# “Road accidents fatalities trends and safety management in South Africa”


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| **ARTICLE INFO** | Prince Z. Ncube, Priviledge Cheteni and Kholeka P. Sindiyandiya (2016). Road accidents fatalities trends and safety management in South Africa. *Problems and Perspectives in Management*, *14*(3-3), 627-633. doi:10.21511/ppm.14(3-3).2016.05 |
| **DOI** | http://dx.doi.org/10.21511/ppm.14(3-3).2016.05 |
| **RELEASED ON** | Thursday, 10 November 2016 |
| **JOURNAL** | "Problems and Perspectives in Management" |
| **FOUNDER** | LLC “Consulting Publishing Company “Business Perspectives” |

| NUMBER OF REFERENCES | NUMBER OF FIGURES | NUMBER OF TABLES |
|---|---|---|
| 0 | 0 | 0 |



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# Road accidents fatalities trends and safety management in South Africa


## Abstract

Road related fatalities remain high in South Africa compared to other African nations. The purpose of this study was to analyze the determinants of road accident fatalities in South Africa's transport sector. The determinants were examined using the ordinary least squares (OLS) method. The results suggest that drunken driving, paved roads and use of seatbelts are some of the determinants in the number of road related fatalities. The study recommends that the South African government put strict measures in dealing with drunk driving that has contributed to the unnecessary loss of life, especially during holiday periods.


**Keywords:** drunk driving, road safety management, Haddon matrix, enforcement, seatbelts.
**JEL Classification:** O18, R41, Z00, Z18.

## Introduction

The World Health Organization (WHO) pointed out that 1.17 million deaths occur each year worldwide due to road traffic accidents. A breakdown of the figure indicates, however, that about 70 percent of the deaths occur in developing countries. The increased rate of fatal road traffic accidents worldwide has been attributed to population explosion, and increased motorization. Increased motorization may be characterized as the automotive uprising, that is, the motorizing of urban population, especially in the developing countries. Statistics indicate that over 90 percent of traffic accident situations in South Africa can be attributed to driver error (Aworemi et al., 2009).

Road accidents appear to occur regularly at some flash points, such as where there are harsh curves, potholes and at bad sections of the highways. At such points, over-speeding drivers usually find it difficult to control their vehicles, which, then, results in fatal traffic accidents, especially at night (Atubi, 2009). Moreover, cases of fatal road traffic accidents are reported almost daily on the major highways in South African states (Atubi, 2009). According to the Department of Transport, Easter and festive season realize more road traffic fatalities in South Africa and are critical periods for road traffic management authorities. Road traffic fatalities are among the main causes of death in South Africa, resulting in socio economic costs for the country.

South Africa is a signatory to the United Nations (UN) Decade of Action for Road Safety 2011-2020. As such, the country has committed itself at an international level to reducing fatalities by 50 percent by the year 2020. This means that all the critical components that make up the Safe Systems approach under the 5 Pillars of the Road Safety Global Pillar must work in tandem to ensure that the greatest impact is made to offence rates and road traffic crash casualties. The International Transport Forum (ITF) 2013 Road Safety Annual Report ranked South Africa the worst out of 36 countries in Africa, when it came to the number of road fatalities. Road fatalities per 100 000 inhabitants were at 27.6 deaths in 2011, a shocking statistic when compared to developed countries in North America with 10.4 or Australia with 5.6 (Steyn, 2013).

The Transport Minister, Dupio Peters, released the preliminary festive season road accidents from December 2013 to January 2014. In this period only, South Africa recorded 1147 crushes nationally which claimed 1376 lives (SAPA, 2014). These have had grave social and economic consequences for South Africa as a country. Social consequences take account of the loss of family members, bread winners and leave behind traumatized families. Currently, South Africa's road fatalities remain unacceptably high at 40 road related deaths a day, and they cost the country more than ZAR 3 billion each year diverting scarce resources from other social and economic needs of the country (S.A. government online). Nonetheless, few studies have focused exclusively on road accident trends or safety management in South Africa. The current study aims to bridge this gap by focusing on the road accidents trends and road safety. This is a huge contribution on road safety management. Given such a high fatality rate with such grave consequences, economically the question arises of what are the causes or determinants of road accident fatalities in South Africa? In addition, how best can the government improve road safety management?

