

Road traffic accidents and their impact on economic growth in Mogadishu, Somalia

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Abstract - traffic rules and implementing road regulations. Road traffic accidents are rapidly becoming a danger to public health and to regional economic development in many developed countries. Road traffic accidents add to the misery by causing death, sickness, disability, grief, loss of income, and property damage. In this report, some of the main findings of the analysis were presented in order to evaluate the causes and economic impacts of road accidents in Mogadishu-Somalia. The research methodology of this study includes a literature review, site observations, personal interviews as well as questionnaire surveys, and survey analysis. The sampling method was used, in order to determine the most representative size of a population. In the process of selecting the sample from the target population, Random sampling technique as a probability sampling was used. Purposive sampling was used as non-probability sampling to categorize the respondents into various categories. The study found that the level of accidents in Mogadishu is very high, while these accidents are causing great loss of lives and destruction of valuable properties. The key factors contributing to road accidents in Mogadishu are night driving, narrow roads, and poor construction and bad planning of roads. Vehicle repair costs as well as medical costs are listed as having the highest economic impact due to road traffic accidents in Mogadishu. In order to eradicate the issue of road traffic accidents in Mogadishu, Somalia, it is recommended that the government improve road conditions and maintain roads in Mogadishu, improve road designs such as roads and intersections, improve vehicle designs, establish skilled and well-trained drivers, Increase numbers of the traffic police to enforce

Key Words: Road Traffic Accidents, Impact, Economic Costs of Road Traffic Accidents, Mogadishu, Somalia.

1. INTRODUCTION

Road traffic accidents are considered to be the highest reason for injury, death, disability and property losses in all nations of the world, especially in low- and middle-income

countries, until road traffic accidents become one of the most fundamental causes of human and economic losses in urban communities in the present situation (Atubi & Gbadamosi, 2015).

The occurrence of traffic accidents usually causes a significant number of human and financial casualties. The casualties mainly arise from the cost of care and loss of income in both cases of death and permanent impairment. In 2013, the World Health Organization (WHO) reported that almost 1.24 million people worldwide die each year from road traffic accidents. Fatalities are expected to rise to around 1.9 million per year in 2020 if adequate measures are not taken. More than 90% of those global fatalities will occur in low- and middle-income countries like Somalia, particularly Mogadishu (Mohamed, 2015).

The problem of accidents is not only limited to the occurrence and destruction of valuable property, but also the most economically active and productive age groups, especially those between the ages of 15 and 45 years, are the most heavily involved in traffic accidents, which implies that accidents present a global challenge to the earning and active population (Atubi & Gbadamosi, 2015) This will affect monetary development, simultaneously with the lack of valuable staff members and creative participants facing the economic builders. Moreover, bodily disabled patients with the lowest earning capacity are severely affected as they are most likely to rely on physical activity (WHO, 1996), and victims tend to stay longer than average in the hospital. The global fixtures and impacts of road accidents are as follows(Asian Development Bank & ASEAN, 2005):

1. Road crashes are estimated to kill 1.2 million people and injure 20-50 million people per year (daily road tolls of more than 3000, i.e., nearly 140 deaths per hour)

2. Death rates of deaths in developing countries are much higher (at least 50 times higher) than in developed countries

3. About 88 per cent of deaths worldwide occur in developing countries

4. It is expected to kill 2.4 million in 2020.

5. Road traffic deaths are expected to rise by nearly 90% in low- and middle-income countries and to decrease by 30% in high-income countries.

6. Sustained declining trends in road fatalities in developed countries have been attributed to concerted efforts in many sectors, including effective coordination, community involvement.

Road traffic incidents are multi-factorial, grouping can be done into three major human, environmental, and vehicle variables (Daniel, 2016). Human, environmental, and vehicle factors were found to have caused more than 92 % of road traffic accidents in developing countries. Although drivers alone attribute approximately 80% of road accidents in the world (Ramisetty-Mikler & Almakadma, 2016). However, it is defined that the human and environmental factors that affect road traffic accidents are the most common factors, while the use of drugs, the use of cell phones while driving or crossing roads, the lack of use of seats Chaudhry & Iqbal (2018) describe human risk factors that may lead to road traffic accidents (Chaudhry & Iqbal).

Human risk factors that contribute to road traffic accidents may be driving factors such as drunken driving, excessive speed, non-compliance with traffic laws, imprudent driving, driving fatigue, sleepiness, younger age driving, inadequate use of helmets, safety belts, medical conditions (sudden illness, myocardial infarction, impaired vision), psychological factors (impulse danger), defects, Psychological factors (risk of impulse), defective judgment, slow decision-making, aggression, poor vision, factional family days, and diversion when driving on cell phones are also responsible human factors leading to road traffic accidents (Y. Zhang, Jing, Sun, Fang, & Feng, 2019).

Drivers' errors account for about 80% of the world's road incidents. The Traffic Related errors are more common in young drivers, whereas road rage, overconfidence, failure to comply with road signals, overtaking, and over-speed are the factors most associated with road accidents (Syed, 2017). The following are the most common errors that drivers make as a result of road traffic accidents.

There are several road and environmental factors which cause and contribute to road traffic accidents worldwide. The environmental risk factors are mostly related to the roads, like the narrow roads, defective roads, defective layout of crossroads, poor lighting, poor construction, and bad planning of roads. (Shantajit, T., Kumar, C. R., & Zahiruddin, Q. S. 2018), However traffic control devices such as, signal condition, street lighting and weather conditions are also considered as an environmental factors which

commonly contributes the road traffic accidents (Y. Zhang et al., 2019),

There are approximately 1.25 million deaths annually due to road traffic accidents worldwide, while there are also 20 -50 million cases of non-fatal injuries annually. The cycle users, motorcyclist as well the pedestrians are the most vulnerable people of the accidents. The consequences of road traffic accidents cause financial burdens for the victims, their friends, family members, employers, insurance companies, and the government. It is difficult to measure the exact financial loss of human suffering and sacrifices. The compensation of financial loss can be the pain suffering from accident cost or of the future in the form of reduction in expectancy of life and future lost income. Past lost income on medical expenses, vehicle repair, vehicle hire, and travel expenses can also be included for total financial loss (Jamroz et al., 2018).

Road traffic accidents are currently deteriorating the financial wealth of many nations. In this regard, (WHO 2004); urges that, in economic terms, the cost of road crash injuries is estimated at roughly 1% of Gross National Product (GNP) in low- income countries, 1.5% in middle-income countries and 2% in high-income countries. The direct economic costs of global road crashes have been estimated at US\$ 518 billion, with the costs in low-income countries estimated at US\$ 65 billion – exceeding the total annual amount received in development assistance. In addition to this, in terms of regional disparities of cost, the main considered Cost items of road traffic accidents could be differed from one study to another, the cost of road traffic accidents using human capital approach can be categorized into three major components and they are; human costs, property damages costs and general crash costs. Human Cost Fatality loss of output, Disability loss of output, Injury loss of output (off-work cost) Medical cost, Family and community loss cost, Funeral cost. Property Damage Cost, Vehicle repair cost, el time delay cost Police work cost, Insurance and Vehicle detention period cost, on-vehicle property damage cost, General Crash Cost, (Ghadi, Török, & Táncoz, 2018).

