is one of many Computer Assisted Qualitative Data Analysis Software (CAQDAS) programs (CAQDAS) programs. Each CAQDAS program employs its own distinct set of terms for its coding functions and operations (Saldana, 2013:31). Criterion used to validate research located within the interpretive paradigm includes credibility, dependability, confirmability and transferability (Lincoln, 1995, cited in Kuyini & Kivunja, 2017:34). There was consideration to strategies of ensuring trustworthiness. The strategies suitable for ensuring the trustworthiness of a study are as follows: Strategies to ensure credibility are prolonged engagement, persistent observation, triangulation and member check (Korstjens & Moser, 2018:121). The strategy to ensure dependability is an audit trail. This entails transparently describing the research steps taken from the start of a research project to the development and reporting of the findings (Korstjens & Moser, 2018:121). The strategy to ensure confirmability is an audit trail (Korstjens & Moser, 2018:121). Finally, the strategy to ensure transferability is a detailed or thick description of respondents' behaviour, experiences and their context (Korstjens & Moser, 2018:121).

Findings

Responses To Questions – Emerged Themes

Three themes emerged based on the objectives as depicted in Table 1 below.

Objectives	Themes and Sub-themes
To assess factors that contribute to traffic fatalities within the Govan Mbeki Municipal area	Sub-theme 1: Human error as the most contributing factor to road traffic fatalities. Sub-theme 2: Alcohol abuse negatively impact on road fatalities. Sub-theme 3: Poor road infrastructure contributes to road fatalities.
To assess strategies that are implemented within the Govan Mbeki Municipal area to curb road fatalities; and	Theme 2: Inadequate allocation of resources to curb road fatalities. Sub-theme 2: The ineffectiveness of a multi-disciplinary stakeholder approach in ensuring road safety adherence. Sub-theme 3: Human resource capacity to identify and deal with the lack of knowledge of law enforcement officials to deal with unroadworthy vehicles on public roads.
Based on the findings, to recommend possible strategies or best practices that could be used to reduce road traffic accidents	Theme 3: The improvement of law-enforcement operating procedures and working hours. Sub-theme 2: Investment in proper technology and systems to enhance law enforcement. Sub-theme 3: Improving intergovernmental relations with all departments involved on the effective law enforcement.

Source: Authors' illustration

These three themes and sub-themes are discussed below.

Human error

When asked which factors contribute more to road fatalities within the Govan Mbeki area, most participants concurred that human error is the most contributing factor to road traffic fatalities, although many efforts and law enforcement of road traffic duties, as well as awareness programs for road users on the importance of safe road user behaviour. In most cases (about two thirds) of the accidents recorded, human error was present. Lack of law enforcement visibility is seen as the major factor that encourages bad driving behaviour, as most of the motorists behave appropriately when they see traffic officers.

Some of the responses were as follows:

Human error is the serious challenge that should be dealt with when you want to end road fatalities, as most of the crashes that occurs are dominated by how bad driving habits engulfed our roads (Participant 3).

Traffic officer are only visible during the week, over the weekends are nowhere to be seen as a result of that majority of the accidents occurs when officials are not on the road. That signals that if traffic officers are on the roads, then bad driving behaviour can be curbed, and that will be the no high road crashes rate (Participant 7).

Alcohol abuse

It emerged from the findings that most participants concurred that driving under the influence of alcohol, is amongst other causes of road crashes in South Africa. Based on the 2018 figures, about 3.4% of fatal crashes occurred due to intoxicated drivers, pedestrians and cyclists with liquor usage. In South Africa, the maximum authorised blood alcohol content (BAC) is 0.5 g/l. There is a lower limit of 0.2 g/l for professional drivers of public transport and heavy goods vehicles. A crash is defined as alcohol-related when one of the participants has a BAC above the legal limit. Data on the role of drug use by road users causing road crashes in South Africa, is unavailable. Driving while under the influence of intoxicating liquor or drugs having a narcotic effect, or with an excessive amount of alcohol in the blood or breath is prohibited. Drug driving measures are not yet enforced. Some of the responses were as follow:

Many people are found to be consuming alcohol from Thursday to Sunday outside their residential area which lead them to drive to their place of residents after consuming alcohol (Participant 4).

Another participant was of the view that traffic law enforcement should dedicate their resources to alcohol consumption to promote a positive adherence to the No Drink and Driving rule, for the community to develop a community safe culture.

Govan Mbeki is no different to such behaviour, as you have companies like Sasol and Umshiniwami which are paying well so every weekend it's time for alcohol consumption (Participant 12).

Reckless and negligent driving

When asked why they believe reckless driving is one of the major causes of road crashes they indicated that they believed that reckless driving is because most of the vehicles found to be involved are the latest fast car models, and the majority of those vehicles are in an excellent roadworthy condition. Most of the participants concurred that reckless driving is a major problem in South Africa. One participant said:

Reckless driving is the new way of driving in South Africa's roads. If you are driving accordingly, you are deemed as amateur driver (Participant 5).