Thus, the current study aims to identify the likely causes of road fatalities in South Africa using statistical tools. In the same vein, the study seeks to answer the following research question: What are the main determinants of road accident fatalities in South Africa? What can be done to improve road safety management in South Africa?

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The paper is organized as follows: section 1 focuses on road accidents trends and road safety management in South Africa, section 2, then, provides the methods used to analyze the determinants of road accidents fatalities, section 3 provides the findings and discussion of the results, and the last section concludes the paper.

## 1. Literature review

Haddon (1980) works stand out as one of the most valuable contributions in road. The Haddon matrix is popularly used as a tool to assist in developing ideas to preventing injuries. Four columns and three rows are combined to identify factors contribute to injury. Table 1 illustrates the Haddon matrix.

Table 1. Haddon matrix

| Phase | | Human factors | Vehicle and equipment factors | Environment factors |
|---|---|---|---|---|
| Pre-crash | Crash prevention | Training and education/ attitudes/behavior | Road worthiness system (lights, brakes, etc) | Road designs, markings maintenance |
| Crash | Injury prevention | Use of restraint impairment | Crash worthiness maintenance | Protection, pedestrian crossing |
| Post-crash | Life sustaining | First aid skill/ access to medics | Ease of access/ fire risk | Rescue facilities/ congestion |

Source: Haddon (1980).

The matrix demonstrates that there are phases in road safety and the likely solutions to preventing such accidents. For instance, in the pre-crash phase, human factors such as training and education on road users prevent crash. Yet, the vehicle should be checked for worthiness in order to prevent crash. In terms of the environment, road sign designs and markings should be very clear and easily readable for drivers and pedestrians. On the other hand, after the crash, human factors such as first aid and medics are crucial in sustaining life. Yet, rescue facilities should be activated immediately to facilitate life sustenance. Therefore, following other studies, this paper draws some of the inputs in road safety management from this framework.

**1.1. Determinants of road accident fatalities in South Africa.** The number of road accident related fatalities in South Africa has been on the increase since 1980. According to Kopits and Cropper (2005), economic growth inevitably leads to a growth in motor vehicle ownership and urbanization, which increases probability of accidents. However, growth started to slow down with the onset of the economic downturn in late 2008. Between 2008 and 2009, nearly 284 000 new vehicles were registered, 244 000 being motorised and 40 000 towed vehicles (Kopits and Cropper, 2005). Due to this increase in motorization as South Africa's economy grows, the number of road accident fatalities increase. Figure 1 depicts that during the period before 1990, we observe that road accidents related number of fatalities were lesser, because it was apartheid and most of the natives never had access to jobs that could afford them cars. However, we see a rampant rise after 1990 the lowest recorded number of fatalities was in 1980 with a value of 84, and the highest was experienced in 2004 with 325 deaths. Within 20 years, the number of road fatalities has more than tripled.

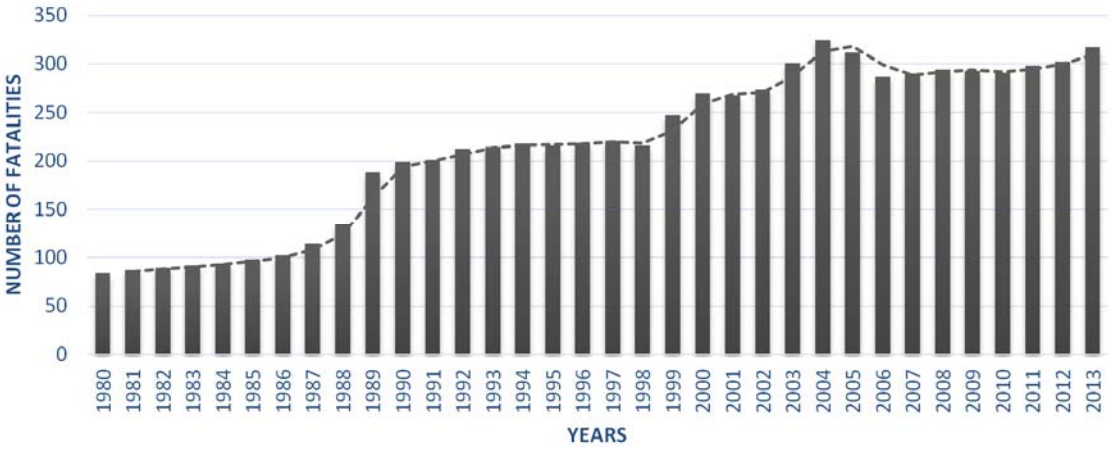


**Fig. 1. Number of road accident fatalities in South Africa**

Source: World Bank (2014).

