



Riding Tendencies Contributing to Emergence of Accidents in Commercial Motorcycles and Their Associated Factors: Case of Dar es Salaam City, Tanzania

Fahamu Kasavaga^{1*}, Laurencia Ndelamo Massawe¹, Prosper Nyaki²

¹Faculty of Informatics and Technical Education, National Institute of Transport, Dar es Salaam, Tanzania

²Faculty of Logistics and Business Studies, National Institute of Transport, Dar es Salaam, Tanzania

Email: kasavagaf@yahoo.com

How to cite this paper: Kasavaga, F., Massawe, L.N. and Nyaki, P. (2025) Riding Tendencies Contributing to Emergence of Accidents in Commercial Motorcycles and Their Associated Factors: Case of Dar es Salaam City, Tanzania. *Open Access Library Journal*, 12: e13169.

<https://doi.org/10.4236/oalib.1113169>

Received: February 27, 2025

Accepted: April 13, 2025

Published: April 16, 2025

Copyright © 2025 by author(s) and Open Access Library Inc.

This work is licensed under the Creative Commons Attribution International License (CC BY 4.0).

<http://creativecommons.org/licenses/by/4.0/>



Open Access

Abstract

The research on land transport contributes to the efforts made by nations to promote road safety. This paper investigates tendencies that contribute to the emergence of accidents involving commercial motorcycles due to human errors in urban. Specifically, it analyses the riding tendencies leading to accidents and their associated factors. The data were collected through observation, documentary review and focus group discussion along Morogoro road, specifically at Ubungo and Fire junctions. The findings revealed 19 risky riding tendencies of commercial motorcycle riders. The tendencies were grouped into errors related to cognitive, performance and decision-making. The tendencies related to cognitive errors were found to contribute to most of the accidents constituting 42.1% while the tendencies related to decision-making errors were found to have the least contribution to the emergence of accidents by only 26.3%. Five factors were found to account for the commercial motorcycle riders' risky tendencies, namely riding without training, a lack of familiarity with in-street roads, inadequate enforcement of the existing road rules, corruption of the police officers, and riding time pressure. Given the fact that most of the risky riding tendencies are related to cognitive errors, we recommend that all motorcycle riders be trained, with emphasis on development of cognitive abilities to raise their road awareness so as to reduce errors that lead to accidents. Also, a genuine licensing system has to be established.

Subject Areas

Sociolinguistics, Transportation Engineering

Keywords

Licensing Systems, Safety Transport, Cognitive Ability, Decision Making

1. Introduction

Motorcycle is one of the modes of transport that contribute significantly to improving the lives of people worldwide. Accordingly, [1] states that while motorcycles were known for cruising, leisure, racing, and off-road spots in the past, they are used for commercial purposes currently. The rate of riding for commercial appears to be higher in developing countries due to some reasons. [2] point out decline in the non-commercial modes of public transport which were offered by the governments' minibuses and shared taxis as one of the reasons accounting for the introduction of commercial motorcycles. This shows if the government reestablishes non-commercial transport services, riding motorcycles for commercial purpose will inevitably decrease. The growing rate of rural-urban migration of the young generation in search of formal employment opportunities also appears to account most for the raising number of commercial motorcycles in cities. As a result of this mobility, it has become usual to find a large number of young men who have migrated from rural areas riding motorcycles in the streets, transporting people and their cargoes to destinations in order to earn living. [2] have noted that commercial motorcycle riding contributes to social and economic development because it reduces the challenge of mass unemployment in urban. However, it is unfortunate that while riding motorcycles for commercial contributes to improving people's lives, because of certain riding tendencies, it is associated with a high risk of accidents incidences; hence, threatening communities by impeding efforts to achieve socio-economic development. [3] assert that families have not only been suffering due to an increased rate of injured people, impairments and loss of jobs, but also bearing a burden of expenses for handling them, paying for treatment, and taking care of accident victims. The reason for this challenge appears to be an increase in the number of motorcycles riders on the roads who are without any training on road safety rules. It is worthy to note that whenever accidents involving commercial motorcycle riders occur, it is the young men and women who loose lives or get injured in most cases because they are the ones who are mostly connected with riding. This is based on [4] observation that whenever there is a motorcycle accident, the possibility of death of a rider to occur is higher than the possibility of injuries. His statement also verifies that whenever motorcycles accidents occur, deaths are more likely to be reported than injuries; thus, making motorcycle riding contribute highly to growing rate of dependents in families. [5] estimates that 72.6% of people who get injured from road traffic accidents are those whose age is between 18 and 45 and among them 76% are males. The intent of this study is, therefore, to probe the tendencies of commercial motorcycle riders that contribute risky and accidents in cities.