Poor condition of road infrastructure

It emerged that the findings of this study found that only a small portion of the crashes, fatalities and injuries are believed to be caused by road infrastructure. Instead, the participants were of the view that most of the road users were not using the road network accordingly, as they do not comply with the rules of the road as specified in the K53 driving manual and outlined in the National Road Traffic Act 93 of 1996. From the findings, it also emerged that road users become impatient, and they end up contravening rules and regulations that they should always abide with when they're using the road. The road infrastructure is often damaged by the road users who uses unroadworthy vehicles that causes damage to the road surface, and placing of foreign object on the public road has been seen as a contributing factor. Road users are found to be transporting goods or items that can be spilled or easily dislodged and cause damage to road infrastructure, which is in contravention of regulation 246 of the National Road Traffic Act. Some of the responses were as follow:

Few accidents occur due to bad infrastructure, yet during protest it is when we vandalise the infrastructure like road signage as a results people find themselves contriving traffic rules and end up involved on crashes (Participants 3).

Though poor road infrastructure cannot be completely ruled out, it plays a vital role in ensuring that we have proper and roadworthy vehicles to travel on the country's public roads Municipal roads are found to be in a disastrous state, which causes damages to vehicles and causing vehicles not to be roadworthy. Most of the municipal roads have potholes, and they are not user friendly. A recommendation is placed that provincial and national government should intervene in municipalities that do not have the capacity to maintain their road infrastructure, as more fatalities and serious injuries are growing within the municipal areas. In their review, McDonald, Goodwin, Pradhan, Romoser and Williams (2015), identified poor hazard anticipation skills as factors determining young

drivers' car crash risk. Few training programs have been developed to improve these skills. All studies included in this meta-analysis found that young drivers showed an improvement in anticipating risk. However, none of these studies assessed their long-term effects on road accidents.

Strategies that are implemented within the Govan Mbeki Municipal area to curb road fatalities

Inadequate allocation of resources to curb road fatalities.

Traffic law enforcement officials need to focus more on moving violations, as most motorists must study their pattern of work, where they conduct their daily operations. As a result, they only behave when approaching those identified spots or where they know that there are speed cameras, once they pass those hot spots, they go back to their bad driving behaviour. Moving violations is believed to be the only solution which could help reduce accidents that are needless and occur because of the old style of managing the moving violations, like waiting on a barrier line only for few drivers overtaking on that area whilst they're being monitored. Some of the responses were as follow:

State resources are not properly managed and utilised where they are mostly needed but they are directed where they are not need or effectively useful (Participants 2).

The effectiveness of a multi-disciplinary stakeholder approach in ensuring road safety adherence

Educating road users on the importance of prioritising their safety at all-times should be the primary goal for those who wishes to become a road user in the ranks of being a driver, commuter and operator. Professionalising driving school institutions is key when you want to build a state of capable safe drivers that will always uphold the rule of law on the road. Obtaining a driving licence needs to be more professional as a way of always promoting safety on the public roads. Drivers needs to undergo proper training to prepare them to be able to always keep a free flow of traffic, obtaining a driving licence should be formalized with the aim of building the driver's ability to face the challenge to drivers when using our public roads. Some of the responses were as follow:

The is a huge need to professionalize driving school if we really need to address road carnage in south Africa, as currently driving school trainers as employed by the driving school on basis of being in possession a driving licence instead of have a qualification driver education and technique (Participants 7).

Human resource capacity

The strategies of the Mpumalanga Department of community safety, security and liaison are very good at reducing road fatalities in the province and within the Govan Mbeki municipal area. The only challenge is on the implementation part where it shows that they do not have enough resources to fight road crashes effectively to the extent that at times you may travel about 100 kilometres without seeing traffic officers or their patrol vehicles which result in motorists' resolve in doing wrong manoeuvres which risk the lives of innocent road users, who choose to abide by the rules of the road. The traffic officer's visibility plays a vital role in ensuring that motorists abide with the rules of the road. Some of the responses were as follow:

Majority of traffic officers concentrate on minor offences that are not the major source of danger in terms of vehicle roadworthiness, they ignore offences such as brakes on vehicle, and safe following distance between vehicles (Participants 5).

Possible strategies or best practices that could be used to reduce road traffic accidents

Improvement of law enforcement operating procedures and working hours

Traffic law enforcement officials need to focus more on moving violations, as most motorists have studied their pattern of work and where they conduct their daily operations. As a result, they only behave when approaching those identified spots or where they know that there are speed cameras. Once they have passed those hot spots, they go back to their bad driving behaviour, some of the responses were as follows:

Moving violations is believed to be the only solution which could help reduce accidents that are needless and occurs because old style of managing the moving violations, like waiting on a barrier line only for few drivers overtaking on those particular areas whilst their monitored (Participants 8).

Investment in proper technology and system to enhance law enforcement

Traffic law enforcement needs to move with technology development and introduce gadgets that will enhance their ways of performing their duties. Utilize gadgets that can record moving violations for the purpose of court testifying to ensure that reckless drivers are acquitted while they have committed such offences. They are acquitted because of not enough evidence to strengthen cases of such nature. Some of the responses were as follow:

Traffic officers are stuck in the past as they cannot perform certain function on the road side, like verifying vehicle details before they can stop it or check driver information before they can even issue a notices to such motorists (Participants 6).

