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Factors Influencing Highway Road Accidents in Uganda: A Case Study of Kampala-Masaka Highway

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Abstract: *Highway Road accidents (HRAs) are the eighth cause of death in the world and there has been a 46% increase since the 1990s and it is estimated to become the fifth cause of death in the world by 2030. The paper assessed the causes and outcomes of HRAs to the community along Nsangi-Kayabwe road section. The paper employed a cross-sectional survey design using qualitative data collection approaches. The paper targeted 25 people from whom a sample of 24 respondents was determined using Krejcie and Morgan. Data was collected through, observation, interview and documentation. Results indicated that, human error (100%), unqualified drivers/riders (90.9%), nature of the road (81.8%), weather and vehicle conditions (63.6%) as the main causes of HRA whereas death (100%), damage of vehicles (90.9%), injuries (72.7%) and unemployment (63.6%) were its outcomes. The paper concluded that human error and vehicle failings, defective vehicles and bad roads contribute significantly to HRAs resulting in deaths, injuries, property damage and loss of socioeconomic productivity and revenues. The paper recommended increased sensitization, implementation and enforcement of traffic laws, widening road, reinstallation of signs and remarking the road, and checking of all vehicles should be done to minimize HRAs.*

Keywords: *Careless, Pillion, Reckless, Traffic laws, Trauma*

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1. Introduction

Every year, nearly 1.25 million people are killed and over 50 million people injured on the world's roads (UNECA, 2018). Highway road accidents (HRAs) are the eighth cause of death in the world since the 1990s, and it is estimated to become the fifth cause of death in the world by 2030 (WHO, 2015 as cited in Bonnet, Lechat & Ridde, 2018, p.1). Regrettably, nearly 1.25 million people are killed annually and up to 50 million people injured on the world's roads (UNECA, 2018; WHO, 2004) and majority of the casualties are from the age group from 15 to 44, who are wage earners and child-raising group (PAHO/WHO, 2016; Ssewanyana & Niyitegeka, n.d). In the USA, road traffic accidents kill some 154,089 people each year, representing 12% deaths worldwide (PAHO/WHO, 2016). Reports add that, road traffic deaths is 15.9 per 100,000 population lower than the global rate of 17.4 (Ibid).

In developing countries, more than 85% of all deaths and 90% of disability-adjusted life years are lost from road traffic injuries, this fact therefore makes deaths and

injury due to road traffic accidents a major public health priority in the developing countries (Nantulya & Reich, 2011). It is worth noting that, the highest number of deaths occur on the African continent, i.e., a rate of 26.6 deaths per 100,000 inhabitants, which is higher as compared to USA and Global rates (Bonnet, Lechat, & Ridde, 2018). However, the statistics vary; for example, a study by Adeloye *et al.* (2016) found out that in reality the rate could be closer to 65 deaths per 100,000 inhabitants. Further, young Africans are the most likely victims, with road traffic accidents being the first cause of mortality among 15–29-year-olds. Interestingly, Africa with less than 5,000 cars for every 100,000 people has three times more deaths because of road accidents than Europe with 48,000 cars for every 100,000 people (Quartz Africa, 2017 as cited in Lwegaba, 2017, p.7).

Road traffic accidents ranks ninth worldwide as a major cause of deaths and majority of the deaths happen in developing economies. As a developing country, Kenya is no exception. Not a single day goes by without RTA happening on Kenyan roads, killing many people and others get permanent injuries. Those who are affected or killed are mostly people in their prime productive age (15-45). The highest burden of injuries and fatalities is borne disproportionately by poor people, as they are mostly pedestrians, cyclists, and passengers of buses and minibuses (Abbas, Hefny, & Abu Zidan, 2011).