Road accidents occur due to deficiencies related to human errors, unfavourable road conditions, vehicle defects, and bad weather condition [6] [7]. Among these deficiencies, human errors which refer to failure of drivers or riders to adjust the road complicated situations due to misjudgments in processing information or cognitive functioning have been pointed out as a major factor contributing to occurrence of accidents. [8] say that one serious problem in detecting the deficiency that might have caused the accident is hardship in detecting the factors and circumstances before and during the time of the accidents because they disappear before the accident is complete. However, according to [2] a reason accounting for the emergence of an accident can be traced from the tendencies of a driver or rider involved in the accident. Hence, investigation of the tendencies of motorcycle riders is paramount in determining factors that lead to road accidents in order to set preventive measures rather than dealing with deficiencies associated with unfavorable road, vehicle defect, or weather condition. Besides, [9] argue in the same way, pointing out the tendencies of a driver or rider on the road override other factors before and after the occurrence of accident. This is evident that a knowledgeable driver or rider is likely to be more capable of avoiding accidents than a non-knowledgeable one. Being the case, the focus of this paper is on the tendencies of commercial motorcycle riders that contribute to emergence of accidents in Tanzanian cities.

Tanzania is one the developing countries whose cities witness many accidents caused by riding of the commercial motorcycles. [10] report show that, in the developing countries, urban areas experience more accidents than rural areas, making the burden dependents due to road accidents comparable with that of malaria, HIV/Aids and Tuberculosis. Yet, the report by [11] indicates that more than 50% deaths which are reported in Tanzania are due to road accidents and hence the government has been spending billions of shillings on handling victims of these accidents.

2. Literature Review

The term riders' risky tendencies refer to riding styles that make a motorcycle rider commit performance errors, cognitive errors, or fail to make good decisions due to misjudgments in information processing [1]. These errors lead to the emergence of accidents, especially when a rider engages in high-risk driving behaviors under the influence of non-human factors such as changes in weather conditions, motorcycle defects, poor road conditions, or unfamiliarity with street roads. Nevertheless, studies on accident events tend to be relatively general and country-specific with just a few of them pointing out specific human tendencies that contribute to the occurrence of accidents.

In the cities of Sweden, accidents caused by motor vehicles including motorcycle is no longer threatening people's lives. [12] confess that is a result of Swedish government commitment to free its people from injuries, death, loss of its people, and incurring a burden of taking care of accident victim by introducing the traffic

reducing strategy vision in 2016 called “Vision Zero 2.0”. This shows a government’s willingness to intervene accidents in its cities can be paramount. In Isfahan and Kermanshah cities, located in west and central of Iran, tendencies such as: failure to notice pedestrians crossing when turning into a side-street from a main road, getting stuck behind a slow moving vehicle, misjudgments of the oncoming vehicles while overtaking, disregard of red lights, and overtaking without checking sight mirrors contribute to the occurrence of the accidents. [13] mention frustration, attempting to overtake quickly in risky circumstance and being angered by another driver’s/riders’ behaviours as major factors that lead to accidents. Moreover, it is preserved that inappropriate skills, inexperience, intentional offenses, and mistakes account for the occurrence of accidents.

In the cities of Aceh, Pekanbaru, Semarang, Pontianak, and Gorontalo of Indonesia, deviant tendencies related to recognition errors, decision making errors, performance errors highly contribute to occurrence of the accidents. This is based on [3] statements that recognition errors and decision errors are caused by cognitive negligence and level of driving or riding skills is a result of the performance errors, deficiency in the physical health of a driver or rider account for other errors; hence, bolding human errors as a major determinant cause of accidents. It is reported that, in Indonesia, motorcycle riding is connected to risk and accidents because motorcyclists do not undergo formal training rather they learn how to ride by imitating experienced riders or applying trial and error’ learning technique [3]. This implies that while driving/riding skills play a significant role in handling road circumstances and vehicles, it can be ignored and lead to accidents. If a person acquires all the necessary skills through training in a certain school/college and continues until he or she passes license tests, they will be in a position to avoid risky tendencies related to low performance, awkward decision making and inability to make judgments while riding. Nevertheless, it is worth noticing that even though motorcycle riding is connected to accidents in cities of both countries (*i.e.* Iran and Indonesia), the factors accounting for the occurrence of accidents vary. For instance, whereas low skills on how to ride safely and avoid committing offense and mistakes intentionally account for the increase in accidents in Isfahan and Kermanshah of Iran, the lack of formal training for motorcyclists contributes to the increase in accidents in the cities of Aceh, Pekanbaru, Semarang, Pontianak, and Gorontalo of Indonesia.