Traffic does not even have dashboard cameras for evidential purpose which leads courts to withdraw some of the cases because they lack evidence (Participants 3).

Improving intergovernmental relations between relevant stakeholders

It emerged from the findings that participants were of the view that improving intergovernmental relations between all relevant stakeholders is a necessity. Getting operators to be held accountable for their fleet that is operated on the public road, every operator should be punished for their vehicle defects, rather than punishing drivers only. Whenever an operator fleet is found not to be compliant with the rules of the road, that operator should be issued with harsh sanctions that will push him or her to ensure that all the fleet is in roadworthy condition and compliant at all times. Such stricter rules will encourage good driver behaviour. Some of the responses were as follows:

Foreign nationals are found to be more occupying the space as drivers yet some cannot even speak at-least English yet they are allowed to drive within the republic where road signs are written in English, and that create a hazards to other road users (Participants 3).

Discussion

The findings from participants highlighted that the likelihood of success is substantially always increased by the availability of traffic officers on all public roads, including weekends which are more of a challenge, as it has been noted that when traffic officers are present on the roads, the attitude of drivers change as well to a positive behaviour, for at least the next 10 to 15 kilometers. More importantly, however, is that the meta-analysis only contained a few studies on this type of campaign, and as such this result is based on fewer studies and observations. The results of the study conducted by Rolison, Regev, Moutari and Feeney (2018), also reveal that lack of police patrols, sobriety check points, speed cameras and speed control measures such as humps. Some of the factors are identifying possible inadequacies in law enforcement practices for investigating driver distraction, drug and alcohol impairment, and uncorrected or defective eyesight. Our investigation also highlights a need for accident report forms to be continually reviewed and updated to ensure that the contributing factor lists reflect the full range of factors that contribute to road accidents. Finally, the views held by police officers and the public on accident causation influenced their memory recall of factors involved in hypothetical scenarios. These findings indicate that delay in completing accident report forms should be minimised, possibly by use of mobile reporting devices at the scene of the accident. Drunk driving, speeding, drowsiness, negligence, non-use of seat belts and helmets, and non-compliance with traffic regulations are the main causes of road accidents in Africa, the agency reported.

From the findings, the contributing factors included an ageing vehicle fleet in public transport, false licenses, lack of enforcement of penalties, and a dearth of rigorous technical inspections. These findings corroborated with the findings by (Summala & Mikkola, 1994:315), also confirm that human factor is one of the factors that influence road accidents. This finding is supported by giving the following reason for this phenomenon: "younger drivers tend to avoid and delay taking breaks and also take more deliberate risks than older drivers do". These findings indicate that human error is a major contributor to road carnage. Furthermore, responses highlighted that the newer models of vehicle also contributed a lot and these responses offered conflicting views regarding reckless driving, whether these vehicles are the source of the problem, or it is driver behaviour and road users. In terms of the responses, some of the participants focused particularly on the non-punishment of those driving recklessly. RTMC Road Traffic Fatality Report for 2017, confirms that among the other factors that contribute to fatalities, are reckless and neglectful driving. Numbers of drivers were found unable to control a vehicle because of excessive speeding. Failure to adhere to the rules of the road was a major contributor. These findings corroborate with the study conducted by Parkinson, (2013:850). Tamakloe and Park (2022), analysed factors influencing the number of vehicles and the number of casualties involved in fatal crashes at intersections and midblock. Their time-of-day analysis revealed that large casualties were associated with nighttime at critical intersections. Reckless driving was related to single-vehicle crashes at intersections.

Regarding reckless and negligent driving, it emerged that the majority of participants concurred that reckless driving was identified as one of the most contributing factors to road fatalities, as most accidents revealed that mainly human error, where road users are found to be using public roads without due consideration of others that use the public road with more than 80% crashes recorded, are more about drivers failing to exercise due consideration to himself or herself and other road users. It is recommended that a holistic approach be implemented by traffic law enforcement agencies to curb the ever-rising incidents of reckless and negligent driving. And to encourage the judicial not to measure reckless driving with death or injuries caused during the reckless and negligent driving process, as it is seen as a major setback to traffic law enforcement agencies because those who are found to be driving recklessly go unpunished because the system considers reckless and negligent driving only if injuries have occurred in the process.

It also emerged from the findings that most participants concurred that driving under the influence of alcohol, is amongst other causes of road crashes in South Africa. Based on the 2018 figures, about 3.4% of fatal crashes occurred due to intoxicated drivers, pedestrians, and cyclists with liquor usage. In South Africa, the maximum authorised blood alcohol content (BAC) is 0.5 g/l. There is a lower limit of 0.2 g/l for professional drivers of public transport and heavy goods vehicles. A crash is defined as alcohol-related when one of the participants has a BAC above the legal limit. Data on the role of drug use by road users causing road crashes in South Africa, is unavailable. Driving while under the influence of intoxicating liquor or drugs having a narcotic effect, or with an excessive amount of alcohol in the blood or breath is prohibited.