The majority of the victims from road traffic accidents are mostly suffer from lack of income, as well as lack of employment opportunities. It is commonly include the effect inability to pursue to happiness and activities like sport and even entertainments (Chaudhry & Iqbal, 2018). Addition that the pain suffering victims from the road accidents have huge financial losses in the form of reduction of life expectancy and future lost income (Gorea, 2016). Additionally the family of the victim has financial burden especially when income loss or decrease by the victim(s) (Ghadi et al., 2018). Indirect losses due to road traffic victims are exist. While the person suffering from Post-traumatic stress disorder (PTSD) have a problem to their works as compare to the other persons without PTDS. Job losses due to long leaves are also common among in the victims (Gorea, 2016) . However some studies

try to estimate these cost by conducting a survey according to their experience of the matter (Ghadi et al., 2018).

2. Methodology

2.1 Study Area

This study was conducted into to Mogadishu city. This area was selected purposely mainly due to three reasons. Firstly, in the recent years Mogadishu City has been observed to have a higher rate of traffic accidents than any other city in Somalia. Secondly, business-wise Mogadishu is the industrial and commercial city which means that it attracts large numbers of people from other places in the country and thirdly, the researcher knows more about the city roads. The following figure:2.1 Mogadishu Map, was shown at intersection of Dabka, roundabout of KM4, intersection of Zoobe and intersection of Hawl-wadag.



Figure: 2.1 Mogadishu Map (Source: Google Map).

2.2 Population of the study

Population is the group of potential participants, objects, or events to whom or to which researchers want to generalize the results of the study derived from a sample drawn from the population. The target population was drivers, pedestrians, road accidents victims in Mogadishu, as well the business owners and experts. Those categories were selected for the reason that of their being rich information categories according the road traffic accidents in Mogadishu city.

2.3 Sampling size

The sampling frame was the population living and working in Mogadishu city, as it is recognized to be used with the sampling technique.

This is the overall population. The population lives in Mogadishu, which has 245,000 citizens. **As shown in Eq. (1), Slovin's formula** was used to select a sample from the target population.

$$n = N \div (1 + Ne^2) \quad n = N \div (1 + Ne^2) \quad \text{----- (1)}$$

n = sample size, N = study population size, e = margin of errors, that acts as an allowance for possible errors that may arise for the respondents,

The confidence level is 93%.

The margin of error is 7%.

$$n = 2425000 \div (1 + 2425000(0.07)^2)$$

$$n = 2425000 \div (1 + 2425000(0.07)^2) = 205.$$

2.4 Data Collection and Techniques

During the analysis, the researcher administered the questionnaires, and under his guidance, the respondents were expected to fill them out. There were two major forms of questionnaires: closed and open ended ones. The rationale behind using closed ended questions was to be direct, brief, and straight-to-the-point. Above all, this method was said to be research efficient in the sense that it is not expensive, is free from interviewer bias, and the respondents were in a position to provide accurate and clear answers.

2.5 Data Analysis Plan

Data analysis refers to calculating sure measures along with searching for relationship patterns that exist in some of the groups of records. The field-gathered data was used. The questionnaires were then entered into excel software for data analysis and then published in MS-word software. As noted earlier, the analysis involved descriptive statistics. That involved using percentages to present the respondents' distribution.

3) Data Presentation

Data presentation mostly shows the analyzed data by tables and graphs

SECTION 1: PERSONAL INFORMATION

A. Gender of the respondents

The purpose of this part was to include all gender categories in the respondents. According to the respondents, out of 205, 178(87%) males were interviewed, while 27(13,87%) of the total sample size was female. Figure 3.1 shows the variation in gender of the respondents, in the study.

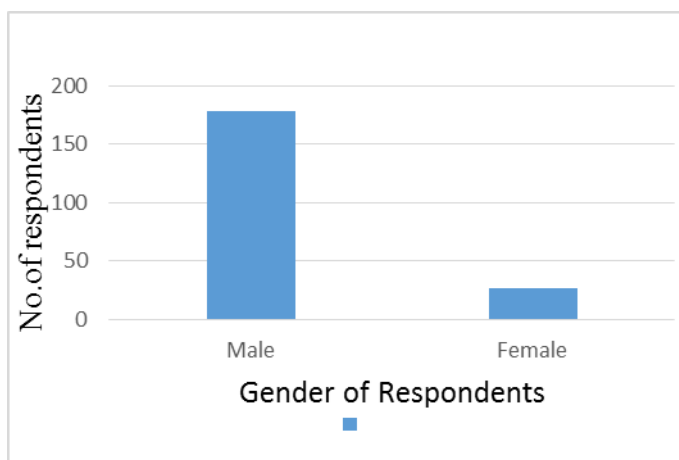


Figure 3.1 Gender of Respondent

B. The Age of the Respondents

Driver age is one of the main contributing factors to road traffic accidents, so in this research, this question was added to the exam to determine the respondent's age. As shown in figure 3.2, the age of respondents in this study was classified into six groups, between ages 18-20, 21-30 years, 31-40, 41-50 years, and over 50 years. The research finding from this survey shows that 14(7%) of the respondents in this sample were under the age of 18 years old. 46 (22%) respondents were between the ages of 18-20years old. 61(31%) of respondents aged 21 to 30 years old and they is the majority. It is also seen that 38(19%) of respondents were between 31 and 40 years old, while 32(16%) of respondents were between 41 and 50 years old. However, 12(6%) of the respondents were over 50 years old. Figure 3.2 indicates the age differences of respondents in this study.

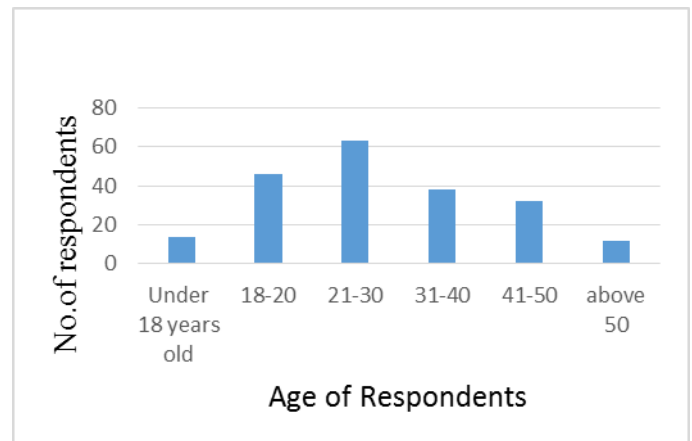


Figure 3.2 Age of Respondents

C. Education level of respondents

Knowledge is an important factor for dealing with daily life obstacles and for finding out the exact reasons behind the problem, which can help the researcher gather more factual information about the field. In this study, the research findings showed that 21(10.2%) of respondents were Non-meaning that there was no educational history, 41(20%) primary level of respondents, 68(33.1%) majority level of respondents, 37(18%) diploma, 16(8%) bachelor, 13(6.3%) master, 9(4.4%) of respondents were PHD holders. Figure 3.3 shows the differing levels of respondents' education.

