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EXPLORING THE CAUSES OF ROAD TRAFFIC ACCIDENTS IN URBAN GAMBIA FROM 2014 TO 2018

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Images of Road Traffic Accidents in Urban Gambia (source: Foroyaa Newspaper and Online News)

Abstract

The study explores the causes of road traffic accidents (RTAs) in Urban Gambia (Banjul-Bwiam). The research was guided by three research questions. RTA data on four variables; causes of RTA, gender of victims of RTA, magnitude of RTA and region RTA occurred over a period of 5 years (2014-2018) was obtained from the Gambia Police Force Mobile Traffic Head Quarters in Kanifing. The data was analysed using Origin 6 Professional and results obtained showed that; human factors accounts for 96.20%; mechanical errors accounts for 3.80%. There was no record on environmental factors. 54.31% of the victims were males while females were 45.69%. Out of the 3,399 cases of RTA reported over the period, 378 were fatal representing 11.12% while 3,021 were nonfatal (minor and non-injuries) representing 88.88%. Based on the results obtained, recommendations are given that can ensure efficient driving and sustainable reduction of RTA.

Key words: Road, Traffic, Accident, Fatal, Nonfatal, Human, Mechanical, Environmental, Banjul, Kanifing, West Coast Region.

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INTRODUCTION

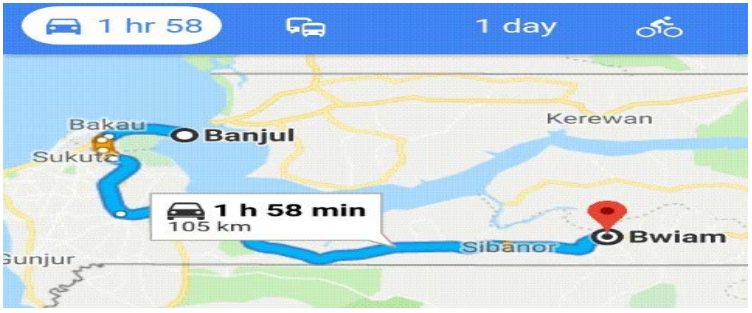
Road traffic accidents (RTAs) are contributing factors to deaths, serious injuries and loss of properties in the Gambia. In 2017, the World Health Organisation ranked RTAs number 7 causes of death in the Gambia [1]. Environmental factors such as poor visibility are among the causes of RTAs in the Gambia [2].50% of RTAs in the Gambia in 2016 were due to negligence of drivers and mechanical factors accounted for 17% [3]. The

fatality of RTAs in the Gambia is on the increase as noted by [3]. 7,750 RTAs were reported in the Gambia between 2000 and 2009. 618 out of the 7,750 RTAs were fatal, putting Gambia at a rate of 8% fatal RTAs within a period of 10 years. The 2002 global record estimates that 73% of RTAs worldwide were male [4]. A 2016 study on RTAs in the Gambia reveals that 67% of RTAs involved pedestrian and motorized 2 wheeler users, 34% involved students less than 14 years and over 74% of the total RTAs occurred between Mondays and Fridays [2]. There is an increase in the number of registered vehicles in the Gambia from 17,416 in 2009 to 54,471 in 2013 [5]. As at 2018, Gambia enjoys a road network of 1,768.84 of which 934.455Kms is paved representing 52.8% of the total length of roads. The length of primary and secondary roads is 817.8 and 629.285 respectively [6]. Gambia has two primary road networks: one in the North Bank and another one in the South Bank both linking Banjul to other parts of the country. The Gambia Motor Traffic Act was ratified by an

act of parliament in 2008; the act dictates that no more use of cellphones while driving and compulsory use of seat belts for drivers and front seat users [7]. Driver training and testing in the Gambia is not standardized; driver training is usually done in football fields, testing is limited to a practical test conducted away from traffic, seatbelt is enforced strictly, drink-driving moderately and child restraint rarely [8]. RTAs worldwide have increase to 1.25 million per year with the highest fatal and nonfatal rates in developing countries [9]. This sprawls the need to take swift action in order to achieve the road safety agenda adopted for sustainable development by 2030, which is reducing the global number of RTAs by 50%. RTAs are ranked number one cause of death in the world among people aged 15-29, they are also reported to be the top 3 causes of death among people aged 15-44 [9]. Africa recorded the highest fatal RTAs in 2013 at 26.6 per 100,000 populations [9]. Impacts between vehicles leaving the road and solid roadside objects such as trees, electric poles and