WHO (2018) ranks Uganda among the countries with the highest traffic death rates estimated at 29 car deaths per 100,000 persons. Arube-Wani (2018) argues that Uganda is rated among the top or leading countries in HRA in the world as per the WHO organization road safety assessment (2018). Further, Ugandan traffic accidents are increasing. For instance, Police Crime report (Uganda) indicates that road accidents increased from 3,051 in 2017 to 3,194 in 2018 (Ntezza, 2019; Independent, 2019). The Independent report (2019) adds that 1,424 pedestrians died in 2018 as compared to 1,319 in 2017. The report adds that the highest number of accidents was registered in December with 1,153 cases followed by July with 1,123 cases and March with 1,099 accidents, while August and January tied at 1,086 (The Independent, 2019). Further, the annual police traffic report (Uganda Police Force, 2018) indicate that 14,416 people who were involved in various accidents and 3,689 of these died. The report pointed out that of every 100 crashes, 29 people died. This implies that in 2018, of the 3,689 who died, 878 of them were boda boda riders, 202 vehicle drivers, 160 riders of bicycles 380 passengers on boda boda and 563 passengers travelling in other vehicles (Ibid).

Masaka-Kampala highway is prone to accidents and not a single week goes without recording them (Kisekka, 2019). The New Vision (2016) reported that between January and September 2016, over 200 people died on Masaka-Kampala road. These accidents have claimed a number of lives, injured and damaged properties. Reports further indicate that, almost over 80% of the accidents are as a result of human error (Musoke, 2016), slippery roads, and poor road users (Kisekka, 2019). Arube-Wani (2018) adds that HRA result into mortality, morbidity and disability, severe injuries and longer-lasting effects such as loss of socioeconomic productivity and revenues. Sebaggala (2014) notes that increase in the rate of road accidents is mainly due to the growing number of vehicles and lack of appropriate road safety interventions. Use of alcohol while driving, over speeding, and reckless driving (Musoke, 2016), bad weather, and over taking in corners (URN, 2019), as well as poor quality of road infrastructure and unwillingness to enforce the laws and obey them (Arube-Wani, 2018). The HRAs are attributed to *bodabodas*, small and big personal cars, big or monstrous trucks, taxis, cyclists, and pedestrians (Ibid).

Though a number of studies had been carried out focusing on Road Traffic Accidents, they have ignored Highway Road Accidents on Masaka-Kampala highway. Therefore, this study established the cause and effect of HRA on Masaka-Kampala Highway.

2. Literature Review

2.1 Causes of Highway Road Accidents (HRA)

There are complex causes of road accidents including motor vehicle collisions; however, these depend on drivers' characteristics as well. According to McGwin & Brown (1999), the level of skill, inexperience (McCartt *et al.*, 2003), and risk taking behaviors (Rolison *et al.*, 2014) are among the reasons for collisions of young drivers compared to drivers in other age groups. To improve road safety, traffic rules should be enforced as a strategic mechanism, and these traffic laws are largely enforced by the police by having roadside checks and speed management operations. The traffic and road safety Act, 1998 has a number of rules embedded therein, but these activities seem not to be deterring unsafe behaviour in a sustainable way. These include but not limited to alcohol, non-use of seat belts and excessive speed.

The Daily Monitor (2012) reports that World Health Organisation has singled out road accidents, as a major public health problem in developing countries. This means that fatalities are no longer regarded as mere government statistics but as a serious public health and development challenge requiring urgent concerted global action. It adds that in Uganda, majority of road accidents involve buses, *matatu* and motorcycles. Many hospitals in East Africa have reserved special wards for *bodaboda* accident victims. Many Ugandans rely on buses, *matatu* and *bodaboda* for movement, hence the need for more energy and resources to be focused on enhancing safety of the public road transport system.

Notably, Uganda's road infrastructure is generally unsafe. The carriage ways are single without a median, others have steep shoulders and have limited avenues and opportunities for overtaking, which results in head-

on collisions. A number of these roads also do not have facilities for non-motorized users and or pedestrians. The land use-planning pattern is inadequate exhibiting many numerous examples of unsafe accesses to the highways. There is limited road safety engineering knowledge within the responsible government agencies both at national, municipal and local levels. There are no regular road safety audits undertaken as required by qualified and experienced or competent staff, including systematic road safety engineering works as well. Thus, there is need for technical assistance in designing new road projects and maintaining the existing ones as far as road safety is concerned (GoU, 2018).