The RTMC Report (2017), confirms that among other factors that contributed, alcohol was on top of the list for major contributors to road accidents, with most young people found to be drinking and driving, which results in impairing their vision and driving

ability. These findings corroborate with the study conducted by Parkinson, Kent, Aldous, Oosthuizen and Clarke (2013). According to Waylen and McKenna (2008), alcohol greatly increased the probability of having a car accident and the severity of its consequences. Espada, Griffin, Gonzalez and Orgiles (2015), added that the occupants of a vehicle, are three times more likely to die of a fatal injury after a car accident, if having consumed alcohol compared to being sober. In fact, alcohol could impair driving capacities and cause accidents and/or collisions. Indeed, Dang, Hamelin, Salomon and Lert (2016), demonstrate a relationship among the precociousness of the first alcohol intoxication and risky behaviours on the road among young drivers. Al-Abdallat, Al Ali, Hudaib, Salameh, Salameh and Idhair (2016), show that alcohol use significantly reduced a person's motor skills due to its impact on concentration, alertness levels, and reflexes. Moreover, scholars such as Nkwana (2018) and Pienaar and Nel (2009) indicate that an average high blood-alcohol levels impair the judgement of motorists and affect their reaction time. The drivers do not take cognisance of this impairment and might undertake unnecessary risks (Nkwana, 2018). The South African National Road Traffic Act 93 of 1996, sought to set alcohol consumption limits for motorists in South Africa in section 65 (3) as follows:

If, in any prosecution for an alleged contravention of a provision of subsection (2), it is proved that the concentration of alcohol in any specimen of blood taken from any part of the body of the person concerned was not less than 0,05 gram per 100 millilitres at any time within two hours after the alleged contravention, it shall be presumed, in the absence of evidence to the contrary, that such concentration was not less than 0,05 gram per 100 millilitres at the time of the alleged contravention, or in the case of a professional driver referred to in section 32, not less than 0,02 gram per 100 millilitres, it shall be presumed, in the absence of evidence to the contrary, that such concentration was not less than 0,02 gram per 100 millilitres at the time of the alleged contravention.

The National Road Traffic Act 93 of 1996 section 65 (3), forbids motorists from exceeding a maximum of one unit of alcohol per hour, which constitutes 10ml of pure alcohol, based on an adult weighing 68kg as a result of human bodies being able to only process or break down one unit of alcohol each hour (Koch, 2018). This robust condemnation of driving under the influence of alcohol is reinforced by the confirmatory evidence that alcohol distorts the motorist's focus. Equally, a night of excessive drinking may affect the driver's vision the following morning, as the blood-alcohol level may still be above the legal alcohol consumption limit (Automobile Association, 2013). After the consumption of one unit of alcohol, the probability of being involved in an accident is increased. When motorists are at the legal limit of 0.24mg of alcohol, they are about four times more likely to be involved in an accident (Automobile Association, 2013).

It emerged that the findings of this study found that only a small portion of the crashes, fatalities and injuries are believed to be caused by road infrastructure. Instead, the participants were of the view that most of the road users were not using the road network accordingly, as they do not comply with the rules of the road as specified in the K53 driving manual and outlined in the National Road Traffic Act 93 of 1996. From the findings, it also emerged that road users become impatient and they end up contravening rules and regulations that they should always abide with when they're using the road. The road infrastructure is often damaged by the road users who uses unroadworthy vehicles that causes damage to the road surface, and placing of foreign object on the public road has been seen as a contributing factor. Road users are found to be transporting goods or items that can be spilled or easily dislodged and cause damage to road infrastructure, which is in contravention of regulation 246 of the National Road Traffic Act.

Though poor road infrastructure cannot be completely ruled out, it plays a vital role in ensuring that we have proper and roadworthy vehicles to travel on the country's public roads. Municipal roads are found to be in a disastrous state, which causes damages to vehicles and causing vehicles not to be roadworthy. Most of the municipal roads have potholes, and they are not user friendly. A recommendation is placed that provincial and national government should intervene in municipalities that do not have the capacity to maintain their road infrastructure, as more fatalities and serious injuries are growing within the municipal areas. In their review, McDonald, Goodwin, Pradhan, Romoser and Williams (2015), identified poor hazard anticipation skills as factors determining young drivers' car crash risk. Few training programs have been developed to improve these skills. All studies included in this meta-analysis found that young drivers showed an improvement in anticipating risk. However, none of these studies assessed their long-term effects on road accidents.

Traffic law enforcement officials need to focus more on moving violations, as most motorists must study their pattern of work, where they conduct their daily operations. As a result, they only behave when approaching those identified spots or where they know that there are speed cameras, once they pass those hot spots, they go back to their bad driving behaviour. Moving violations is believed to be the only solution which could help reduce accidents that are needless and occur because of the old style of managing the moving violations, like waiting on a barrier line only for few drivers overtaking on that area whilst they're being monitored. Law enforcement officers should not conduct their duties during certain seasons of the year, like the Easter period and the Festive season. Joint operations with stakeholders are only planned and conducted on fewer occasions as well. As a result, it does not have any impact in reducing road carnage on R546.