road signs are a major road safety problem worldwide [8]. Improper constructions of roads, bad traffic policies, faulty vehicles, rainfall, heavy wind, earth quake and competition among road users are major factors responsible for the ever increasing RTAs in developing countries [10]. Economic crime, inaccurate keeping of data and lack of monitoring and reporting culprits in middle income countries are key factors responsible for the escalating fatal and nonfatal RTAs [11]. Sustained economic growth, urbanization and increase in the number of vehicles in developing countries have put a measurable burden on our roads [10]. This has increase road traffic congestion resulting in the ever increasing RTAs in third world countries because those roads were not designed to accommodate that large volume of vehicles [10]. With rapid population growth and increase in the number of vehicles, the phenomenon of road traffic congestion is expected to be an increasing burden on Gambian roads particularly in the urban Gambia. Gambia does not have road safety policy lead agency and

action plan, but there are limited safety activities; police investigates and record all accidents, the reporting system is standardized throughout the country but it is not computerized [12]. This research focuses on the causes of RTAs and is limited to Urban Gambia (Banjul-Bwiam) where over 60% of the population in the Gambia resides. There are more road users and vehicles in Urban Gambia thus the phenomenon of traffic congestion and RTAs. The research is also limited to the period 2014-2018 and data collected was with special reference to this period.



The figure above shows a goggle map of Urban Gambia (Banjul-Bwiam)

RESEARCH QUESTIONS

The research aims to answer the following questions:

1. What are the causes of road traffic accidents in urban Gambia from 2014 to 2018?
2. What categories of people (male/female) are most affected by road traffic accidents in urban Gambia from 2014 to 2018?
3. What is the trend of road traffic accidents in urban Gambia from 2014 to 2018?

RESEACH PROBLEM

While some research has been done on road traffic accidents in the Gambia, no research found that explores in-depth the major causes of road traffic accidents in Urban Gambia from 2014 to 2018. The study aims to close this gap. Also, the rate of road traffic accidents in the Gambia steadily increases from 27 per 100,000 of populations in 2007 to

43.85 per 100,000 of populations in 2017 [1], which shows a significance increase of 16.85 percent within a period of 10 years. There is a need to investigate the reason behind this trend.

METHODOLOGY

Definition of Variables

1. Human Errors: faults from drivers; over speeding, U turning at critical points, wrong parking, driving under the influence of drugs, driving while on mobile phone and competition with other road users.
2. Environmental Errors: conditions of the road (narrow, has ditches, bumpy etc), infrastructural failure and weather conditions.
3. Mechanical Errors: Faulty tyres (both inner and outer), faulty brakes, faulty side lights (both front and back) and lack of or faulty side mirrors.

4. Magnitude of RTA: Fatal including deaths and disabled, and nonfatal including minor and no injuries

Variables and Data Sources

The records of all RTAs in Urban Gambia during the period 2014-2018 were obtained from the Gambia Police Force Mobile Traffic Head Quarters in Kanifing. These records contained data on causes of RTAs, month and year RTAs occurred, gender of victims of RTAs, magnitude of RTAs and Region RTAs occurred. Data at the Gambia Police Force Mobile Traffic Head Quarters were submitted by major police stations in Urban Gambia including Banjul, Serrekunda, Brikama, Kanifing, Kotu, and Brusubi. However, the research team needed data on age of victims/drivers involved in RTAs, type of vehicle involved, time the accident occurred but these were not recorded. The individual reports were collated by the research team.