Speeding and use of alcohol but based on where the accidents happen were the major driving factors for the accidents. On the other hand, the pedestrians were found to be victims because of inadequate infrastructure (Namagembe, 2019).

2.2 Effect of highway road accidents to the community

It has been noted that human induced disasters in the world are a result of road accidents where car crashes are the leading road killer. It is estimated that annually about 1.3 million people die and 50 million others are injured on road accidents.

World over, motor vehicle collisions cause more than 1.2 million deaths and a greater number of non-fatal injuries annually (World Health Organization, 2015). This affects the health and well-being of inured survivors and their families as well. (Donaldson et al., 2009).

It has been estimated that there are about 1.25 million deaths as a result of road traffic accidents in the world and 20-50 million cases of non-fatal injuries every year. Those who are more vulnerable to accidents include pedestrians, cycle users and motorcyclists (WHO, 2016). This as well affects not only the victims but also simultaneously their friends and family members are affected too by the consequences of these road traffic accidents.

Further, road traffic accidents have an effect on the financial burden of the victims and their families, friends, employers, insurance companies and the governments. It is very difficult to measure exactly the financial loss for sacrifices and human sufferings (WHO, 2004).

An analysis of annual traffic and road safety reports indicate that road crash fatalities rose from 2,597 to 3,503 in 2016 representing a growth of 25.9% in the last decade alone. Thus, the accident severity index is 24 people killed per 100 road crashes. On average, daily, Uganda loses 10 people in road traffic crashes, which is the highest level in East Africa. (GoU, 2016).

Uganda has a robust regulatory transport framework in place, but there are several challenges compromising the implementation of such policies and regulations, which result in inefficient service provision in the transport sector. There is unregulated public transport system where a number of many vehicles operate in poor mechanical conditions. The entire country including the capital Kampala city is served by an unregulated public transport system, with most of the vehicles in poor mechanical condition, together with poor driving skills that contribute to road crashes. The biggest percentage of vehicles operate largely outside the legal transport regulatory framework (GoU, 2018).

In Kenya for example, children, pedestrians, motorized two- or three-wheeled vehicles (cyclists) and the elderly are the most vulnerable road users. (Ogendi *et al.*, 2013). WHO (2012) confirms that this vulnerable group alone accounts for 57% of the deaths compared to 51% in middle-income countries and 39% in high-income countries (39%). Statistics also show that almost 60% of road traffic deaths in the world are among 15 – 44 year olds and more than three-quarters (77%) of all road traffic, deaths occur among men. Unfortunately, victims of non-fatal injuries who incur permanent disability, through amputation, and head or spinal cord injuries are poorly documented.

Ogendi *et al.* (2013) assert that passengers on motorcycles, the elderly, children and pedestrians are among the most vulnerable road users. Road Traffic Accident fatalities have placed a very big burden to the victim's families, dependents, society and government at large. This has not spared the health services by straining health care services in terms of financial resources, bed occupancy, and demand placed on health professionals (WHO, 2009).

More than 20,000 people die every year in traffic accidents in Uganda. This was attributed to the poor road safety culture and failure to enforce traffic rules are majorly to blame for the high rate of accidents. Road accidents kill more people than tuberculosis in developing nations. They are the leading cause of death among young people aged 18-32 years. There have been many adverts against drunk-driving but many Ugandans have chosen to ignore these messages (Daily Monitor, 2012).