Road traffic crashes result from a combination of factors related to the components of the system comprising roads, the environment, vehicles and road users, and the way they interact (Stone, 2009). Some factors such as the level of driver training, the general attitude of drivers, driver behavior, and the level of driver self-discipline contribute to the occurrence of a collision and are part of crash causation. Other factors such as over-speeding and reckless driving aggravate the effects of collision and, thus, contribute to trauma severity, whereas some factors may not appear to be directly related to road traffic injuries (Stone, 2009).

However, some causes are immediate, but may be underpinned by medium-term and long-term structural causes. Identifying the risk factors that contribute to road traffic crashes is important in identifying interventions that can reduce the risks associated with those factors.

**1.2. Road accident fatalities.** Road traffic accidents are believed to have varying causes. Hence, the ultimate aim of all road traffic research and intervention is, to some extent, to identify and reduce these causes as much as possible. These causes may be complex in nature and are often perceived to be impacted by science and politics (Elvik & Vaa, 2004). A determinant or factor is a circumstance that contributes to an accident. A combination of determinants or factors such as speed, driver capability, vehicle condition and environmental conditions all come into play. While human error is found to be the most frequent contributing factor to road accidents, vehicle defects are reported as playing a role much less frequently. For example, the *"Arrive Alive Campaign"* revealed that vehicle defects were a contributory factor in 7 percent of the 2833 fatal crashes that occurred during the period October 1997-January 1998. This may not seem substantial, but if one considers that 3001 people died in those fatal accidents, the lives of approximately 210 people may have been saved if the vehicles were totally roadworthy.

**1.3. Speeding fatalities.** Speed has dire consequences and it activates other factors of road accidents. Excessively high speeds encourages further transgression of the law, such as ignoring red robots and unsafe overtaking, as well as aggravating the effect of all the other contributory factors to road crashes (Taralyn, undated). For example, driving at an excessive, inappropriate speed at night and encountering a slow moving vehicle with faulty lights; or a stray animal or a drunk pedestrian, greatly reduces the response time and decision making for a driver in a fast moving vehicle. In order to effect a lasting change in the current road safety situation, all of these issues should be vigorously addressed and improved.

According to the National Fatal Accident Information Centre (NFAIC) at the Department of Transport, the number of fatal crashes that occurred due to excessive speeds, increased by 1,093 (46.10%) from 2,370 in 2003 to 3,463 in 2004. In 2003, fatal crashes in which speed played a role were 23.24% of a total of 10,246 fatal crashes. In 2004, fatal crashes in which speed played a role increased to 32.94% of 10,523 fatal crashes. The estimated number of fatalities resulting from speed-related fatal crashes increased by 1,326 (46.41%) from 2,857 in 2003 to 4,183 in 2004. From 2003 to 2004, there was a national average increase of 0.21% in the severity of fatal crashes (the average number of persons killed per crash). The severity is, amongst others, dependent on the speed at which crashes happen, the higher the speed the bigger the impact, resulting in an increase in the severity rate. One Province which is Western Cape showed an increase of 12.28% in the Provincial severity rate from 2003 to 2004. This province also showed an increase of 63.17% in speed related crashes from 2003 to 2004. During an in-depth investigation into speed profiles on the national road network during 2004, it was found that the province mentioned above also had the highest percentage of excessive speeds in the country (Dembovsky, 2014).

Although, the speed fatality statistics are from the 2003 to 2004 period, the numbers has swelled in the past years. The main challenge is getting the latest data to generate those statistics. Nonetheless, road accidents have been a major contributor in a number of deaths in South Africa.