While traffic law enforcement can generate revenue, its primary purpose is to ensure road safety. Traffic law enforcement needs to move with technology development and introduce gadgets that will enhance their ways of performing their duties. Utilize gadgets that can record moving violations for court testifying purposes to ensure that reckless drivers are acquitted whilst they have committed such offences but acquitted because of not enough evidence to strengthen cases of such nature. If the agency identifies safety problems from a systemic analysis, the potential safety strategies should address the types of road fatalities that were related to the roadway characteristic risk factors. These strategies may often be engineering improvements related to the risk factors. For example, if an

examination of road fatalities trends may highlight run-off-road crashes, and a systemic analysis would identify the type(s) of road on which run-off-road crashes are likely to occur.

The Govan Mbeki Municipal area, in order to curb road fatalities, needs to consider the following questions when selecting strategies to implement:

- i. Safety effectiveness – How likely will it address the safety problem?
- ii. Public acceptance – How will the strategy be accepted by the public? What kind of marketing will be needed to communicate the intent and benefit of the strategy?
- iii. Stakeholders and partners – Which parties will need to be involved in implementing the strategy?
- iv. Cost efficiency – What kind of return on the dollar would be expected?
- v. Time – How long will it take to implement the strategy?

Communication is critically important for system-level safety strategies. Both the general public and road users affected by the strategy, must understand the benefits. Other public agencies may need to integrate their efforts with the proposed safety strategy. Administrators, lawmakers, and other key decision-making personnel must understand how the strategy will improve road safety for their constituency and bring an overall financial benefit. Evaluating a system-level strategy (e.g., programme or intervention) to determine its effectiveness is a critical but often overlooked step. The RTMC or the Department of Transport should evaluate the effect of the safety strategy using good quality data; ideally the same type of data that was used to identify the safety problem initially. If a programme or intervention is not effective, the overseeing agency should consider why this might be the case. Can the programme be improved, or should other approaches be considered instead? If successful, how can the intervention be institutionalised to ensure long-term support (and therefore lasting change)? Finally, it is important to remember that success or failure in one location does not guarantee the same results at a different location.

A key part of many efforts to improve road safety is by sharing safety messages through strategic communications. This chapter provides the views of the participants regarding factors contributing to road fatalities, as well as any corroboration or arguments based on the findings. Thus, based on the responses as highlighted above, as well as below, there is a need to be provided with strategies that would minimise the rate of road fatalities and one of such, is a strategic communication between and amongst all relevant stakeholders. Strategic communication is a need for stakeholders to communicate clearly to road users. It is important that transportation safety professionals should use this when working with their communications teams to craft and disseminate messages that seek to improve traffic safety culture. A strategic communications programme involves elements of communications, marketing, and public outreach. These components often overlap and are not easily separated into distinct categories with unique functions. Strategic communications are more than the sum of its parts. Rather, it is a structured methodology that fuses messaging with marketing while garnering public support. Several examples demonstrate that strategic communications can result in behavioural changes.

Educating road users on the importance of prioritising their safety at all-times should be the primary goal for those who wishes to become a road user in the ranks of being a driver, commuter and operator. Professionalising driving school institutions is key when you want to build a state of capable safe drivers that will always uphold the rule of law on the road. Obtaining a driving licence needs to be more professional as a way of always promoting safety on the public roads. Drivers needs to undergo proper training to prepare them to be able to always keep a free flow of traffic, obtaining a driving licence should be formalized with the aim of building the driver's ability to face the challenge to drivers when using our public roads.

Analysis revealed that more than 90% of road accidents are caused by human error. The only option to deal with challenges caused by humans, is by filling the need to capacitate drivers to always think before making decisions that can cost them their lives, or that of any other road user. The current K53 driving method has not delivered any positive results beyond our expectations, as learner drivers only study the K53 method to acquire learner licences and driving licences. But there are no control measures to monitor and to ensure that all those new drivers are well trained to become good drivers, who are capable of upholding road safety as their primary responsibility. Efforts of utilising an electronic learner licence test are seen as hindrance for those who want to qualify to be learner drivers. Because that does not allow manipulation of results. If the learner has failed the learner's test, he or she should start afresh with the bookings to sit for the learner's test again. Whereas with the current manual set up, results can be manipulated to pass the learner even if the test has been failed, because it's manually written and marked by the examiner alone. No moderation conducted for the test, and for the fact that it's only one test written, it does not create credible drivers, because if you can cram the answers for the test and pass the test, but remain ignorant about the driving procedures and rules of the road. Since the test is divided into three categories, namely rules of the road, road signs and markings and vehicle control system, at least three separate tests should be written to ensure that, by the time learner license is issued, the learner will have displayed enough competency to be issued with a learner licence.