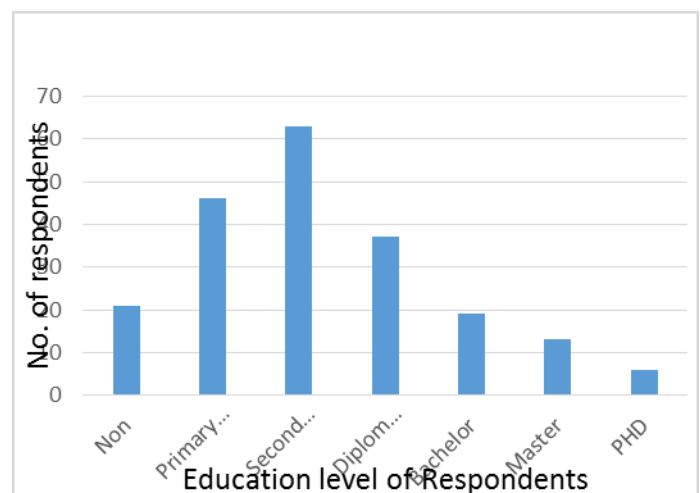


Figure 3.3 Education Level of Respondents

D. The occupation of respondents

Accidents involve things in the smooth line of work that break down. This will lead to a significant downturn in the employment of working people and enterprises. I added the question to predict the economic consequences of road accidents in urban areas. areas. The research findings of the study showed that that 83(40%) of the respondents were employed, 76(37%) of the respondents were self-employed

were self-employed, 8(4%) of the respondents were unemployed; and 38(19%) of the respondents were students. S Figure 3.4 shows the occupations of respondents.

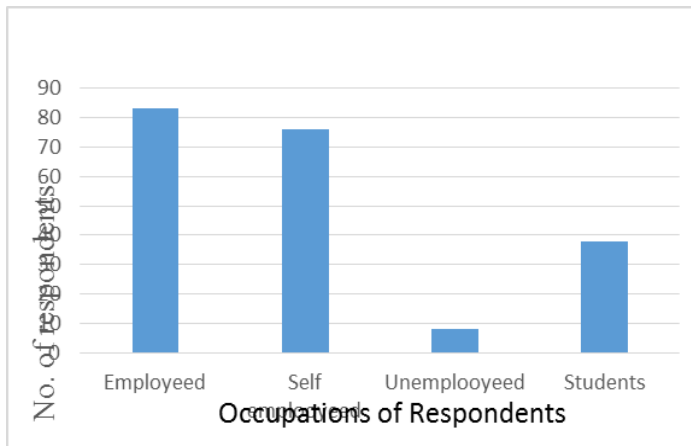


Figure 3.4. Occupation of Respondents

Job Titles of Respondents

Every time a senior person is involved in an accident, it directly affects the finances and lives of many people in the community. So this question was to add the job titles of respondents in the study. Research results indicate that 49(24%) of respondents were management level, 67(33%) of respondents were middle level, and 89(43%) of respondents were organizational level, which is the majority of respondents. Figure 3.5 shows the job titles of the respondents in this study.

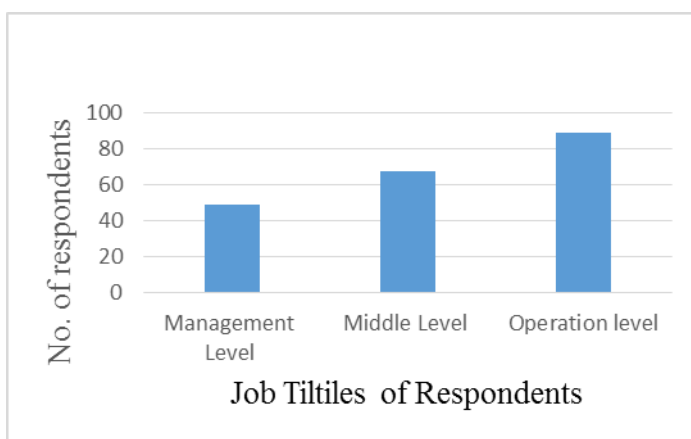


Figure 3.5 Job Titles of Respondents

F. Monthly incomes of the respondents

The respondents' monthly income should assess the degree to which road traffic accidents' financial crisis is impacting the population in the city. The question was introduced to analyze the monthly income of the respondents in the study. Research findings of this study showed that 4(2%) of respondents had less than USD 100, 43(21%) of respondents

had a monthly income of between USD 100-200, 66(32%) of respondents had a monthly income of between USD 300-500. This is the majority, 55(27%) of respondents had a monthly income of between USD 600-800, 15(7%) of respondents had a monthly income of between USD 600-800. Figure 3.6 showed that the monthly income of the respondents in this study.

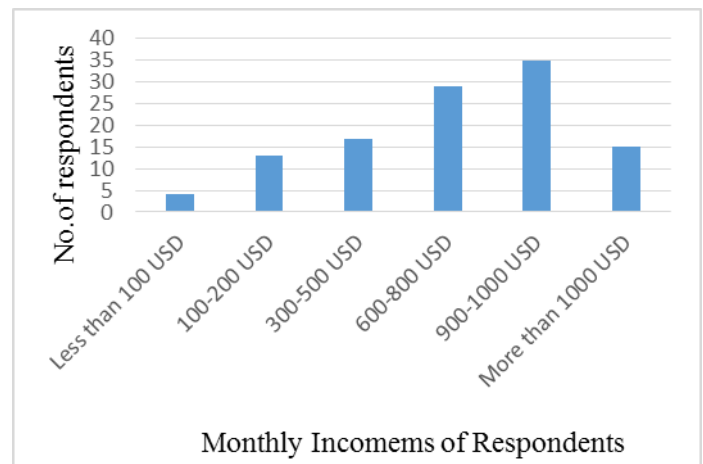


Figure 3.6 Monthly Income of Respondents

SECTION 2: LEVEL, KIND AND CAUSES OF ACCIDENTS IN MOGADISHU

The aim of this section was to determine the level and types of road traffic accidents in Mogadishu City, the kinds of vehicles that are always involved in road traffic accidents, the responsible parties in road traffic accidents in Mogadishu, the periods when the most injuries occur in Mogadishu, as well as the areas that always have the highest incident rate and the major factors that contribute to the road traffic accidents in Mogadishu.

A. The level of road traffic accidents in Mogadishu

To know The level of accidents in the city should allow the researchers and the relevant agencies in the city of Mogadishu to alert people about the possibility of accidents as they rise. So this question was introduced to assess traffic accidents at a level in Mogadishu city. The research findings showed that out of 205, 18(9%), of these respondents said that the level of 57(28%), of these respondents said that the level of accidents is high, and 130(63%) of these respondents said that the level of road traffic accidents is very high. Table 3.1 and Figure 3.7 show the level of road traffic accidents in Mogadishu city.