**1.4. Drunk driving.** The South African Road Traffic Act 93/96 has been in effect since March 1998. Whether you are driving in your home town or on roads foreign to you in a car hire vehicle, these laws are extremely important to uphold. The legal blood alcohol limit in South Africa is less than 0.05 g per 100 ml. The legal breath alcohol limit in South Africa is less than 0.24 mg in 1000 ml of breath. In simple terms, this means that 2 drinks over the space of 1 hour will put you over the limit (news24). It takes your body approximately 1 hour to process 1 unit of alcohol. According to Dr Charles Parry of the Alcohol and Drug Abuse Research Group under the Medical Research Council (MRC), 40% of drivers who die on the road, have alcohol levels in excess of 0.08 gms / 100 ml.

According to the National Traffic Act 1996, if in any prosecution for a contravention of the provisions of sub-section (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 grams per 100 millilitres at any time within two hours after the alleged offence, it shall be presumed, until the contrary is proved, that such concentration was not less than 0.05 grams per 100 millilitres of blood at the time of the alleged offence.

*1.4.1. Penalty for drunk driving.* Driving under the influence of alcohol in South Africa is not to be taken lightly. The gravity of the charges should be enough to sober you up to its fatal consequences. Getting caught driving under the influence of alcohol means you will need to appear in court. If you're found guilty, you could face up to 6 years in jail. You could also be liable for fines of up to ZAR 120 000 and your driver's license may be suspended. You will also have a criminal record which can have serious ramifications for the rest of your life. Of course, the worst case

scenario is that you could kill someone else on the road, your loved ones or yourself.

"Drunk driving is one of the biggest threats to Road Safety in South Africa" says Gary Ronald, Head of Public Affairs for the AA (Automobile Association of South Africa). "More than 21,000 people have been arrested on our roads in the last year as a result of drinking and driving and it has been shown that 50% of people who die on our roads are over the limit" (Automobile Association of South Africa, undated).

Alcohol significantly slows one's reaction time and distorts their vision, and the effects of a heavy night of drinking could well affect one's driving ability the next morning, and you may still even be over the legal limit. After only one unit of alcohol, one's chances of being in an accident are doubled, and when one is at the legal limit of 0.24 mg, they are four times more likely to be in an accident.

Drunk driving has reached alarming levels in South Africa. Drunken driver has gone past the halfway mark, three quarters of South Africa's drivers, drive under the influence of alcohol. Since 1996, the rate at which drivers drive drunk has been in the 70% mark. In the 1980s, only 30 percent of the drivers drove under the influence of alcohol, but, to date, this rate has more than doubled. The highest recorded rate was in 2000 where about 75% of South Africa's drivers drove drunk. This is shown in Figure 2.

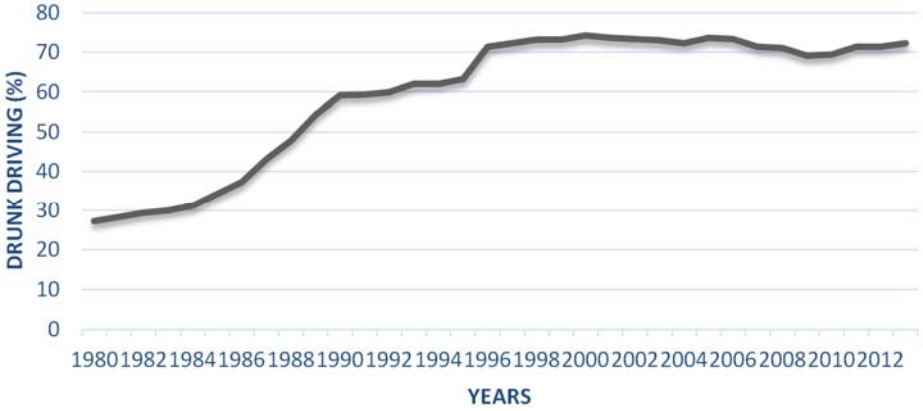


**Fig. 2. Percentage of drunk driving in South Africa**

Source: World Bank (2014).

## 2. Methodology

This section provides information pertaining the model, which was used to analyze the determinants of road accident fatalities in South Africa.