Lyatuu (2018) notes that reckless motorists are in Uganda and a report released by the United Nations Economic Commission for Europe (UNECE) and United Nations Economic Commission for Africa (UNECA) warned that with accidents increasing and killing more people, the country's resources are being lost. The Road Safety Performance Review; Uganda records the highest number of accidents in the East African region with up to 10 people dying daily (UNECA, 2018). The report further adds that, Twenty-four (24) people are killed in every 100-road crashes, the report said. It is estimated that accidents cost Shs 4.4 trillion ($1.2 billion) in lost productivity and medical expenses annually, representing 5% of Uganda's Gross Domestic Product.

3. Methodology

3.1 Area of study

The study was carried out on Kampala-Masaka Highway from Nsangi-Buwama section. This spot was selected due to high HRAs occurrences. The locations of the study were Fiika Salaama spots (Mpigi, Kampiringisa, and Mitalamalira), check points (Maya and Buwama), and police stations (Nangi, Mpigi, Kammengo, Buwama and Kayabwe).

3.2 Research design

The study employed a cross-section survey design involving qualitative approaches throughout sampling: data collection, data quality control, as well as data analysis. These eased gathering in-depth information through interview, observation and documentation. The design was employed because it yields a large amount of data at one point in time from a sizeable population in an economic way.

3.3 Study population and sample size

The study targeted 25 traffic police officers under Mpigi district traffic station from whom 24 traffic officers were determined using Krejcie and Morgan (1970) sample size table. The category of respondents included traffic police officers from Fiika Salaama spots (Mpigi, Kampiringisa, and Mitalamalira), checkpoints (Maya and Buwama), and police stations (Nangi, Mpigi, Kammengo, Buwama, Kayabwe). The participants were selected using simple random and purposive sampling techniques.

Table 1: Study Population

Categories	Study population	Sample Size
Fika Salaama	11	11
Police Station	6	5
Checkpoint	8	8
Total	**25**	**24**

Source: Krejcie & Morgan, 1970

3.4 Data collection

Data was collected through interviews, observation and documentation. The documentary included articles, journals, newspapers, which were published from 2016 to 2020 reporting on road accidents on Masaka-Kampala highway. The study employed interview to collect data from key informants and used interview guide with open-ended questions to allow participants to have a broader perception on the issues at hand focusing on HRA on Masaka-Kampala Highway. The study employed a semi-structured interview to probe for more responses on road accidents along the selected road section. The researchers ensured an appropriate timeframe for the interviews, and avoided annoying statements on the side of the interviewees. Therefore, the researchers conducted four categories of interviews to collect data from key informants including police officers at different road sections, checkpoints, police stations and Fika Salaama (Table 1). During the face-to-face interviews, the researchers built friendly environments, using simple and polite language with short and clear interview questions.

Observation and documentary review were also used to collect data to supplement the primary data collected from the respondents. Data collected from online articles provided information on accidents happened between Maya to Kayabwe road section on Masaka-Kampala highway. Even though, the data found online was so good with the information required but those reporting accidents outside Masaka-Kampala highway were not considered. The data collected was vital for analysis and supporting the literature. The literature provided a basis for correlating the results with the previous studies.

3.5 Data analysis

Collected data from the participants was edited to check for completeness, accuracy and consistency. Thereafter, it was coded, categorized and entered into a computer for analysis using MS Excel to generate frequency tables to aid interpretation and analysis of the results.

3.6 Ethical consideration

To ensure fruitful data collection, the researchers acquired an introduction letter from Kampala University, Graduate School and Research Directorate and presented to the Director, Traffic and Road Safety from Uganda Police Force to permit data collection procedures. The letter from the Director, Traffic and Road Safety was presented to OC Traffic Mpigi who further permitted the researchers to collect data from the traffic police officers at different points from Maya – Kayabwe road section on Masaka – Kampala Highway. The participants in the study were assured of confidentiality and anonymity of the given information. They were also requested to give voluntary informed consent prior to collecting data from them. It was assured that the participants were able to give their answers without disruption from other road users. Other road users disrupted some of the interviews. The presence of these third parties might have affected the interviewees and the responses they gave.