In Zimbabwe, motorcycle riding is a problem too. [14] reports that the productive age group is affected most, with more male losing their lives than females due reckless riding and intentional violation of traffic rules. Corruption among traffic officers, inadequate enforcement of the existing road safety laws and poor data collection and recording systems are other factors reported to account for the tendencies leading to the occurrences of accidents.

In Tanzania, the lack of relevant skills and inadequate enforcement of existing road safety rules due to certain factors tend to contribute to tendencies that result in threats caused by motorcycle riding in cities. However, research-based information on this matter is scanty; thus, leaving a knowledge gap.

3. Methodology

This study was conducted along the Morogoro road, specifically at Ubungo junction commonly known as John Kijazi interchange and Fire junction. Both the primary and secondary data were employed. The primary data were collected through observation and focus group discussion. Personal observations, which involved the short course driver-trainees at national Institute of Transport (NIT) enabled us to detect tendencies of riders while overtaking or meeting slow vehicles, acted upon when are distracted by pedestrians who are crossing the road or zebra without considering signs or talking to mobile telephones, distracted by police officers, vehicle drivers, or fellow motorcycle riders. The exercise of collecting the data using observation mainly took place in two sessions; the first session was during the early morning hours (*i.e.* between 5:00 am to 9:00 am) and during the early evening hours (*i.e.* between 5:00 pm and 8:00 pm). We followed [15] argument that rich information and awareness about a phenomenon can be obtained when direct personal observation is employed. An observation checklist covering the speed limit of vehicles, the behaviours of pedestrians while crossing the street and availability of road signs were used during the observation process. To determine enough information on the tendencies of commercial motorcycle riders in handling risks and their attitudes toward road traffic, observation was carried out for four weeks between March 20th, 2024 and April 17th, 2024. So, day-to-day recording of information in a diary was conducted, covering ideas, thoughts, and reflections regarding experiences.

Secondary data were collected to validate and supplement the data collected through primary sources and ensure that the data reflected the contemporary trends of accidents caused by commercial motorcycles. Two traffic police report documents (one from each district) on traffic accidents during the period from 2020 to 2022 were reviewed. To validate the collected data and get more information about riders' tendencies that contribute to occurrence of accidents in commercial motorcycles, eight participants were selected purposively to take part in a focus group discussion. The selection of these individuals was based on their resourcefulness shown in street riding, experience in using commercial motorcycles, and insights on tendencies of motorcycle riders. To rule out any effect which might occur as a result of age, gender, educational level, and employment status the participants from whom we collected data had varied demographic and socio-economic characteristics. These involved young and old, male and female, educated and less-educated, employed and privately-employed participants. Hence, this enabled us to crosscheck the information collected through observation and documentary review in two different sessions successfully before analysing and presenting the findings descriptively.

4. Results and Discussion

The analysis of the collected data revealed that, in urban areas, motorcycle riding is connected with life-endangering, risky and deaths. These occur because riders

are involved in 19 unprofessional riding tendencies; thus, contributing significantly to emergence of the accidents. These tendencies include:

- 1) being stuck behind a slowly moving vehicle
- 2) misjudging the distance of the oncoming vehicle while overtaking
- 3) overlooking or disregarding red lights
- 4) trying to evade road pothole quickly
- 5) being angered by the driving or riding behavior of a fellow driver/rider and trying to give a piece of a message
- 6) receiving a telephone call while ridding
- 7) rash ridding and time pressure
- 8) thoughtless riding
- 9) disregarding of ridding task,
- 10) awkwardly riding (*i.e.* standing on a motorcycle while ridding to show off mastery of stylish ridding
- 11) failure to handle riding task due to motorcycle overload
- 12) speedy riding
- 13) being angered by bosses (motorcycle owners)
- 14) lack of knowledge of street roads
- 15) failure to control inner city roads
- 16) trying to pass spaces between moving vehicles without alerting,
- 17) disregarding road lanes in congested roads
- 18) disregarding safety driving/riding signs given by fellow drivers/riders
- 19) consumption of alcoholic while riding

When grouped based on three major forms of human errors, these tendencies fall into errors related to cognitive, performance and decision-making. **Table 1** summarizes the identified errors according to categorical group and frequency of occurrence.