DATA ANALYSIS

1. Causes of RTAs

Figure1: *Graphical representation of the causes of RTAs from 2014-2018*

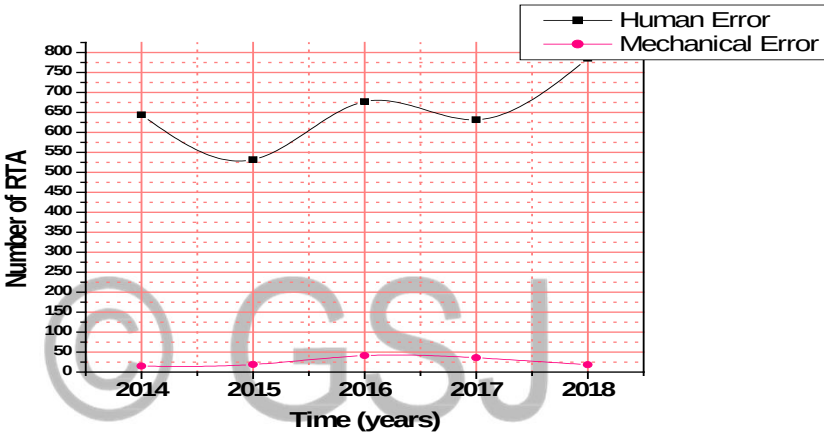


Figure1: From the chart above, causes of RTAs reported within the period as human errors were 3,270. These includes reckless driving, wrong parking along the tar road, over speeding and competition among drivers. Mechanical factors accounts for 129 cases. These according to recorded data were mainly break failure and bad tires. However, records do not capture any environmental factors that lead to accident within the period under review.

2. Gender of victims of RTAs

Figure2: *Graphical Representation of victims of RTAs by gender from 2014-2018*

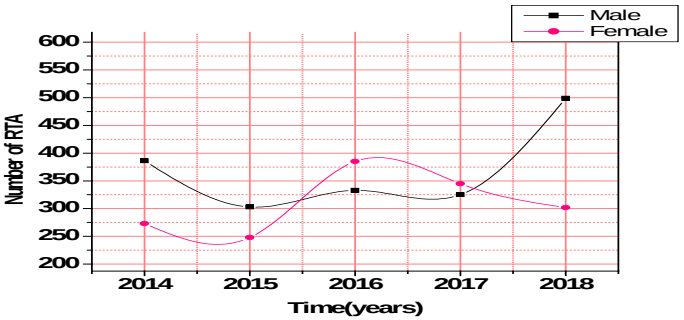


Figure2: This chart indicates that the rate at which males and females are affected by TRAs is not steady. Overall, males are the most affected accounting for 1,846 cases while females recorded 1,553. The number of females involved in RTAs from 2015 to 2016 increases by 137. There was a sharp decrease of 43 in the number of female cases between 2017 and 2018, while the number of male cases increases by 174 in the same period.

3. Magnitude of RTAs

Figure3: *Graphical representation of the magnitude of RTAs from 2014-2018*

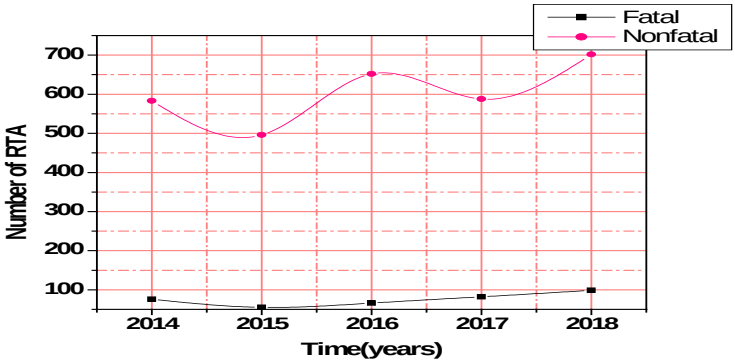


Figure3: The figure shows that 378 of the total cases of RTAs reported over the period are fatal which according to the police records includes serious injuries and deaths. Nonfatal cases were 3, 021 which includes minor and no injuries.