4. Results and Discussion

4.1. Causes of Highway Road accidents (HRA) on Masaka-Kampala Highway

The researcher established the causes of HRA on Masaka-Kampala highway and the responses are indicated in Table 2 below:

Table 2: Causes of HRAs

Main Cause	Frequency (n = 11)	Percent
Human error	11	100
Weather	7	63.6
Nature of the road	9	81.8
Unqualified drivers	10	90.9
Vehicle conditions	7	63.6
Behavour	4	36.4
Overworked drivers	3	27.3
Overloading	5	45.4

Results in Table 2 reveal that human errors (100%) was the major cause of HRA on Masaka-Kampala highway. Unqualified drivers and riders (90.9%) who drive/ride on the road and cannot read the road marks and signs, nature of the road (81.8%), weather and vehicle conditions accounted for 63.6% respectively followed this. Further, overloading (45.4%) of sand and cargo trucks while behavior (36.4%) of the road users especially drivers and riders. The least overworked drivers were reported to cause highway road accidents on Masaka-Kampala highway. Human error, which the respondents highlighted included reckless and careless driving, overtaking, over speeding, driving under the influence of drugs and alcohol, and poor parking during loading and offloading, especially by taxis. Further, unqualified drivers and riders meant those drivers who have no permits or driving vehicles beyond what they are permitted to drive.

Findings revealed that human error was a major cause of HRA on Masaka-Kampala highway. The respondents were able to state the key elements under human error which cause road accidents and these include the following; over speeding, overloading, careless and reckless driving, drink driving, driving while on cell phone, poor parking to load and offload, and eating which distract the drivers/riders. Majority of the drivers over speed unnecessarily on the road beyond the speed limit, which is an illegal behavior that vastly increase the risk of losing control of the vehicle hence causing an accident. This implies that in case of any problem on the road, it becomes hard to control the speed and overcome the accident. The findings are in agreement with Namagembe (2019) who asserts that speeding and use of alcohol but based on where the accidents happen are the major driving factors for the accidents.

Further, careless and reckless driving are serious issues on highways and they had played a key role in causing accidents. One of the respondents explained that careless driving involves a motorist that is less concerned about other road users than they are, for example, everyone is on the road in a cue because of jam and one overtakes from either side, which is unlawful, or an offence. It was further noted that Reckless driving involves over speeding the vehicle beyond the maximum speed permitted along that particular road and obstruction of drivers through talking on phones while driving, playing loud music in the car and lack of focus.

Another cause of HRA under human error reported was driving under the influence of alcohol and drugs. The common drugs used by drivers are marijuana and miraa/mairungi while alcohol were spirits, and beers. It was further reported that Kamengo is where the miraa/mairungi is sold while spirits and beers are bought from the bars along the road and packed into plastic bottles to hide their identify. This majorly happens late in the night when people exploit the opportunity that traffic officers are away from duty resting and they drue their vehicles while drunk. Drunk driving has resulted into many accidents that have claimed many lives. This is supported by Osoro, Ng'ang'a &Yitamb (2013) who claim that the use of alcohol contributes to traffic injuries by impairing driving capabilities and thus increasing the risk of crash involvement. However, there have been many adverts against drunk driving but many Ugandans have chosen to ignore these messages (Daily Monitor, 2012) hence more accidents.

Further, driving while talking on cell phone is another cause of accidents on the highway. It was observed that motorists want to talk on phone while on the road driving instead of correctly packing and talk until the phone call ends and continue with the journey. In most cases people tend to concentrate on phone and forget that they are on the road which is used by many people in various ways suddenly they find themselves colliding into other vehicles or nocking other road users. It has been observed while traveling when a driver is talking

on phone but when changing gears he uses one hand, which would have been used to hold firmly the steering.

Poor parking to load and offload passengers, this is a common practice where the drivers just park to load a passenger from the roadside. However, either joining or leaving the road the driver fails to show indicators to allow the one behind plan earlier and avoid the accident.