Furthermore, on the practical driving test, the learner driver should undergo several tests before he can be issued with a driving license. The test should be divided into four categories at least and the following situational test should be conducted by being tested under normal dry weather conditions, under wet or rainy conditions, under high traffic volume and night driving conditions. After a learner has undergone all these tests and found to be competent, then he or she may be issued with a driving license, subject to reviewable conditions and periods. Among the conditions that the driver should adhere to is to not be found committing road traffic

violations during that period. Should the driver be found to have been issued with a traffic violation fine in his first three-year period, his or her license should be suspended for a period not exceeding 6 months. If the driver is found to be a repeat offender, then his or her driving license should be revoked, and the driver should be suspended for a period not exceeding three years, after the completion, he or she will have to undergo the same test starting from a learner's license up to a driver's license. These conditions will not only create competent drivers, but it will also encourage responsible road user behaviour, where any driver will always be cautious when using the road, because he or she will not want to lose his or her driving license, especially if that driving license is a much-needed document in order to obtain employment and to be able to do business. A question asked on Arrive Alive on "how do I become an instructor of driving school?" the response indicated that no formal qualification is required to be an instructor of driving licences. Any person who wishes to be an instructor, can do so by applying at the nearest DLTC and completing a prescribed form and be subjected to a test. Should you pass the test you will be issued with an Instructor Certificate. No study has been done, despite the finds, yet the high level of accidents reveals the need for future a study in this regard, as more studies were focusing more on the causes and impact of accidents, and not specifically on the need to professionalise driving schools as a major step to curb road fatalities.

The strategies of the Mpumalanga Department of community safety, security and liaison are very good at reducing road fatalities in the province and within the Govan Mbeki municipal area. The only challenge is on the implementation part where it shows that they do not have enough resources to fight road crashes effectively to the extent that at times you may travel about 100 kilometres without seeing traffic officers or their patrol vehicles which result in motorists' resolve in doing wrong manoeuvres which risk the lives of innocent road users, who choose to abide by the rules of the road. On the side of vehicle fitness results shows that most traffic law enforcement officials are lacking knowledge with the systematic examination of motor vehicles, as they do not inspect crucial items on vehicles which may result in the occurrence of serious crashes or even the loss of lives. Most of the officials are only trained in the basic Traffic Officers' Diploma, which is not enough knowledge for a traffic officer, to ensure that all vehicles he or she inspects, are fit to be on a public road. No study has been conducted before which focused on the knowledge of traffic officers in depth to be able to systematically examine vehicles., During this study, knowledge evaluation was done between traffic officers who are only trained on the basic traffic course and those who are trained on both the basic traffic officer course and an examiner of vehicles

Traffic law enforcement officials need to focus more on moving violations, as most motorists have studied their pattern of work and where they conduct their daily operations. As a result, they only behave when approaching those identified spots or where they know that there are speed cameras. RTMC Road Traffic Fatality report for 2017 confirms that Accident Statistics reviews for Mpumalanga province and South Africa showed an increase in accidents between Thursday and Monday on weekdays, and currently traffic officers are employed under The Public Service Act, which allows them to work between Monday and Friday. Any work performed on weekends should be remunerated as overtime, therefore the province is currently under financial constraints which makes it unable to pay traffic officers overtime over the weekend. But no further studies were conducted in this regard. Based on the responses and findings, it is evident that law enforcement needs to invest more into technology, so that a data of law enforcement challenges is kept. Furthermore, moving with technology will improve the level of successful prosecution of infringers. Mpumalanga province remains far behind in terms use of technology by roadside officers who must always make inquiries at stations. Meanwhile provinces like Western Cape and Gauteng, can do enquiries on site through the use of technology, without enquiring at their station. Future study should focus on this aspect. Research conducted by the National Road Safety Strategy (NRSS) (2016–2030). According to NRSS (2016–2030), pillars of the United Nations Decade of Action, as indicated by various pillars:

Pillar 1: Road safety management: Road safety management requires that a lead agency be created to lead and monitor the development and implementation of national road safety strategies and targets. The responsibility for road safety is attributed to multiple stakeholders, inclusive of all spheres of Government, public entities and private organisations. In South Africa, the lead agency is the RTMC. It is charged with the Actual Target responsibility to strengthen the relationship between the various stakeholders responsible for road safety, conduct research on road safety-related matters and ensure integration of data management systems.

Pillar 2: Safer roads and mobility: This pillar is based on the safe system approach, which acknowledges that humans are fallible. Therefore, the responsibility for safety on the road, must be shared between individuals and those who design roads, operate and maintain road systems. This will enable a holistic approach to road safety. The following guiding principles are highlighted as important for the creation of a safe system:

- i. People make mistakes, therefore the limits of human performance must be acknowledged;
- ii. people become physically vulnerable when they are involved in a traffic accident, so their tolerance to violent forces is limited;
- iii. everyone must take an individual and shared role in road safety to ensure a shared responsibility;
- iv. there is a need for a forgiving road system which will help to minimise injuries and avoid deaths in the case of a road accident;
- v. a forgiving road system appreciates that human beings have shortcomings and will make mistakes on the road, therefore, transport systems must accommodate these and prevent accidents or serious damages as far as it is possible; and a need for the increased use of public transport, which will reduce the number of vehicles on the road and hopefully contribute to a decrease in road accidents.