Table 3.1 the Level of Road Traffic Accidents in Mogadishu

| No | level of accidents in Mogadishu | No. of respondents | Percentages |
|----|---------------------------------|--------------------|-------------|
| 1 | Normal | 18 | 9% |
| 2 | High | 57 | 28% |
| 3 | very high | 130 | 63% |
| 4 | Total | 205 | 100% |

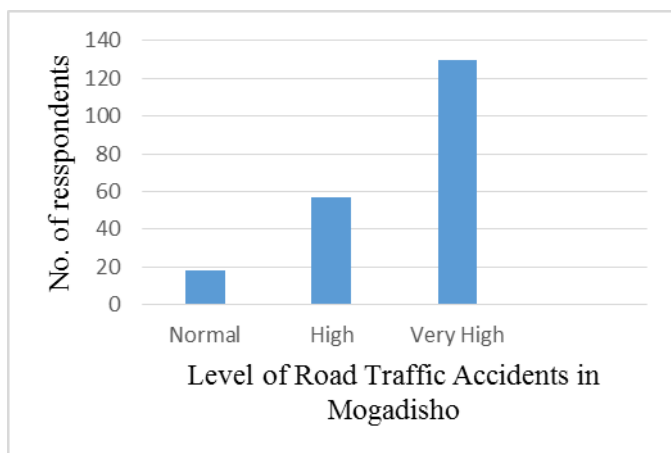


Figure 3.7 the Level of Road Traffic Accidents in Mogadishu

B. Kind of road traffic accidents that always happen in Mogadishu

Knowing the kinds of road traffic accidents that always occur in the city would provide the government with a solution to this problem. And this question has been asked in order to figure out what kind of road traffic accidents always happen in Mogadishu. Research findings showed that out of 205, 18(9 percent) of these respondents said the road accident level is normal, 57(28 percent) of those respondents said the accident level is high, and 130(63 %) of those respondents said the road accident level is very high. Table 3. 2 and Figure 3. 8 below show that the kind of Road traffic accidents always happen in Mogadishu city.

Table 3.2 Kind of Accidents which is constantly happen in Mogadishu

| No | kind of accident. | No. of respondents | Percentages |
|----|------------------------|--------------------|-------------|
| 1 | 1.Head-on collision | 28 | 14% |
| 2 | 2.Single card accident | 54 | 26% |
| 3 | 3.Multiple accident | 81 | 40% |
| 4 | 4.All of them | 42 | 20% |
| 5 | Total | 205 | 100% |

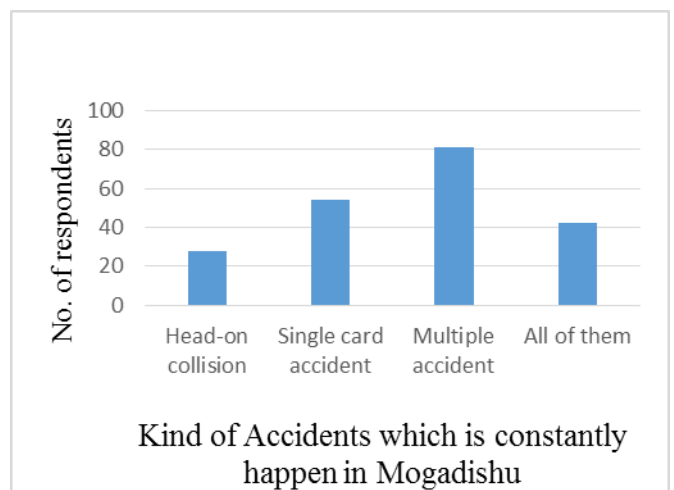


Figure 3.8. Kinds of Accidents that Constantly Happen in Mogadishu

C. Type of vehicle which is usually involved in road traffic accidents in Mogadishu

If the type of vehicle that usually causes crashes is accepted, it will help the government cope with the type in a specific manner to shield it from the population. This question was added to evaluate the type of vehicle that is usually involved in accidents in Mogadishu. Research findings found that out of 205, 24(12%) of those respondents said that the type of vehicle that often causes injuries is a bicycle, 16(8%) of those respondents said that the type of vehicle is a motorcycle, 56(27%) of those respondents said that The type of vehicle that is always involved is a truck, and the remainder is made up of 19(9%) of those respondents. Table 3.3 and Figure 3.9 indicate the type of vehicle that is always involved in road traffic accidents in Mogadishu.

Table 3.3

| No | type of vehicle. | No of respondents | Percentages |
|----|------------------|-------------------|-------------|
| 1 | Bicycles | 24 | 12% |
| 2 | Motorcycle | 16 | 8% |
| 3 | buses | 56 | 27% |
| 4 | personal car | 19 | 9% |
| 5 | Heavy trucks | 67 | 33% |
| 6 | Others | 23 | 11% |
| 7 | Total | 205 | 100% |

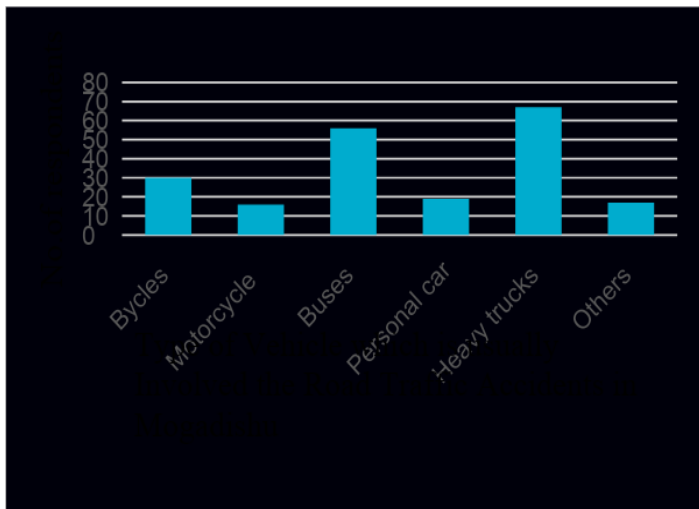


Figure 3.9 Type of Vehicles which are Usually Involved in Road Traffic Accidents in Mogadishu

Table 3.4 Responsible Members of Road Traffic Accidents in Mogadishu

| No | The responsible members for road traffic accidents in Mogadishu | of respondents | percentages |
|----|---|----------------|-------------|
| 1 | Drivers | 83 | 40% |
| 2 | Pedestrians | 27 | 13% |
| 3 | Drivers & pedestrians | 61 | 30% |
| 4 | None of them | 34 | 17% |
| 5 | Total | 205 | 100% |

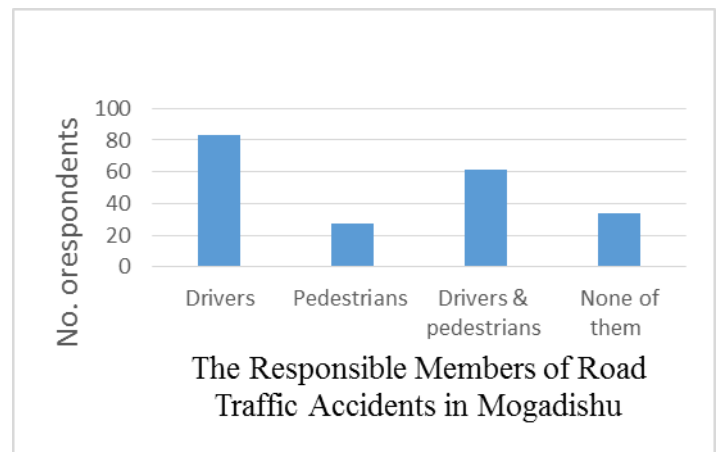


Figure 3.10 Responsible Members of Road Traffic accidents in Mogadishu

D. The responsible members of accidents in Mogadishu

Recognizing the responsible members of road traffic accidents in the city will help the government to pay special attention to these members. This question was introduced to evaluate the responsible members of road traffic accidents in Mogadishu. The research findings showed that out of 205, 83(40%) of these respondents said that they said that the drivers are responsible for the road traffic accidents in Mogadishu. That is the majority, 27(13%), said that the pedestrians are responsible for the road traffic accidents in Mogadishu. In Somalia, 61(30%) of these respondents said that the drivers and pedestrians are responsible for the road traffic. Table 3.4 and Figure 3.10 showed that the responsible parties in road traffic accidents in Mogadishu.