Table 1. Tendencies contributing accidents by human error category.

S/N	Motorcycle rider's tendency	Error category	Rate	%
1.	Trying to pass on spaces between moving vehicles, rash riding due to passengers' time pressure, overlooking the red lights, trying to evade road potholes quickly, and overtaking recklessly.	decision making	5	26.3
2.	A lack of knowledge on street roads, being angered by bosses (<i>i.e.</i> motorcycle owners), failing to handle ridding tasks due to vehicle overload, disregarding the complicated riding in congested streets, awkward riding and standing on the motorcycle while riding to show off/mastery of stylish riding, thoughtless riding, consuming alcohol while riding, and misjudging of the distance of the oncoming vehicles while overtaking.	cognitive	8	42.1
3.	Disregarding road lanes in congested roads, disregarding safety driving or riding signs as indicated by a fellow driver/rider, being angered by driving or riding behaviour of a fellow driver/rider and trying to give oneself piece of mind/message, failure to use inner city roads, speedy riding (over speeding), and being stuck behind a slowly moving vehicle.	performance	6	31.6
Total			19	100%

Source: Field data (2024)

From **Table 1**, it is apparent that as they constitute 42.1% (*i.e.* eight aspects), the tendencies which are related to cognitive errors are committed most by the riders of the commercial motorcycles. This is followed by the errors which are related to low performance accounting for 31.6% (*i.e.* six aspects) of the investigated tendencies. Therefore, since the riding tendencies connected to poor-decision making comprise only 26.3% (*i.e.* five aspects), they take the least position. In cities of other countries such as Iran, Indonesia and Zimbabwe, tendencies contributing to emergence of accidents are displayed in a fewer aspects than those displayed in Dar es Salaam. For instance, in Isfahan and Kermanshah cities of Iran risky tendencies contributing to emergence of accidents due motorcycle riding are displayed in only six aspects. According to [13], these include aspects such those related to motorcycles' failure to notice pedestrians crossing when turning into a side-street from a main road, getting stuck behind a slow moving vehicle, misjudgments of the oncoming vehicles while overtaking, disregard of red lights, overtaking without checking sight mirrors, frustration and trying to overtake quickly in risky circumstance and being angered by another driver's behaviors or riders' behaviors. Therefore, being exhibited in only six aspects implies that motorcycle riding is less connected to risky and accidents in cities of Iran compared to those of Tanzania.

Four factors explain why motorcycle riding for a commercial is highly connected to risky tendencies were found. These include riding under time pressure, a lack of familiarity with street roads, inadequate riding skills due to lack of formal training, inadequate enforcement of the existing traffic rules, and corruption among traffic officers. Riding motorcycles without having training was found to account most for tendencies contributing to accidents. It was revealed that many commercial motorcycle riders have never undergone formal training in colleges. This makes them rely on trial and error learning or learn how to ride by imitating experienced riders; hence, making commercial motorcycle riding one of the dangerous means of transport in cities, and Dar es Salaam in particular. Disappointingly, it was revealed that just knowing how to make a motorcycle move is taken to be enough for one to be a rider and begin riding for payment in the street, as one of the respondents explained during the focus group discussion. The lack of training is reported to contribute to accidents in the cities of Aceh, Pekanbaru, Semarang, Pontianak, and Gorontalo of Indonesia too. [3] state that, in Indonesia, motorcycle riding is connected to risks and accidents because motorcyclists do not undergo training rather they just learn how to ride by imitating experienced riders or engaging in a trial-and-error learning. However, training is very important for making a person get relevant skills to handle the riding tasks, develop cognitive abilities and make right decisions on the road. This means a well-trained rider will avoid risky tendencies easily which may lead to errors related cognition, performance and decision while riding a motorcycle for commercial purposes. Therefore, it should be borne in mind that once a person attends formal training in a

certain riding college, there is a high possibility for him or her to ride safely, avoiding tendencies related to low performance, making awkward decision, and remain free from possessing low ability to recognize risks.