**2.1. Model specification and definition of variables.** This study adopted a model used by Thoresen et al. (1992) who modelled the number of fatalities as a function of breath testing (drunk driving), seatbelts, speed camera operations, and red light cameras. Using the OLS and Maximum likelihood estimation techniques to identify the determinants of road accident fatalities, Thoresen et al. (1992) developed the following equation:

$$NOF = \beta_0 + \beta_1 rbt + \beta_2 speed + \beta_3 red + \\ + \beta_4 sbelt, \quad (1)$$

where:

*NOF* = number of fatalities;
*rbt* = number of random breath test infringements;
*speed* = speed camera infringements notices issued;
*red* = number of red light camera infringements;
*dsbelt* = seat belt wearing rate.

This study, however, only uses the OLS, and incorporates 3 more variables to the Thoresen et al. 1992 model. This study, therefore, estimates the following equation:

$$NOF = \beta_o + \beta_1 PRS + \beta_2 DD + \beta_3 PVR + \beta_4 SB + \mu, \quad (2)$$

where (NOF) is the number of fatal road accidents, (PRS) presence of road safety, this comprises the speed cameras, red lights, etc., (DD) drunk driving (as % of total drivers on the road), (PVR) paved roads, (as % of total roads network), (SB) seat belts usage (as % of people in cars on the roads). However, the research will use a double logarithm (log) equation of this form

$$LogNOF = \beta_0 + \beta_1 LogPRS + \beta_2 LogDD + \\ + \beta_3 LogPVR + \beta_4 LogSB + \mu . \quad (3)$$

The study used annual data from the period 1980-2012, which were retrieved from the South Africa Reserve Bank database and Knoema.com. The expected signs of the variables are shown in Table 2.

Table 2. Summary of expected signs

| Explanatory variables | Measured by | Expected signs |
|---|---|---|
| LogPRS | Presence of road safety | - |
| LogDD | Drink and driving | + |
| LogPVR | Paved road | - |
| LogSB | Seat belts | - |

**2.2. Estimation technique.** This study used the Augmented Dickey-Fuller unit root tests for stationarity. Variables are tested for stationarity, because most economic series data are none-stationery, and frequently lead to spurious estimation. The Dickey-Fuller test, as with any other unit root test, has its own weaknesses. According to Gujarati (2003), most tests of the Dickey-Fuller have a low power. This means that they tend to accept the null of unit root more frequently than is warranted. It is also important to note that the Dickey-Fuller test is weak in its ability to detect a false null hypothesis. Its major weakness is that the Dickey-Fuller test does not take account of possible autocorrelation in error process, $\varepsilon_t$. The consequence of this is that the OLS estimates of coefficients will not be efficient, consequently, the t-ratios will be biased. This gives the reason why the Augmented Dickey-Fuller test is preferred to the Dickey-Fuller test. The ADF test here consists of estimating the following regression:

$$\Delta Y_t = \beta_1 + \beta_{2t} + \delta Y_t - 1 + \sum_{(i=1)}^{m} \alpha \Delta Y_t - 1 + \varepsilon_t, \quad (4)$$

where $\varepsilon_t$ is a pure white noise error term and where

$$\Delta Y_{t-1} = \left(Y_{t-1} - Y_{t-2}\right), \ \Delta Y_{t-2} = \left(Y_{t-2} - Y_{t-3}\right), \text{ etc.}$$

The number of lagged difference terms to include is often determined empirically, the idea being to include enough terms so that the error term in (3) is serially uncorrelated. In the ADF, we test whether $\delta = 0$. The calculated value of ADF is, then, compared with the critical value.

**2.3. Stationarity on residuals.** The results of the ADF test are shown in Table 3.

Table 3. Results of ADF test

| Augmented Dickey-Fuller | | | | | |
|---|---|---|---|---|---|
| Variable | | Intercept | Trend and intercept | None | Order of integration |
| LOGNOF<br>DLOGNOF | | -1.945321<br>-3.590469* | -0.882241<br>-5.601482** | 1.580323<br>-3.032234** | Level<br>1st difference |
| LOGPRS<br>dLOGPRS | | -1.290039<br>-6.193128** | -2.727665<br>-6.095520** | 1.166117<br>-5.982332** | Level<br>1st difference |
| LOGPVR<br>dLOGPVR | | -2.674300<br>-5.458608** | -3.268915<br>-5.457966** | -0.193854<br>-5.552696** | Level<br>1st difference |
| LOGDD<br>dLOGDD | | -3.714882**<br>-2.625876* | -0.678937<br>-3.521612* | 0.9288<br>-2.237029* | Level<br>1st difference |
| LOGSB<br>dLOGSB | | -2.865643<br>-3.555087* | -2.315824<br>-3.978929* | -1.869948<br>-3.799701** | Level<br>1st difference |
| Critical Values | 1% | -3.646342 | -4.262755 | -2.639210 | |
| | 5% | -2.954021 | -3.552973 | -1.921687 | |
| Values marked with * represent a stationary variable at 5% significance level and ** represent a stationary variable at 1 % significance level | | | | | |