E. The Time Most Road Accidents Happen in Mogadishu

It's crucial to know the period when most traffic accidents occur in the city and will give accident information to both road users and the police. This question was added to learn the moment the most accidents happen in Mogadishu City. Research findings showed that out of 205, 38(19 %) of those respondents said that the time that most accidents occur in Mogadishu is the morning, 66(32% of those respondents said that it is the afternoon, and that is the majority, 9(4%) of those respondents said that it is the evening. Table 3.5 and figure 3.11 indicate that the time that most accidents occur in Mogadishu city.

Table 3.5 Time Most Road Accidents Happen in Mogadishu

| No | Time of accidents | No. of respondents | Percentages |
|----|-------------------|--------------------|-------------|
| 1 | Morning | 38 | 19% |
| 2 | Afternoon | 66 | 32% |
| 3 | Evening | 92 | 45% |
| 4 | Night | 9 | 4% |
| 5 | Total | 205 | 100% |

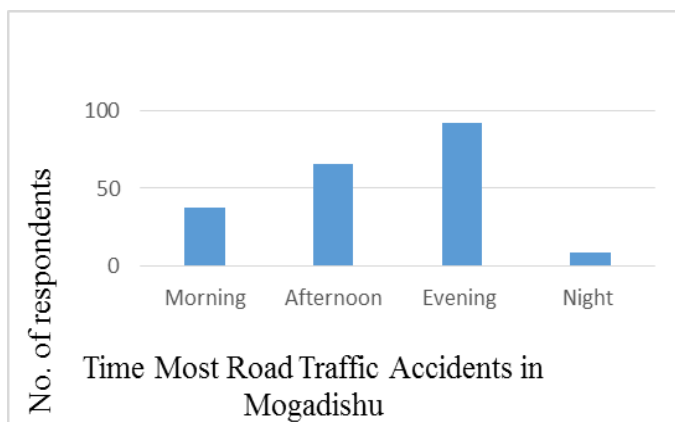


Figure 3.11 Time Most Road Accidents Happen in Mogadishu

F. The day on which most accidents take place in Mogadishu

It's crucial to know the day of the week that most traffic accidents occur in the city and knowing this will give accident information to both road users and the police. This question was added to learn the day of the week that most accidents happen in Mogadishu City. The research findings showed that, out of 205, 11(5 of these respondents said that the day of the week on which most accidents take place is Monday, 16(8%) of these respondents said it is Tuesday, 36(18%) of these respondents said that it is Wednesday, 49(24%) of these respondents said that it is Thursday, 16(8%) of these respondents said that it is Friday, 54(26%) of these respondents said that it is Saturday. Table 3.6 and Figure 3.12 show that the day of the week that most accidents take place in Mogadishu city.

Table 3.6 Day which Most Accidents Take Place in Mogadishu

| No | The day that most accidents take place | No. of respondents | Percentages |
|----|--|--------------------|-------------|
| 1 | Monday | 11 | 5% |
| 2 | Tuesday | 16 | 8% |
| 3 | Wednesday | 36 | 18% |
| 4 | Thursday | 49 | 24% |
| 5 | Friday | 16 | 8% |
| 6 | Saturday | 54 | 26% |
| 7 | Sunday | 23 | 11% |
| 8 | Total | 205 | 100% |

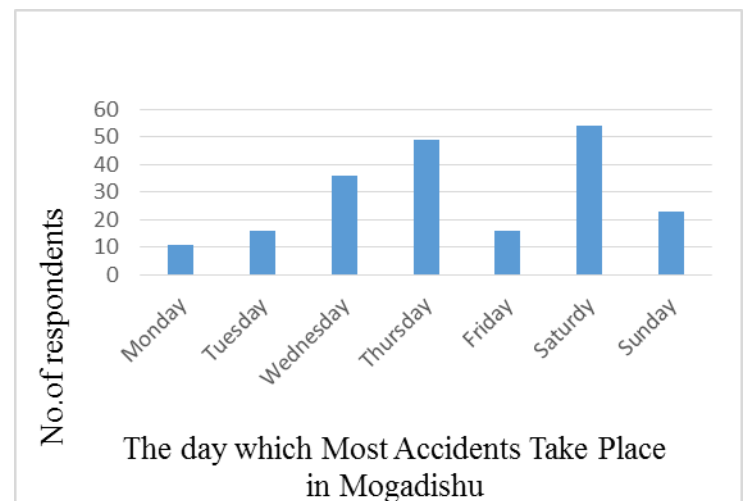


Figure 3.12 Day on which Most Accidents Take Place in Mogadishu

G. The locations in Mogadishu where road accidents occur are high

Understanding the areas where the majority of traffic incidents occur in Mogadishu will make the government take extra responsibility for those areas.

And send more police to minimize accident risk. In the research questionnaire, this question was instructed to identify the locations where most injuries occur in Mogadishu. According to the Research findings, out of 205, 31(15.1%) of these respondents said that Dabka & Taleex junctions are locations where road traffic accidents are high based on their experience, 39(19%) of these respondents said Dabka & Zoobe junctions are locations where road traffic accidents are high based on their experience, 15(7.3) of these respondents said Dabka & Zoobe junctions are locations where road traffic accidents are high based on their

experience, 33(16.1%), said K4 roundabout and Taleex intersections are the locations where the accidents are high, 45(22%) of the respondents said Dabka, Taleex and Zoobe junction are the most common places where traffic accidents are high, 17(8.3%), of the respondents said Hawl-wadag and Zoobe junction are the places where accidents are high, while only 4(2%), of the respondents said Black Sea and Bar-Ubah are the places where road accidents are high based on their experience. The following Table 3.7 and Figure 3.13 show the locations in Mogadishu where road accidents occur frequently.