Secondly, findings revealed that unqualified drivers on the road have caused fatal accidents as compared to qualified drivers. It was reported that a number of drivers are unqualified with lower class permits but driving vehicles beyond what is permitted to drive and incompetence. Incompetence of drivers was observed in terms of failure to observe, interpret, and understand road signs, and poor control of the vehicle that is break, lights, and wipers. These unqualified and unlicensed drivers have caused many road accidents given that most of them do not know much about the traffic rules and possess little skills in driving. The findings were in agreement with Muwema (2017) who reported that unqualified driver, faulty brakes, tyre burst; fake driving permits resulted into death of 13 people along Katonga. It is worth noting that in most cases some drivers get permits when they have not even gone for road test.

> *One day in a taxi, I heard someone saying that she had her permit before driving while another stated that he got his through third party by paying in money.*

Results further indicated that weather was another major cause of accidents on highways. Weather was reported in terms of heavy rains, strong sunshine, dusty atmosphere, smoke, mist, and fog. One of the respondents reported that during heavy rains, the road becomes slippery, which eventually causes accidents. This commonly occurs and the drivers attribute this to the road but it is their careless driving practices and in case of stopping the vehicle, the instant breaks do not work but continue to skid. This implies that skidding along the roads has also become common of recent with the Kampala-Masaka highway frequently mentioned as a slippery road that causes cars to skid. Another respondents noted that during sunny days the tarmac is very hot which damages the tires and cause accidents. The New Vision (2018) which claimed that burst of a front tyre coupled with over speeding and reckless speeding cause highway accidents supported this. Jjingo (2018) adds that lack of check of the vehicle before going on the road causes more death. She added that the mirage on the road seen at a distance sometimes disorganizes the drivers and influence an accident. Further, during dry period, especially in swamp vegetation, mist and fog are very high which limits the driver to show where he/she is driving to eventually finding himself or herself into a swamp.

Results also revealed that nature of the roads is another cause of highway road accidents. Thus, Masaka-Kampala highway is too narrow to allow dual carriage, limited humps, especially in trading centers, and the existing swamp vegetation, which sometimes limits seeing. Further, the road was constructed in an old fashion to cater for a few cars that were in the country by then in 2005. Today the number of cars in the country has out used the quality and capacity of the existing roads. Therefore, overtaking on Ugandan roads is riskier than never before because the roads are too narrow and that is why whoever tries to overtake sometimes ends up causing accidents (The New Vision, 2018). This implies that Masaka-Kampala highway is over-used, which makes the tarmac so smooth losing any kind of friction that holds car tyres firm stopping them from skidding.

Respondents also reported vehicle conditions as another cause of HRA; this is because most of the vehicles on the roads are in dangerous mechanical conditions (DMCs). These are vehicles, which have no headlights, reflectors, weak breaks, side mirror, no start-up batteries, no whoppers, wipers, poorly burning the oil, and the physical outlook of the vehicle. Addition, mechanically poor vehicles can breakdown anytime along the journey causing accidents. Ssekidde. (2019) asserts that a taxi which was in poor state got involved in accident causing death of a person and injuring five people. However, some drivers or car owners take a long period without servicing their vehicles or irregular checkups. It was revealed that is important for the vehicle engine to be in a good condition, implying that the driver must ensure that key elements such as oil, water, fuel and brake fluid are in the right amounts every time before they move the vehicle.

Findings also revealed behavior was among the main causes of accidents on Masaka-Kampala highway. This implies that drivers, especially for trailers, buses, and trucks always misbehave on the road as they see small cars as nothing. Sometimes they hoot so loudly and disrupt the other road users, which sometimes lead them to causing accidents. Kesiime (2021) asserted that, bad behavior, over speeding and over taking resulted into death of six people and injured six in Wamatovu, Nakirebe accident. It further reported that the sand trucks over speed and while overtaking they make sure that those they overtake were disrupted and go off the road finding themselves into ditches. During that study, it was observed at one of the Fika Salama points; two drivers misbehaved and refused to give way to another. The rightful driver was never allowed to negotiate through a small route. This lasted for about 7 minutes until the sand truck reversed for the trailer to continue despite its driver having misbehaved (Observation, 16/3/2021).