The results show that the null hypothesis of non-stationarity cannot be rejected when variables are at levels. All first differenced variables on intercept are stationary at 5% significance level excluding for LOGPVR and LOGPRS which is stationary at 1% significance level. On trend and intercept all variables are stationary at 1% level of significance except LOGDD and LOGSB which is stationary at 5%. When first differenced, all variables under no trend and no intercept test are stationary at 1% significance level save for LOGDD. All the five variables became stationary after differencing them once.

**2.4. Diagnostic tests.** The Bera-Jarque (BJ) test is among the most commonly used tests for normality. It tests the null hypothesis of normality (symmetric) against an alternative on non-normal (skewed). The Jarque-Bera statistic is not significant (0.875817) at 5 percent significance level, we fail to reject the null hypothesis and conclude that the residuals are normally distributed. Secondly, the study used the Breusch-Godfrey Serial Correlation LM Test. The null hypothesis states that there is no serial correlation of any order against an alternative of correlation existing. For the Breusch-Godfrey Serial Correlation LM Test, the *p*-value of the F statistic is 0.996792, which is not significant at 5% percent implying that we fail to reject the null hypothesis of the existence of serial correlation. We, therefore, conclude that there is no serial correlation amongst the residuals. Lastly, in order to test for heteroscedasticty, a White test was used. The null hypothesis for the White test states that there is homoscedasticity (meaning there is no heteroscedasticity) of residuals, and if we fail to reject the null hypothesis, then, we have homoscedasticity. If we reject the null hypothesis, then, we have heteroscedasticity. The tests showed the F-statistic of 0.825586 and the Prob. of 0.637376 which means at 5% level we fail to reject the null hypothesis, since F statistic is greater than F critical. Therefore, the residuals are homoscedastic.

**2.5. Model estimation.** Number of fatalities in the transport sector was regressed against four explanatory variables presence of road safety, paved roads, drunk driving and seatbelts. Ordinary least squares (OLS) method was employed since the goal of minimizing the summed squared residuals ($\Sigma e_i^2$) is rational for an estimation technique. Table 3 illustrates the OLS estimation results.

Table 4. OLS regression

| Variable | Coefficient | t-statistic | Prob. |
|---|---|---|---|
| C | 0.003360 | 0.673421 | 0.5062 |
| DLogPVR | -0.075123 | -2.001539 | 0.0551* |
| DLogPRS | 0.251048 | 1.644343 | 0.1113 |
| DLogDD | 0.619521 | 2.805740 | 0.0090** |
| DLogSB | 0.419833 | 3.015200 | 0.0054** |
| Values marked with * represent a stationary variable at 5% significance level and ** represent a stationary variable at 1 % significance level | | | |

| | |
|---|---|
| R-squared | 0.521946 |
| Adjusted R-squared | 0.503653 |
| S.E. of regression | 0.023433 |
| F-statistic | 7.642703 |
| Prob(F-statistic) | 0.000270 |
| Durbin Watson | 1.998138 |

The estimated equation can now be represented using the regression results as follows:

$$\log NOF = 0.003360 - 0.075123 \log PVR + \\ + 0.251048 \log PRS + 0.619521 \log DD + \\ + 0.419833 \log SB + \mu.$$

To begin with, the -2.001539 t-statistic corresponding to paved roads (PVR) is greater than the standard critical value of t of |2|, thus, showing that LogPVR as an explanatory variable is statistically significant in explaining the changes in the dependent variable, number of fatalities. The 0.0551 *p*-value corresponding to paved roads indicates that changes in the variable are statistically significant in explaining changes in overall number of fatalities at five percent level of significance. As stated in the expected, a prior negative relationship between paved roads and number of fatalities is theoretically accepted. LogPVR, therefore, has a negative coefficient which is -0.075123 showing a negative relationship between paved roads and number of fatalities whereby a percentage increase in paved roads will result in an approximately 8% decrease in the number of fatalities. This relationship between LogPVR and LogNOF reinforces the hypothesis of this study which argues that presence of paved roads has an impact on road safety.