Table 3.7 Locations in Mogadishu where the Road Accidents occur highly in Mogadishu

| No | Location | The number of respondents | Percentages |
|-------|--|---------------------------|-------------|
| 1 | Dabka and Taleex junctions | 31 | 15.1% |
| 2 | Taleex & Zoobe junctions | 39 | 19% |
| 3 | Dabka & Zoobe Junctions | 15 | 7.3% |
| 4 | Km4 roundabout & Taleex junction | 33 | 16.1% |
| 5 | Dabka, Taleex & Zoobe Junctions | 45 | 22% |
| 6 | Hawl-Wadag and Zoobe junctions | 17 | 8.3% |
| 7 | Tar-Buunka, Taleex junctions | 21 | 10.2% |
| 8 | Black sea, Taleex & Bar-Ubah junctions | 4 | 2% |
| Total | | 205 | 100% |

The figure below was taken from Google map of Mogadishu. To show the intersections in Mogadishu City and the rate of accidents at each intersection in Mogadishu City, in particular the intersections shown in table 3.7 above.



Figure 3.13: Locations in Mogadishu where road accidents occur frequently (Google Map of Mogadishu).

H. The major contributory factors to road accidents in Mogadishu Somalia

Defining the major factors that contribute to the road traffic accidents in Mogadishu City can be of great benefit in determining how to minimize this problem as well as being extra vigilant in these circumstances, particularly where major factors are found in these areas. This may play a significant part in eliminating serious injuries from accidents as well as their impacts on economic growth. This topic was introduced to analyze the thoughts of the respondents about the major factors that contribute to the road traffic accidents in Mogadishu city.

In Table 3.8 and Figure 3.14. We have survey data on five point scale from strongly disagree to strongly agree, neutral to strongly agree. In 14 different variables in this data sample. In order to measure the weight of each element in the table satisfaction survey data table function method to find out how many people responded to each of these categories. These Criteria are also used to determine which factor has the highest priority and which one has the least priority.

According to the research findings, the results showed the following:

I strongly disagree.

According to the strongly disagree the result indicated that pedestrians factor have 25% of strongly disagree. Over-speeding factor has 17% of strongly disagree. Drunk driving factor has 3% of strongly disagree. Distracted driving factor has 9% of strongly disagree. Reckless driving factor has 8% of strongly disagree. Night driving factor has 13% of strongly disagree. Teenage Driving factor has 6% of strongly disagree. Jumbling red Traffic lights factor has 4% of strongly

disagree. Overtaking & Wrong Driving factor has 10% of strongly disagree. Road Rage factor has 14% of strongly disagree. Lack of marking signals factor has 9% of strongly disagree. Huge number of vehicles factor has 30% of strongly disagree. Narrow roads factor has 5% of strongly disagree. Poor construction & bad planning of roads factor has 0% of strongly disagree. All of them factor has 27% of strongly disagree.

DISAGREE

According to the Disagree the result indicated that Pedestrians factor have 20% disagree. Over-speeding factor has 22% disagree. Drunk driving factor has 17% disagree. Distracted driving factor has 13% disagree. Reckless driving factor has 9% disagree. Night driving factor has 17% disagree. Teenage Driving factor has 9% disagree. Jumbling red Traffic lights factor has 5% disagree. Overtaking & Wrong Driving factor has 18% disagree. Road Rage factor has 16% disagree. Lack of marking signals factor has 11% disagree. Huge number of vehicles factor has 25% disagree. Narrow roads factor has 16% disagree. Poor construction & bad planning of roads factor has 4% disagree. All of them factor 8% disagree.

NEUTRAL

According to the Neutral, the result indicated that the pedestrian factor has a 26% Neutral. Over-speeding factor has 3% Neutral. Drunk driving factor has 33% Neutral. Distracted driving factor has 23% Neutral. Reckless driving factor has 35% Neutral. Night driving factor has 9% Neutral. Teenage Driving factor has 35% Neutral. Jumbling red Traffic lights factor has 18% Neutral. Overtaking & Wrong Driving factor has 17% Neutral. Road Rage factor has 28% Neutral. Lack of marking signals factor has 33% Neutral. Huge number of vehicles factor has 21% Neutral. Narrow roads factor has 17% Neutral. Poor construction & bad planning of roads factor has 12% Neutral. All of them factor 13% Neutral.

AGREE

Accepting the agreement, the result indicated that

Pedestrian's factor has 12% agree. Over-speeding factor has 31% agree. Drunk driving factor has 21% agree. Distracted driving factor has 32% agree. Reckless driving factor has 32% agree. Night driving factor has 22% agree. Teenage drivers agree with 32%. Jumbling red Traffic lights factor has 28% agree. Overtaking & Wrong Driving factor has 33% agree. Road Rage factor has 24% agree. Lack of marking signals factor has 29% agree. Huge number of vehicles factor has 12% agree. Narrow roads factor has 21% agree. Poor construction & bad planning of roads factor has 37% agree. All of them agree with 23%.

I strongly agree.

Accepting the result, the result indicated that the pedestrian factor has 17% strongly agreed. Over-speeding factor has 27% strongly agree. Drunk driving factor has 26% strongly agree. Distracted driving factor has 23% strongly agree. Reckless driving factor has 17% strongly agree. Night driving factor has 40% strongly agree. Teenage Driving factor has 18% strongly agree. Jumbling red Traffic lights factor has 44% strongly agree. Overtaking & Wrong Driving factor has 22% strongly agree. Rage factor has 18% strongly agree. Lack of marking signals factor has 18% strongly agree. Huge number of vehicles factor has 12% strongly agree. Narrow roads factor has 40% strongly agree. Poor construction & bad planning of roads factor has 47% strongly agree. All of them factor has 29% strongly agree.

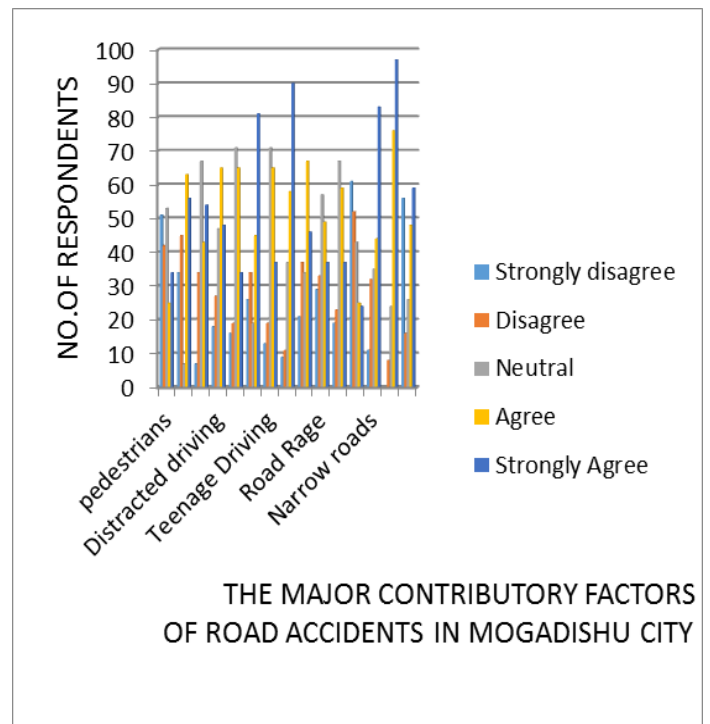


Figure 3.14 Major Contributory Factors of Road Accidents in Mogadishu City

I. The Amount of Traffic police in Mogadishu Roads

The fewer traffic police on the city's roads could possibly improve the rising number of accidents. The respondents were asked whether there were enough traffic police on the city's roads. According to the research findings showed that out of these 205, 127(62%), of these respondents said that there is enough amount of traffic police in Mogadishu roads and that is the majority, while 78(38%) of these respondents said there is No enough traffic police In Mogadishu, roads Figure 3.15 below indicated that if the amount of police on the city roads is enough or not.