4. Region

Figure4: *Graphical representation of RTAs by region from 2014-2018*

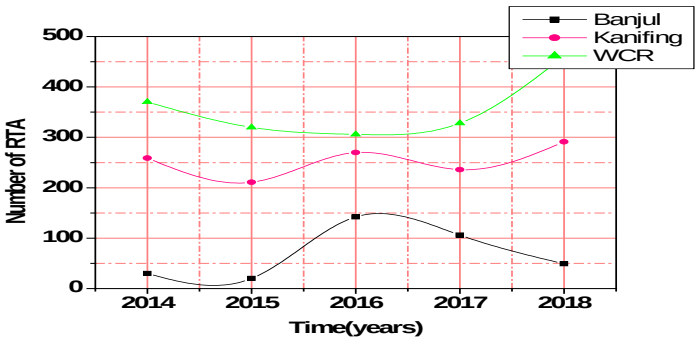


Figure4: Showing Banjul, Kanifing and West Coast Region. From the chart, Banjul region is the least affected with 347 followed by Kanifing with 1,267 and West Coast Region recorded the highest with 1,785. The rate of RTAs was not steady in all the three regions during the period 2014-2018.

5. Trend of RTAs

Figure5: *Graphical representation of the trend of RTAs from 2014-2018*

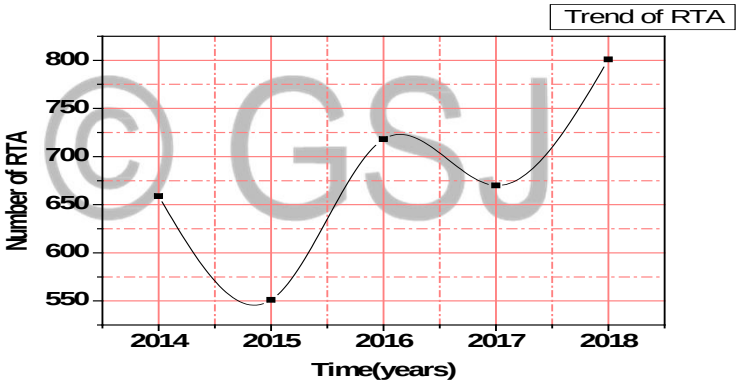


Figure5: From the figure above, RTAs steadily decrease from 659 in 2014 to 551 in 2015. RTAs are seen to be higher in 2016 and 2018 by 718 and 801 respectively.

DISCUSSION OF FINDINGS

The results of the analysis showed that 96.20% of the RTAs cases recorded between 2014 and 2018 were as a result of faulty driving. Since the main reason for RTAs is human error, autonomous vehicles will significantly reduce the number of accidents [13]. Only 3.80% of the cases were as a result of mechanical failures. There was no record on environmental factors. The number of human errors is worst compared with results of [3] which suggests that 50% of RTAs in the Gambia in 2016 were due to negligence of drivers while mechanical errors accounts for over 17%. Findings of [10] suggest that human and mechanical factors accounts for over 57% and over 93% when combine with other factors in Nigeria. The results of the study also showed that the overall male and female cases recorded over the period were 1,846 and 1,553 respectively, which indicates a ratio of 1:1. This contradicts the findings of [3] which showed the ratio of male to female victims to be 3:1 in the Gambia in 2016. Analysis of the results by region showed that West Coast Region recorded the highest number of cases representing 52.52%. Kanifing recorded 37.28% of the total cases and Banjul recorded the least number of cases representing 10.21%. The results are logical because Banjul is the smallest followed by Kanifing

and West Coast Region in terms of land size and population wise. Out of the total number of RTAs (3,399), 11.12% were fatal. The remaining 3,021 cases were nonfatal which represents 88.88%. The trend of RTAs over the period was not steady as shown by the results of the analysis. 2014 (19.39%), 2015 (16.21%), 2016 (21.12%), 2017 (19.71%) and 2018 recorded the highest (23.57%). Review of data published by Gambia Bureau of Statistics reveals that the number of fatal RTAs in the Gambia increases from 123 in 2017 to 141 in 2018 [6]. This is similar to the results of this research; fatal RTAs increases from 82 in 2017 to 99 in 2018.