Moreover, the t-statistic 1.644343 corresponding to the presence of (PRS) road safety measures' coefficient is less than |2| the standard critical value of t reflecting that this explanatory variable does not account for much of the changes in number of fatalities. The *p*-value 0.1113 explains that the presence of road safety measures is statistically insignificant in explaining changes in number of fatalities at five percent level of significance. The coefficient for presence of road safety is 0.251048 and it has a positive sign which shows that there is a positive relationship between LOGPRS and LOGNOF. However, this is unexpected, but it might be possible due to the fact that presence of road safety measures can increase, but due to bribery, policeman can look aside, making their impact insignificant in determining number of accident fatalities.

However, the t-statistic corresponding to drunk driving employed is greater than the standard critical value of t of |2|, thus, showing that LOGDD as an explanatory variable is statistically significant in explaining the changes in the dependent variable, number of fatalities (LOGNOF). In other words, LOGDD is accounting for much of the changes in LOGNOF. Its *p*-value of 0.0090 reinforces that this explanatory variable is statistically significant in explaining changes in number of fatalities at five percent level of significance. In this instance, the coefficient of 0.619521 has the expected positive sign showing a positive relationship between LOGDD and LOGNOF, whereby a percentage increase in LOGDD will result in a 62 percent increase in the number of fatalities. This relationship between LogDD and LogNOF does reinforce the hypothesis of this study which argues that drunk driving is a determinant of road accidents that impacts on number of fatalities.

The seatbelt (LOGSB) t-statistic of 3.015200 is more than the standard critical value of t of |2| which also entails the statistical significance of LOGSB in explaining changes in LOGNOF. This reflects that this explanatory variable is, indeed, accounting for much of the changes in number of road accident fatalities. The 0.0054 *p*-value corresponding to use of seatbelts shows those changes in the variable are statistically significant in explaining changes in number of fatalities at five percent level of significance. However, the 0.419833 coefficient has a negative sign when the expected sign is positive. This negative relationship between the two fails to reinforce the study's hypothesis.

Lastly, holding other things constant when all independent variables are equal to zero number of fatalities is equal to 0.0030 units. The t-statistic of 0.673421 is less than the t critical value of |2| showing the constant is statistically insignificant in explaining number of fatalities and also the *p*-value of 0.5062 underpins this, since it is insignificant at 5%. Thus, the constant fails to explain changes in number of fatalities when all explanatory variables are not available.

## Conclusions, policy recommendations and limitations

The main objective of this study was to identify the determinants of road fatalities in South Africa. According to the results, the explanatory variables carried coefficient signs that confirmed to economic theory except for seat belt usage. The study successful pointed out that paved roads reduce the number of road fatalities. Furthermore, in South Africa, a number of fatalities are caused by drunk driving, as shown by the variable LOGDD. However, several policy implications arise when looking at the results presented by the study. Policy makers may need to consent with the fact that deaths due to road accidents are real, despite the fact that they have tried so much to put safety measures in place to curb them. Based on the results, paved roads have been identified as a significant factor to fatalities, hence, it would be recommended that government would not only specialize on maintaining the already paved roads, but also to invest in building more paved roads, as compared to the current status. Especially in rural areas, most roads are gravel and this could exacerbate the number of fatalities nationwide. Law enforcement agencies have to invest more effort in enforcing seatbelt law. This may be done by raising the fine for not wearing a seatbelt. To ensure more people use seatbelts, the government through its public road safety campaigns must educate people more on the importance of seatbelt usage, and its dire consequences, if ignored. Lastly, South Africa's drink-drive limit is already lower (0.05) compared to other countries like the UK (0.08) and, yet, it still causes problems. However, according to Dr O'Hanley, ones vision starts to be impaired at 0.03 and the steering accuracy decreases at 0.035. It is recommended that South Africa lowers the 0.05 drink-driving limits to reduce number of fatalities caused by road accidents.

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