Road designs must accommodate human errors and limitations that may result in injuries or death. This requires interventions, such as the identification of hazardous locations, the use of intelligent systems, research and road safety audits on new and/or upgraded roads. A 2014 report from the RTMC as cited in Mofomme (2019:29). indicates that sharp bends were reported as the highest contributor to fatal accidents at 25%, followed by poor visibility and wet/slippery roads at 19.4% each. The safer roads and mobility pillar acknowledges that road design features such as sharp bends, blind corners, etc., contribute to human error and must therefore be addressed.

Pillar 3: Safer vehicles: This pillar focuses on a need for the deployment of improved vehicle technology to save lives in the case of a road accident. Interventions in this pillar include the fitment of protective technologies, such as safety belts and airbags to vehicles. The framework for safer vehicles encourages the development of global safety standards, vehicle safety technologies and incentives to encourage voluntary compliance to road safety. A 2014 RTMC study as cited in Mofomme (2019:30), indicates that issues related to tyres were reported as another one of the highest causes of road accidents. Khorasani, Tatari, Yadollahi and Rahimi (2013:110), assert that Intelligent Transport Systems (ITS) have a great potential to improve road safety for various road users. ITS is defined as: "systems in which information and communication technologies are applied in the field of road transport, including infrastructure, vehicles and users, and in traffic management and mobility management, as well as for interfaces with other modes of transport". Khorasani et. al., (2013:115), argue that technology, such as driver assist systems (which include collision avoidance system, dynamic vehicle control, etc.), can prevent road traffic accidents as they have the potential to prevent human errors. Automation of control functions or some of the functions that were traditionally performed by humans, can contribute to a reduction in road accidents. With the dawn of the 4th industrial revolution, (full/partial) forgiving, driverless cars are entering markets and it can therefore be expected that they will have a positive impact on road safety, as it is intended for them to reduce or eliminate human intervention.

Pillar 4: Safer Road users: The safer road users pillar is aimed at strategies that improve the behaviour and attitudes of road users. Emphasis falls on sustained enforcement of laws and standards as well as road safety awareness and education. According to UK Essays (2018:1), various researchers agree on five factors that contribute to road accidents namely bad weather, the condition of the road, human behaviour, the condition of the vehicle and leniency of law enforcement. The RTMC has classified three factors contributing to fatal road accidents namely human, vehicle and environmental factors. In terms of the RTMC causal analysis of fatal accidents report (Mofomme, 2019), 73.6% of fatal road accidents were as a result of human factors, 14.1% were as a result of vehicle factors while only 12.3% of road accidents were as a result of roads and environmental factors. These statistics are said to compare favourably with international trends in terms of the weight of contributory factors. Regarding improving intergovernmental relations between relevant stakeholders, it emerged from the findings that participants were of the view that improving intergovernmental relations between all relevant stakeholders is a necessity. Getting operators to be held accountable for their fleet that is operated on the public road, every operator should be punished for their vehicle defects, rather than punishing drivers only. Whenever an operator fleet is found not to be compliant with the rules of the road, that operator should be issued with harsh sanctions that will push him or her to ensure that all the fleet is in roadworthy condition and compliant at all times. Such stricter rules will encourage good driver behaviour.

Regulating driving by foreign drivers for a certain period before they can be allowed to drive in the Republic. This should be done to ensure that all drivers using the Republic's Road networks are capable of good driving behaviour whilst they are within the Republic. This should be done with the aim of ensuring that all drivers operating within the Republic are competent and capable. A minimum period of 2 years should be given to foreign drivers so that, for the first 2 years in the Republic they are not allowed to be found driving or operating a motor vehicle on a public road, upon completing a two-year period within the Republic, such driver will be subjected to undergo a prescribed driving test to test his driving ability whether they are suitable for driving within the Republic. This will not only reduce road crashes, but it will alleviate the burden of unemployment to the state. This will ensure that operators are not only concerned about making a profit but are road safety conscious at all times. Mathebula (2011) defines cooperative governance as "a governance philosophy based on a reciprocal obligation of spheres of government to trust, support and assist one another in coordinating service delivery to the community" (Mathebula, 2011:840).

The principle is that the three spheres have an equal obligation to cooperate with one another to provide services to the citizens. The South African model of cooperative governance is entrenched in the Constitution that was adopted in 1996. This model of cooperative governance has three spheres of government, namely national, provincial and local government. Co-operative governance between these spheres of government is important as the programmes of the national sphere are implemented at provincial and local spheres (Coetzee, 2010). The principle of cooperative governance necessitates that the three spheres of government work in partnership and coordination to ensure that the needs of communities at local sphere, are considered by national and provincial spheres (Edwards, 2008). The national and provincial government's constituencies are located at the local sphere and for services of the two upper spheres, national and provincial. To reach the constituencies, there should be coordination and cooperation between the three spheres.