CONCLUSION

Road traffic accidents are among the causes of deaths and serious injuries in Urban Gambia as shown by the results of this finding. Human errors accounted for most of the RTAs in Urban Gambia from 2014 to 2018, followed by mechanical factors. The trend of RTAs increases significantly towards 2018. This is alarming and needs urgent redress. The results of the findings are similar to other findings in the sub region.

LIMITATIONS

The research team intended to use RTAs data from four major health facilities in Urban Gambia; Brikama Health Centre, Bundung Maternal and Child Health Hospital, Kanifing General Hospital and Edward Francis Small Teaching Hospital (EFSTH) in addition to the RTAs data obtained

from the Gambia Police Force (GPF). After data collection, the team decided to discard data obtained from the health facilities because most of it does not capture the targeted variables for the study. The team ended up adopting only data obtained from GPF. The research team also intended to use both quantitative and qualitative methods. Research questionnaires that targeted police officers, drivers, health workers and victims of RTAs were designed. Victims of RTAs were reluctant to answer our questions. The team could not get information from mobile traffic police officers and health officers. The team administered only 7 successful questionnaires with some drivers in Brikama and Banjul Car Garages which is a very small sample size in the whole of Urban Gambia. The team handles these challenges by adopting only quantitative method. Although discussions we had with drivers were useful in helping us formulate recommendations.

RECOMMENDATIONS

Having identified the causes of RTAs, there is a need to devise measures as to how RTAs can be reduced. This research paper has shown that the trend of RTAs is rising and the Gambia could be seen as a worst zone of accident scenes in the sub region if drastic measures are not taken.

It is because of this, that the following measures or strategies are been recommended for consideration by GPF and the Gambia Government.

1. Establishment of Driving Schools

The results of the research showed that 96.20% RTAs occurred as a result of faulty driving during the period under review. This suggests that most drivers are either careless or unqualified. This could be affiliated to the inappropriate issuance of driving licenses. In order to reduce RTAs, there is a need to established well equipped driving schools. These driving schools should be licensed and supported by the GPF. Driving license should be issued only to those that are certified by approved driving schools. Any driver who is not certified should be banned from driving on the Gambian roads.

2. New form of driving license

It is encouraged that driving license in the Gambia is standardised and put in points, for example, 3, 5, 7. Drivers should be issued license base on their performance during driver testing. After acquiring a driving license, drivers should be monitored by the police. Once a driver commits an error, a point should subtracted from his/her license until such a time the license will be revoked by the police and the concern driver has to undergo training and testing before he/she can get another license. This form of punishment will make drivers extra careful thereby avoiding preventable accidents.

3. Road Infrastructure

It was observed that some roads in Urban Gambia are narrow which increases road congestion leading to RTAs. Example is the coastal road linking

Tabokoto and old Yundum. Therefore, there is a need for the expansion of some secondary roads and the rehabilitation of some feeder roads in Urban Gambia in order to enhance smooth driving and ease traffic congestion within the roads.

4. Traffic Design

There is also a need for the erection of road signs and signals on highways and junctions along some busy roads. This will help reduce RTAs, more importantly; drivers should be educated on the significance of road designs such as algebra crossing. Traffic police should be trained on traffic management.

5. Compulsory Vehicle Checks at Regular Intervals

The results of the study showed that 3.80% of RTAs reported over the period in Urban Gambia were due to mechanical factors. This could be affiliated to the fact that many of the vehicles in use in the Gambia are second hand (used vehicles). Compulsory vehicle checks should be done at regular intervals to help stop preventable accidents. Government should also ban the importation of very old vehicles (vehicles over 20 years old).

6. Enforcement of Policies and Traffic Laws

In order to reduce the rate of RTA, it is recommended that traffic laws and regulations be enforced and implemented. This is because both pedestrians and drivers are violating traffic rules as observed during the research. Example of such is

the use of mobile phone by both drivers and pedestrians on busy roads, over speeding and wrong parking.

7. Educating Vendors Along Highways

It was observed that vendors selling along the tar road particularly in market places such as Brikama obstruct traffic as vehicles are not able to alight passengers and turn at certain points. There is need to sensitize them and enforce strict measures against those violating traffic policies.

Picture of Road Signs taken from the Brikama Car Garage in the WCR

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