A lack of knowledge of street roads among commercial motorcycle riders was revealed to contribute considerably to risky riding and accidents on roads of congested streets. It was found that when a passenger needs to be taken to locations whose street roads are not familiar to the rider, the rider would still agree; thus, subjecting himself to the risk of getting accidents due to being unfamiliar with the road and its condition. The riders agree with whatever a passenger demands in order to earn money, but they put themselves into risky. However, if commercial motorcycle riders ride on street roads which are familiar with before gaining expertise in handling riding tasks the risk of accidents would be reduced. The lack of familiarity with street roads also contributes to risky riding among Zimbabwean motorcycle riders. However, in Zimbabwe, the lack of formal jobs was shown to cause young men to accept riding contracts without undergoing training and lacking familiarity with street roads by encountering risky riding and accidents. This aspect affects motorcycle riders due to intentional mistakes caused by inadequate enforcement of the existing road safety traffic law [14]. Therefore, ensuring that motorcycle riders have all the relevant skills on how to ride safely and complying with road safety traffic laws effectively can reduce accidents caused by motorcycle riding.

The findings also indicated that inadequate enforcement of the existing road traffic laws contributes to risky tendencies and accidents in the streets of Dar es Salaam. The analysis confirmed that authorities responsible for the enforcement of traffic laws do not do their job effectively to ensure vehicles are driven safely. They do not take action against motorcycle riders who ride careless, violate the rules related to crossing roads and zebra crossing, ride at high speed, do not wear safety helmet, ignore red lights, overload, ride in spaces between moving vehicles, ride without riding licenses. In Zimbabwe, inadequate enforcement of the existing road safety laws is reflected in the corrupt tendencies of road traffic officers, poor collection of data on accidents, and poor recording systems. Accordingly, [15] affirms that inadequate enforcement of the existing road safety laws among the productive age group is the main cause of accidents, making more male die or get impaired than females. It is worth noting that enforcement of the existing laws effectively would contribute significantly to reduction of motorcycle riders' risky tendencies; hence, the possibility of accidents. Once a motorcycle rider understands that his or her riding tendencies are monitored, checked, or evaluated, they will begin to comply with the road safety laws and avoid accidents.

Corruption was revealed to be another factor accounting for many of the riders' risky tendencies including riding without a license, riding (snaking) in spaces between moving vehicles, changing lanes without signaling fellow riders/drivers, and overloading. Most riders know that these tendencies are illegal, but they are often seen violating the rules because the traffic police officers are irresponsible

and corrupt. It has been normal to see a rider of commercial motorcycles bribing a police officer in exchange for a mistake committed on the way. This makes the presence of the police officers on the road useless because they engage in such unethical behavior instead dealing with the riders according to the road safety rules. During the discussion with respondents, it was revealed that police officers take bribes not because they have low salaries, but because they have been affected by materialism. It is their greedy for luxurious life which makes them ask for bribes from drivers/riders who have risky tendencies. Corruption among police officers has been pointed out as one of the factors contributing to accidents even in other developing countries. [16] reports this to be one of the reasons to the increase in road risky tendencies that lead to fatal accidents in Zimbabwe. It is therefore argued that the curriculum for training police officers has to be reviewed to include courses on how corruption tendencies contribute to risky driving/riding and accidents by threatening one's profession in the public eyes and how it impedes socio-economic development.

Moreover, the findings indicated that time pressure causes the commercial motorcycle riders to have risky riding tendencies leading to accidents. It was found that most riders work under contracts with the owners of motorcycles; that is, they make certain agreement with the owners regarding payments, called *mkataba* per day or week. This means, upon completion of a period of the contract, the rider would assume full ownership of the motorcycle. As a result, riders work under time pressure to get the agreed amount of money; hence, subjecting themselves to risky tendencies. The reason for this is that the terms of their contacts are hard to meet without working under pressure. This means that some commercial motorcycle riders find themselves accepting contracts that put them at such risk because of their ignorance or other factors. Therefore, unless the contracts are known, exposed and revised so that they are affordable, commercial motorcycles riders will remain under time pressure; thus, making them connected to risky and accidents.

5. Conclusion

Tendencies of commercial motorcycle riders contribute significantly to emergence of many accidents in urban areas, and mainly those related to cognitive errors such as the lack of knowledge on street roads, being angered by bosses (*i.e.* motorcycle owners), failure to handle the ridding tasks due to overload, disregarding traffic lights in congested streets, and misjudging the distance of the oncoming vehicles while overtaking. As they are highly connected with injuries, impairments, and deaths of many people, the accidents involving commercial motorcycles impede with socio-economic development and making families suffer in taking care of injured members, handling the impaired ones, taking care of dependents, or losing members. Further, the paper has identified five factors accounting for riders' risky tendencies such as riding commercial motorcycles without training, a lack of familiarity with street roads, inadequate enforcement of the existing roads safety rules, corruption, and time pressure. Therefore, as most of the risky

riding tendencies are connected to cognitive errors, training the motorcycle riders to develop their cognitive ability is important in raising road awareness. There is also a need to establish a better licensing system under which only riders with high pass in the aspect of cognitive ability will be licensed to ride motorcycles for it has contribution on raising awareness to riders.