The Constitution, 1996 creates three spheres of government that are distinctive, interdependent and interrelated. The distinctive nature relates to the legislative and executive autonomy that each sphere enjoys in terms of the Constitution (1996). Spheres are given certain powers and functions and enjoy a certain amount of autonomy over matters listed in the Constitution (Coetzee, 2010). The assumption is that the unique location, characteristics and peculiarities of each sphere, will best serve the allocated competencies

(Isioma, 2010). The autonomy, however, is not absolute and the following parameters and principles should be adhered to when exercising the autonomy:

- i. The Constitution defines the autonomy of each sphere and no sphere can claim powers and functions outside the constitutional framework;
- ii. Spheres must respect each other's constitutionally defined autonomy;
- iii. Autonomy should be exercised in a non-divisive manner to promote peace and national unity;
- iv. The autonomy of spheres is bound by the Bill of Rights and Values as enshrined in the Constitution; and
- v. The autonomy should be exercised responsibly in an effective, transparent and accountable manner; (Department of Provincial and Local Government, 2007).

Although the powers and functions of each sphere are clearly outlined in the Constitution, these powers are not absolute and should be exercised in harmony between the spheres in the delivery of services. There are powers and functions, which are the exclusive responsibility of each sphere and some, like some transport services, are shared competencies. While relatively autonomous, spheres of government are interdependent to each other to achieve their delivery mandates and have a responsibility to cooperate with each other because they are also interrelated (Malan & Lianne, 2005). Coetzee (2010) argues that the interrelatedness of spheres mean that each sphere exercises their autonomy under supervision of the other spheres. The supervision is important, in this context, as an oversight mechanism to avoid the abuse of power while ensuring that spheres perform their development agenda and provide services. This supervision happens through support, monitoring and intervention (Department of Provincial and Local Government, 2007). According to Mathebula (2011), the interdependency relates to the degree that each sphere depends on the other for the implementation of their constitutional obligations. In this context, therefore, the Constitution directs that these three spheres must harmonize their activities and relations through consultation, coordination, and cooperation. The system is more about the alignment of activities, rather than competition between spheres. To this end, Reddy (2001, states that cooperative governance is based on the premise that spheres of government will address challenges more effectively if they act in concert than if they are in competition (Reddy, 2001).

Conclusions

This study aims to evaluate the effects of road accidents and identify new tactics aimed at promoting safer behavior among road users. The impact of professional and organizational factors on risky conduct is more significant in comparison to external and personal factors. This particular insight has the potential to offer greater utility to the department in the future, particularly in the context of policy development and the establishment of control measures. By leveraging this insight, the department can effectively mitigate instances of erroneous decision-making and the implementation of solutions that have proven to be ineffective in tackling the issue of road carnage. As technological advancements continue to progress, there is a corresponding requirement for traffic law enforcement agencies to adapt by incorporating advanced equipment and engaging in ongoing research efforts aimed at enhancing road safety. All individuals who are alive are susceptible to respiratory tract infections (RTIs). To minimize the likelihood of becoming a patient with a traffic Traffic Injury (RTI), it is imperative to comply to traffic regulations and adopt lifestyle modifications that address high-risk behaviors. The significance of physicians in such circumstances should not be ignored. Addressing the issue of RTIs necessitates the implementation of a comprehensive, cross-sectoral strategy aimed at enhancing public knowledge and ensuring compliance with the mandated legislation.

The ramifications for managers and policymakers

Traffic law enforcement programs are specifically targeted towards individuals who utilize roadways, with the aim of promoting favorable driving conduct among the general population of drivers. The duty for establishing a safer road network that is user-friendly and supports economic growth lies with both the government and key stakeholders.

The following recommendations are suggested:

It is imperative for traffic law enforcement officials to allocate greater attention to moving offenses. This is because a significant number of motorists have acquired knowledge regarding the established patterns and locations where these officials carry out their daily operations. Consequently, these motorists tend to exhibit compliant behavior just when approaching these designated areas or locations equipped with speed cameras. After traversing these areas of high accident frequency, individuals revert to their previous patterns of reckless driving. It is widely recognized that implementing moving violations is the sole viable approach to mitigate avoidable accidents resulting from outdated practices in managing such violations, such as limited enforcement of barrier lines leading to instances of cars overtaking designated areas. The integration of technological advancements is imperative for traffic law enforcement agencies to expand their operational capabilities and optimize their performance. It is crucial for these agencies to adopt innovative gadgets that can augment their existing methods of carrying out their jobs. This can be achieved by the utilization of technological devices capable of capturing instances of movement violations, which can serve as evidence in court proceedings. By employing such gadgets, the objective is to ensure that drivers who engage in risky behavior are held accountable for their actions, rather than being acquitted due to insufficient evidence to substantiate cases of this sort. It is advisable that a mandatory examiner of

vehicles training program be implemented for all traffic officers. It should be noted that the prerequisite for enrolling in these courses for law enforcement purposes should not be limited to possessing a code A or EC driving license, as these licenses are specifically intended for individuals aspiring to become examiners of motor vehicles and driving licenses, respectively.

Future research in this area:

Given the dynamic nature of contributing elements, it is imperative to engage in ongoing monitoring and develop novel strategies aimed at fostering generational awareness and education via many platforms. It is recommended that the research study be extended to encompass several departments throughout different provinces within South Africa, with the aim of evaluating the ramifications of road accidents inside the Republic. Additional research should be undertaken to tackle the obstacles related to the existing tactics that impede the process of making informed decisions, as these issues were not specifically addressed in the present study.

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