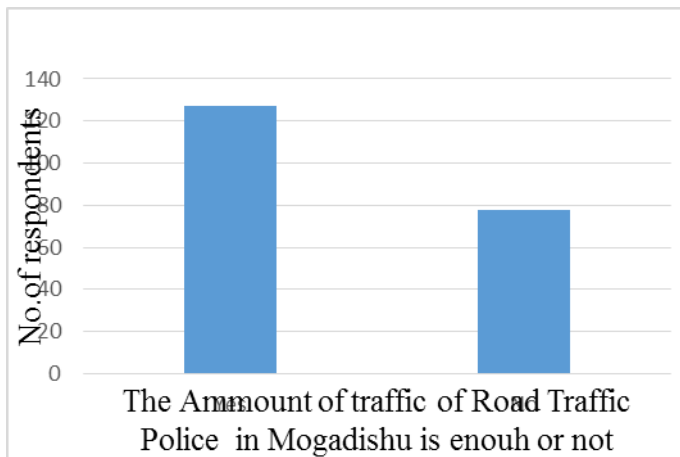


Figure 3.15 Amount of Traffic of road traffic Police in Mogadishu is enough or not enough

J. The Developments in the Police Department Have Been Made in Relation to Road Traffic Accidents in Mogadishu

This question was added to assess developments made in Mogadishu over the last two years by the traffic police department. The research findings showed that 86(42%) of these respondents out of 205 said "Yes," which means police made tangible developments towards traffic accidents in Mogadishu city, while 119(58%) of those respondents said "No," which means police did not make any tangible developments towards road accidents in Mogadishu, Somalia. Figure 4.16 below shows that if any developments were made by the traffic police to implement the road safety programs.

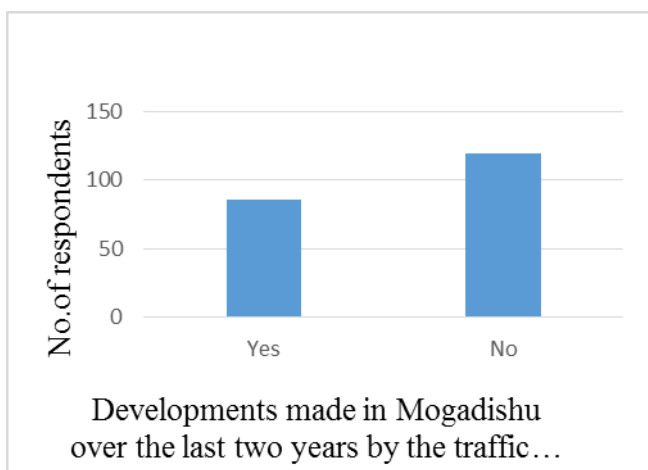


Figure 3.16 Developments made in Mogadishu over the last two years by the traffic police department.

K. Difficulties which the traffic police department faces when enforcing road safety programs in Mogadishu City.

Departments of traffic control may have some difficulties in dealing with the implementing the traffic safety related programs. This question was introduced in order to assess the difficulties faced by the traffic police in implementing the safety programs. Research findings showed that out of 205, 26(13%) of those respondents stated that lack of traffic familiarity with the following rules and relegations, 47(23%) stated that indiscipline on roads and violation of traffic rules, 39(19%) stated that the layout of city roads, 48(23%) stated that lack of well-trained police offered to enforce lows, and 28(14%) stated that lalows, and lack of provision traffic signs. 17 (8%) said that I don't know. Table 3.9 below illustrates what the traffic police department faces when enforcing road safety measures in the city of Mogadishu.

Table 3.8 Difficulties which the Traffic Police Department faces when enforcing road safety programs in Mogadishu city.

| No | Respondent's Opinion | Respondent Number | Percentage |
|-------|---|-------------------|------------|
| 1 | Lack of familiarity with traffic with the following rules and relegations | 26 | 13% |
| 2 | Indiscipline on the Roads and Violation of Traffic Rules | 47 | 23% |
| 3 | The layout of the city's roads | 39 | 19% |
| 4 | The lack of well-trained police officers to enforce the laws | 48 | 23% |
| 5 | Lack of provision for traffic signs | 28 | 14% |
| 6 | I don't know | 17 | 8% |
| Total | | 205 | 100% |

Summary of section 2- Level, kinds and causes of road traffic accidents that usually occur in Mogadishu city

Research results from Figure 3.7 revealed that about 63 % of respondents agreed that the level of road traffic accidents in Mogadishu is very high. Several crashes are the most frequent form of road accident, happening mainly in Mogadishu, as seen in figure 4.8. Heavy trucks are the main types of cars, most of which have road crashes in Mogadishu,

as seen in figure 3.9. Approximately 40 % of the respondents in the survey also accepted that the drivers are the most liable participants in road traffic incidents in Mogadishu, as shown in Figure 3.10. Research results from this analysis also revealed that approximately 44% of those respondents agreed that the evening was the most common accident time in Mogadishu, as shown in Figure 3.11. Thursday and Saturday, as seen in figure 3.12, are the two days on which the majority of the accidents occur in Mogadishu. As shown in figure 3.13, Dabka, Taleex, and Zoobe junction are the places where most road traffic accidents take place. as shown in figure 3.14. Pedestrians, over-speeding, Drunk driving, Distracted driving, Reckless driving, Night Driving Teenage Driving, Overtaking & Wrong Driving, Road Rage, Huge number of vehicles, Narrow roads, Poor construction & Bad planning of roads are the most contributory factors of road traffic accidents in Mogadishu city.

: Summary of Section 3: Consequences of road traffic accidents in Mogadishu city

The result shows that road traffic accidents have more detrimental consequences on the life of the population causes the widespread economic decline, in particular the result showed the road traffic accidents cause a lot of loss of time and money. The result showed that almost 41% of people wounded as a result of road traffic accidents in Mogadishu took at least 2-3 months following road traffic injuries to return to their place of work. This reflects the stress of the crash as well as the injuries suffered by the injured, which is taking too much time to get back to their places of work. The results showed that most of the victims do not receive salaries or help from the government or the company they work for during their absence from work, which can have a significant economic impact on victims in addition to their injuries. The research also revealed that the majority of victims did not seek compensation or support from the government and the organization with which they work during their absence from work and, in addition to their injury, may have a substantial economic effect on victims. The result showed that approximately 30% of the victims required 600-800 USD to repair their vehicles after the crash, while approximately 13% of the victims required more than 1000 USD in order to repair their vehicles, which is an excessive amount of money that can be needed after an accident. The result showed that approximately 26% of the victims required 600-800 USD to repair their vehicles after the accidents, while approximately 13% of the victims required more than 1000 USD to repair their vehicles, which makes excessive the amount of money that should be expected after the accidents. Nonetheless, the result showed that 34% of the population residing in Mogadishu acknowledged that the effects of road traffic accidents on economic growth are very high, while the majority of the people living in Mogadishu spend most of their money on medical costs, vehicle repair costs, police & administration costs, loss of productive population, loss of manpower Hours

Finally, the result revealed that approximately 81.0% of the population living in Mogadishu have no insurance cover for legal expenses, which makes them more vulnerable to accidents, especially on the economic side.