6. Limitation of the Study

This study may have been constrained by the fact that collection and analysis of its data were done solely qualitatively. However, the author could employ the quantitative methods too; hence, allow more robust conclusion on how riding tendencies and contributing factors contribute to emergence of accidents. As such, in this paper we recommend further research on the extent to which the road conditions contribute to emergence of road accidents in urban area using mixed methods to enrich the existing literature.

Acknowledgements

The authors heartily appreciate the respondents for their enthusiastic contributions extended in the course of data collection.

Conflicts of Interest

The authors declare no conflicts of interest.

References

- [1] Strauch, B. (2017) Investigating Human Error, Incidents, Accidents, and Complex Systems. 2nd Edition, Francis and Taylor Group.
- [2] Gumel, G.B., Adam, I.M. and Rilwan, I.A. (2017) Impact of Commercial Motorcycles Transport in Raising Income: Evidence from Jigawa State, Nigeria. *CARD International Journal of Social Sciences and Conflict Management*, **2**, 74-91.
- [3] Santoso, G.P. and Maulina, D. (2019) Human Errors in Traffic Accidents: Differences between Car Drivers and Motorcyclists' Experience. *Psychological Research on Urban Society*, **2**, 118-126. <https://doi.org/10.7454/proust.v2i2.69>
- [4] Rweyunga, C.P. (n.d.) Factors Influencing Road Traffic Accidents in Tanzania: A case of Manyoni District. Ph.D. Thesis, Open University of Tanzania.
- [5] Boniface, R., Museru, L., Kiloloma, O. and Munthali, V. (2016) Factors Associated with Road Traffic Injuries in Tanzania. *Pan African Medical Journal*, **23**, Article No. 46. <https://doi.org/10.11604/pamj.2016.23.46.7487>
- [6] Bates, L., Soole, D. and Watson, B. (2012) The Effectiveness of Traffic Policing in Reducing Traffic Crashes. In: Prenzler, T., Ed., *Policing and Security in Practicing Challenges and Achievements*, Palgrave Macmillan, 90-109. https://doi.org/10.1057/9781137007780_6
- [7] Whittingham, R.B. (2004) *The Blame Machine: Why Human Error Cause Accidents*. Routledge.
- [8] Moodley, S. and Allopi, D. (2008). Analytical Study of Vehicle Defects and Their Contribution to Road Accidents. *Proceedings of the 27th South African Transport Conference (SATC)*, Pretoria, 7-11 July 2008.

-
- [9] Allahyari, T., Saraji, G.N., Adi, J., Hosseini, M., Iravani, M., Younesian, M., *et al.* (2008) Cognitive Failures, Driving Errors and Driving Accidents. *International Journal of Occupational Safety and Ergonomics*, **14**, 149-158. <https://doi.org/10.1080/10803548.2008.11076759>
- [10] WHO (2018) Global Status Report on Road Safety 2018. <https://www.who.int/publications/i/item/9789241565684>
- [11] SUMATRA (2017) Improvement of Road Safety in Tanzania Mainland. Final Report.
- [12] Haghai, A., Ketabi, D., Ghanbari, M. and Rajabi, H. (2014) Assessment of Human Errors in Driving Accidents; Analysis of the Causes Based on Aberrant Behaviours. *Life Science*, **11**, 414-420. <http://www.lifesciencesite.com>
- [13] Muvuringi, M.P. (2012) Road Accidents in Zimbabwe Influencing Factors, Impacts and Strategies. KIT (Royal Institute) Vrije Univeriteit.
- [14] Hennink, M.M. (2014) Focus Group Discussion: Understanding Qualitative Research. Oxford University Press.
- [15] Nyoni, J. (2012) Bribery Adds to Road Carnage. <https://www.chronicle.co.zw/index.php?option=comcontent&view=article&id346997>
- [16] Björnstig, J., Bylund, P. and Björnstig, U. (2017) Vehicle-Related Injuries in and around a Medium Sized Swedish City—Bicyclist Injuries Caused the Heaviest Burden on the Medical Sector. *Injury Epidemiology*, **4**, 1-10. <https://doi.org/10.1186/s40621-016-0101-8>