Furthermore, respondents reported overworked drivers as a scenario that influences road accidents. They added that because of fatigue, drivers sleep off, especially at night and finding themselves causing accidents. Drivers, especially for sand truck work day and night to meet the daily demands from their bosses, which makes them overworked. This is very true that drivers dose off and drive on the wrong lane on narrow road causing more accidents (Ssekidde, 2016). In addition, some have poor sight of which they cannot see far at night and incase of

such instances an accident occurs. Based on this, you find drivers blaming the nature of the road instead of blaming themselves working without resting. It was noted that it is important to park vehicle and sleep at least 15-30 minutes instead of forcing yourself to first reach at a desired location to sleep. It was noted that majority of sand trucks, cargo and trailers cause accidents due to sleeping drivers, especially at the night. We not that, sometime you find the vehicle got an accident and you wonder it happened.

In addition, results revealed that overloading had claimed a number of lives, injured people and damaged vehicles and loss of property. This cut across all vehicles such as taxis, trucks, buses, small cars and motorcycles. It is important to note that vehicles are loaded beyond their tonnage capacity. This affects their tyres, shock absorbers, rims, and crutch and brake systems. In addition, overloading is coupled with reckless and careless driving of which drivers fail to take control of the vehicles. Kamusiime (2019), Sekidde (2018) & Yinglun (2019) who claim that over speeding and reckless driving impacts on peoples' lives along the Masaka-Kampala highway supported this. Respondent X noted that you see a driver has overloaded the vehicle, driving at a high speed but he/she is again talking on cell phone, which results, into accidents. This implies that most accidents were blamed on the unqualified drivers who loaded the truck with twice its permitted tonnage, faulty brakes and tyre burst (Muwema, 2017). He further informed that on September 16, 2017, at least 13 people perished near Katonga along the Kampala-Masaka highway when a heavily loaded truck crashed into a minibus.

4.2 Outcomes of HRA on Masaka-Kampala highway on community

The respondents further reported the outcomes of HRA on communities as detailed in Table 3 below:

Table 3: Outcomes of HRA to community/country

Outcome	Frequency (n = 11)	Percent
Deaths	11	100
Loss of property	10	90.9
Damage of vehicles	10	90.9
Unemployment	7	63.6
Loss of income	6	54.5
Injuries	8	72.7
Loss of revenue/tax	5	45.4
Increased government expenditure	4	36.4

Results in Table 2 above revealed that majority of the respondents reported death (100%) as an outcome of HRA. This was followed damages to vehicles and loss of property, which accounted for 90.9% respectively. On the other hand, injuries accounted for 72.7%, unemployment (63.6%), and loss of income (54.5%). Results also revealed that loss of revenue/tax had 45.4%, and increased government expenditure (36.4%). Whenever accidents occur, people loose live, get injured and other traumatized. This implies that important people are killed and their contribution to the nation is lost that is tax. The vehicles, which get involved in the accidents, some are written off and they can longer be assets to owner and government as they offer employment, tax and socioeconomic growth. Therefore, the government incurs more expenditure in providing care families whose caretakers died in the accidents.

Results indicated that HRA leads to deaths and injuries of humans and animals. It was noted that many families have lost their beloved ones due to accidents, others get permanent injuries and traumatized including unrecoverable wounds (Sekidde, 2018). One of the respondents reported that the country loses important people who are tax payers contributing to socioeconomic transformation of the nation. Respondents Y clarified that the country loose human resources such as voters, business people, engineers and doctors among others.