Summary of Section 4: What should be done in order to eliminate the traffic accident problems in Mogadishu?

According to the qualified drivers factor, the research findings showed that strongly disagree 17%, disagree 19%, and neutral 2%, agree 22%, and strongly agree 20%, which represents this factor has the lowest degree of strong agree, which gives less priority to eliminating road accidents in Mogadishu City compared to the other factors in the same table. Accordingly, the driving factor regulations should be strictly applied. Research findings show that factor is strongly disagreed with at 12 %, disagreed with at 12 %, and neutral at 2%, agreeing with 22%, and strongly agreeing with 27 %, which means this factor has the higher grade of strongly agreeing with the previous factor, which gives it greater importance than the previous factor. Research findings show that this factor has an increasing number of traffic policemen. Research findings show that this factor has a strong disagree 17%, a disagree 17 %, a positive 22%, an agree 16 %, and a strongly agree 28 %, which means this factor has the higher grade of strongly agree with the previous factor, which gives more importance than to take compared to the other. The two previous factors According to the factor of improving road condition and maintenance, the research findings show that this factor strongly disagreed with 3 %, disagreed with 7%, neutrally agreed with 25%, and strongly agreed with 47 %, which reflects that this factor has a high degree of strong agreement and less degree of strong disagreement with the previous factor, which makes this factor strongly disagree with the previous factor, which makes this factor have more priority to take in order to eliminate the road traffic accidents in Mogadishu city. According to the factor of all of them, the findings of the research showed that the factor had Strongly Disagree 0 %, Disagree 4 % and Neutral 11 %, 34 %, and 51% strongly agreed. This factor has the highest grade of strongly agreed and no one selected strongly disagreed, which means this factor has the most time to take in order to eliminate the road traffic accidents in Mogadishu city.

5 Result & Discussion

Based on the findings of the research, it is found that the accident level in Mogadishu is very high, see figure 3.7. While the accidents cause great loss of life and other socio-economic properties to be destroyed. For multi-vehicle collision accidents that usually occur in Mogadishu See figure 3.8. Heavy trucks are the vehicle category most frequently included due to road traffic accidents on Mogadishu roads, see Figure 3.9. Dabka, Taleex, and Zobe junctions are places where road traffic accidents are

common in Mogadishu. Because they are located in the center of the city, the largest number of vehicles in the city pass through these junctions, which makes the level of accidents higher than any other junction in the city. The government is therefore expected to pay careful attention to these junctions. Based on the research findings, 39.5% of these respondents strongly agreed that night driving is one of the main factors contributing to road traffic accidents in Mogadishu. 40.5% of these strongly agreed that narrow roads are safer, while 47%, which is the majority, strongly agreed that poor construction and bad planning of roads are one of the main factors which contribute to road traffic accidents in Mogadishu. See Figure 3. 14. Based on the research results, the study showed that over the last year, approximately 70 % of people living in Mogadishu were involved in road traffic accidents in Mogadishu. 84% of those involved in road traffic collisions, take-off time from work. Around 41.1 % of the respondents were between one and two months off work. Nevertheless, 90 % of those who quit their jobs did not receive any government assistance or worked for companies. However 90% who take off their works did not any support from either government or their worked for companies. 93% of those who did not receive any pay from either the government or their employers will continue to lose payment until they return to their jobs. This shows how the situation of accidents is troubling and how the victims cannot get any support after the accident except from their families and friends, and this will increase the negative socio-economic impacts of road traffic accidents on human lives in Mogadishu. Once asking the respondents how the harm caused by the accidents affects the economic growth in Mogadishu, about 50% of those respondents said that road traffic accidents have very high effects as a result of Mogadishu's economic growth and that is the majority, which indicates that the accidents are very challenging for Mogadishu's economic growth. Although any associated road traffic accidents in Mogadishu have their own special effects and require both cost and time, the loss of valuable property, damaged vehicle repair costs, as well as medical costs have the highest economic impact due to road traffic accidents in Mogadishu. On the other hand, the cost of repairing vehicles and damage to property is limited to victims, while the government does not provide any support to those people who have suffered from road traffic accidents. However, 81 % of people living in Mogadishu have no legal expense insurance cover, which makes people very vulnerable to road traffic accidents, as road traffic accidents result in significant economic losses. Since the victims cannot seek any financial assistance from the government or the insurance industry to recover the damage caused by the accident, Based on the research findings to eliminate the problem of road traffic accidents in Mogadishu, Somalia, it is recommended to the government to improve the road conditions and maintain the roads in Mogadishu, to improve road designs such as road bouts and intersections, to improve vehicle designs, to get qualified and well trained drivers, to increase the number of traffic police to enforce

the traffic laws, and to strictly apply the traffic regulations while implementing all these above points can significantly reduce or eliminate the road traffic accidents in Mogadishu.

6: Conclusion

Road traffic accidents in several developing countries are increasingly becoming a threat to public health and national progress. Road accidents contributing to suffering by causing death, injury, disability, sorrow, loss of income and material damage. Based on the results of the research in Chapter 4(Result & Discussion), the results showed that:

- ✓ The level of traffic accidents in Mogadishu is very high, and these accidents result in human lives being lost and valuable socio-economic resources being destroyed.
- ✓ Multiple accidents are the most common type of accident that always occurs in Mogadishu, whereas heavy trucks are the most common cause of road accidents in Mogadishu.
- ✓ Teleex & Zoobe Junctions are the locations where most accidents happen in Mogadishu. While the economic impact of incidents in Mogadishu is extremely high.
- ✓ Lack of familiarity with traffic laws; disobedience to the traffic rules, lack of investment according to the traffic police department are the difficulties that the traffic department is facing when implementing the traffic safety programs.
- ✓ 70% of the respondents selected were involved in road traffic accidents in Mogadishu over the last year.
- ✓ As a result of traffic collisions in Mogadishu, 84% of these respondents took time off from their place of work in Mogadishu.
- ✓ 90% of these who were taking off time of work as a result of traffic accidents did not get did not receive any payment in the period of absence from the work
- ✓ 93% of these who were not receive the payment will continue their loss of payment in period of absence from the work
- ✓ 55% of those respondents who were involved in road accidents caused damage to their vehicles as a result of road accidents in Mogadishu.
- ✓ Yet 81% of Mogadishu residents don't have legal expense compensation cover to help them cope with accidents, leaving them very vulnerable to the impacts of the incidents.
- ✓ The majority of traffic accidents in Mogadishu are not related to the number of vehicles. The main culprit is

traffic. Accidents in Mogadishu are due to poor driving behavior.

- ✓ Lack of traffic management due to poorly trained traffic police
- ✓ Lack of road traffic signs
- ✓ Poorly maintained vehicles break down in the streets.
- ✓ Overloaded trucks overturn or break down in the street.

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