Findings further showed that highway accidents result into loss of property and damages to vehicles of which some become recoverable and written off. This implies that if the government would have got tax from such vehicles it cannot get it. For example Owner Transport Vehicle, OTV, and third party. The loss of tax have a significant effect to socioeconomic transformation of any community and country at large. On the other hand, during accidents many passengers property are lost including vehicles and motor cycles. In most cases passengers' property and goods are vandalized by those who come to rescue the victims/casualties for example, as passengers and other motorists cry for help, people start with searching for what to take, this is common for taxis and my-cars (Sekidde, 2018; AFP, 2016). However, in case of other vehicles they vandalize all the good and property being loaded. For example, a trailor belonging to Moses K carrying cement had a head on collision with a snow-truck loaded with sand at Nakirebe, but all the cement was stolen. Worse still, the sand was also taken; amusingly people stated that, *"guno mugano nga gwa nswa anti omusenyu gwetabudde bulungi era tugenderawo kuzimab".*

Latterly meaning that it is a blessing in disguise as the sand was already mixed cement, so they were taking for direct construction and plastering their houses.

Further still, unemployment and loss of income were other resultant outcomes from highway road accidents. This implies that all those gaining from the motor vehicle business lose their employment and income. The notable examples are the drivers, owners, roadside sellers (gonja, muchome, soda, water, fruits, chicken and among others). It was revealed that some vehicles are damaged beyond repair, unrecoverable and some are written off. In case the motor vehicles are written off they are no longer allowed on the road implying that the owners, drivers, conductors, and road side vendors do not benefit from them anymore. This is also attributed to loss of incomes from the beneficiaries of the motor vehicles. World over, motor vehicle collisions kill 1.2 million people with a greater number of non-fatal injuries annually (World Health Organization, 2015) which has resulted into loss of employment and incomes for those who benefit from the activity as more money is spend for treatment of health and well-being of inured survivors and their families as well (Donaldson *et al.*, 2009).

Lastly, the government incurs increased expenditure for providing health services to causalities. This means that the money that would have been used for other socioeconomic transformation and provision of basic services. The expenditure include transporting causalities in hospitals, payment for medical bills, including others services. Therefore, the more the expenditure to road accidents fatalities the less the development of the communities because much money is spent on causalities. This implies more attention is required to be put in place to secure road safety and traffic laws to protect the lives of the people and enhance socioeconomic transformation of our societies. It is estimated that accidents cost Shs 4.4 trillion ($1.2 billion) in lost productivity and medical expenses annually, representing five per cent of Uganda's Gross Domestic Product (UNECA, 2018).

5. Conclusion and Recommendations

5.1 Conclusion

The results show that, human errors and failings (vehicle faults), defective vehicles and bad roads contribute significantly to HRAs, which have resulted in deaths, injuries, property damage and loss of socioeconomic productivity and revenues. Therefore, if these are not checked passengers, road users and motorists will continue to lose their lives, property, increased expenditure and loss of revenues and incomes

5.2 Recommendations

1. Government, through road traffic police should undertake regular sensitization, training and re-training of motorists on road safety measures to promise safe and efficient public transport.
2. Traffic police management should empower traffic officer to implement and enforce traffic safety rules and they should not be compromised that is, whoever commits an offence to be prosecuted without fear or favor, as it is now especially those with power and influence in political circles and leadership.
3. All motorists should be checked at different checkpoints as it is for the buses because private cars and taxis over speed than the buses.
4. UNRA should take on the responsibility to reinstall all the road signs and safeguard them, and it should remark the road as it is required including widening the road.
5. No motorist should be allowed to drive without wearing safety shoes. It was observed during the study majority of the drivers wear open shoes or sandals while driving on the road which risks both their lives and the onboard passengers.
6. Installation of long-distance cameras and speed gun on the ways to help in arresting wrong doers such reckless and careless, overloading and driving under the influence of alcohol.
7. The feeder roads should also be patrolled regularly because that is where culprits pass to bit traffic police sharp-checks and express penalties for overloading, DMCs, licenses and third party.

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