



**NEAR EAST UNIVERSITY  
INSTITUTE OF GRADUATE STUDIES  
DEPARTMENT OF CIVIL ENGINEERING**

**AWARENESS OF TRAFFIC SAFETY AND EVALUATION AMONG  
DRIVERS IN THE CITY OF MOGADISHU, SOMALIA**

**M.Sc. THESIS**

**ALI MUSSE HASSAN**

**Nicosia  
March, 2022**

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**MASTERTHESIS**

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## Approval

We certify that we have read the thesis submitted by **Ali Musse Hassan** titled “**Awareness of traffic safety and evaluation among drivers in the city Mogadishu, Somalia**” and that in our combined opinion it is fully adequate, in scope and quality, as a thesis for the degree of Master of Educational Sciences.

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## DECLARATION

I hereby declare all information in this document has been obtained and presented in accordance with academic rules and ethical conduct. I also declare that, as required by these rules and conduct, I have fully cited and referenced all material and results that are not original to this work.

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**ALI MUSSE HASSAN**



To my parents...

**ABSTRACT**

**Awareness of Traffic Safety and Evaluation among Drivers in the City of  
Mogadishu, Somalia  
Ali Musse Hassan**

**MA, Department of Civil and Environmental Engineering**

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Road traffic incidents are currently regarded as being one of the largest serious problems in the world that causes harmful, It has been identified as a major source of human and economic damage in both developing and developed nations. This research was conducted to find out traffic regulation knowledge and awareness of society among drivers in Mogadishu Somalia. To achieve the aims, the method of the questionnaire process was developed and designed among drivers in Mogadishu. The main results showed that a very high percentage of participants stated that tuk-tuks were one of the problems in road safety. Teenage driving, narrow driving, a lack of signals, poor construction, and poor planning all contribute to a reduction in traffic road safety. The common people involved in accidents in Mogadishu are mostly two groups, 18 – 25 and 26 -35. To eliminate the risk of road traffic accidents in Mogadishu, Somalia. This study recommended awareness of society and knowledge of regulations for road traffic signs. Through it, social media, radio, television, and so on. Finally, this research recommends that the government install traffic lights and control them fully.

**Keywords:** Road accident, Road safety, Awareness, Mogadishu.

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**LIST OF ABBREVIATIONS**

<b>RTAs</b>	Road Traffic Accident
<b>RTS</b>	Road Traffic Safety
<b>WHO</b>	World Health Organization
<b>RTD</b>	Road Traffic Deaths
<b>RPG</b>	Rapid Population Growth
<b>RSM</b>	Road Safety Management
<b>DB</b>	Driver Behavior
<b>RSM</b>	Road Safety Management
<b>AP</b>	Accident prevention
<b>AR</b>	Accident Reduction
<b>TRL</b>	Transport Research Laboratory
<b>GRS</b>	Global Road Safety
<b>UN</b>	United Nation

## CHAPTER I

### INTRODUCTION

#### 1. Introduction

It is well known that road transport is of great importance for the movement of any type of goods and people, which is the backbone of the economy's long-term growth. However, it's very important to maintain order because there are always tragic accidents on the roads. There have been increasing losses day by day. More than a million people have died, and millions more have been injured. Traffic and road accident consequences have social and economic effects on an individual, country, or family. This study looks at how road traffic safety threats have changed in Mogadishu, as well as how to reduce road accidents.

#### 1.1 Background of the study

Road traffic accidents are a major public concern all around the world, both in developed and developing countries (Yahia, 2014). After more than 3 decades of civil war, the Somali government has lost all development infrastructures. This has resulted in the destruction of road safety and an increase in road accidents in Mogadishu. In addition, people have experienced conflicts, drinking unsafe water, failed leadership, a non-reliable health system, and other public services. Traditionally, road traffic safety has largely relied on accident statistics, which is the most important data (Laureshyn,2010). This means that if there are more accidents, there will be fewer accidents on the road. We must first give a brief description of road accidents. Road traffic incidents are currently regarded as being one of the most serious problems that cause harm. According to the World Health Organization, every year the death toll is 1.2 million and injuries are between 20 and 50 million. This results from traffic accidents (Peden and the World Health Organization, 2004). In 2013, approximately 1.4 million people worldwide died, and this was the leading cause of injury-related disability-adjusted years of life (Borer,2020). An accident is described as an uncontrolled and unplanned incident in which an accident's actions and response are the item or individual that causes personal injury or property harm. A traffic

accident may occur, explained as the failure of the road-vehicle-driver device to conduct one or more operations. It is important to complete a trip without any injury or loss. Road accidents are primarily due to poor road network maintenance and a lack of effective and systematic regulation (Singh, 2019). Traffic accidents are one of the leading causes of death, injury, and economic burden in developed and developing countries. Therefore, the determination of suitable preventive measures to minimize the prevalence of road accidents in every country needs first consideration. It needs to keep the rules and regulations for traffic and also raise the awareness of society through television, radio, and social media. Road traffic deaths were recorded in 16% of underdeveloped countries with 1% of registered vehicles, but 74% of road traffic deaths occurred in middle-income countries. As a result, 90% of road fatalities occur in low and middle-income countries (Ayenachew, 2021). Rapid population growth, economic development, and a rise in the standard of living have contributed to an increase in the number of cars and injuries in traffic. Today, owing to accidents, injuries and deaths in traffic accidents have become an important public health and socio-economic issue in the world. The number of traffic accidents in any country depends on different variables, such as the number of people, the number of vehicles, the geometry of the road, the actions of the driver, and the characteristics of cars. Road protection is the product of several sectors of society's deliberate and systematic efforts, governments and non-governmental organizations alike, once it is understood by these sectors to be a major and valuable public good, as well as the creation of policies and services to help and encourage protect it. The ever-increasing and disturbing rate of road accidents is a serious matter of concern for us all. Despite many steps aimed at reducing accidents and improving road safety, issues have continued to increase. There has been a lot of money and time spent on cutting down on road deaths over the years. The seriousness of the issue is highly pronounced in developed countries (1999). Road traffic crashes are not just a crash in traffic issue of highway safety; they are a concern for public health. Over a million people are killed on roads every year in the world, and tens of millions more are injured. Road traffic accidents are one of the major causes of death in the world, accounting for nine deaths a day. By 2020, road traffic injuries are predicted to be the third leading cause of death in the world (Peden, 2004). Road safety issues need to be incorporated with greater importance into the road



maintenance initiative. The priority given to road safety engineering is the use of road safety audits, in particular. It is also important to encourage reliance on user fees to fund safety initiatives, as it will be the road users who benefit. Many of the issues found were not new, such as pedestrian safety, commercial drivers, and professional drivers. Their objectives, however, remain unaffected. Lessons learned in other countries, i.e., the neglect of the protection of pedestrians and the need for community engagement should be applied with the expectation that some of the costs of motorization and growth will be shared with Africa (Jacobs & Aeron, 2000). Every day, hundreds of lives are lost as a result of careless driving, excessive speeding, driving while under the influence of alcohol, or even using cell phones while driving or crossing the street. All this activity causes fatal and nonfatal injuries on highways. Road safety is important because it reduces the number of deaths and injuries. Road safety refers to the steps that must be enforced and accepted by everyone when using the highways. These safety regulations are methods for minimizing the risk of accidents occurring in the lane and causing accidents or casualties. A driver would have a greater opportunity to respond and prevent a crash when driving at lower speeds. Velocity also affects the gravity of collisions. The more kinetic energy there is in high-speed collisions, the more extreme the crash will be (African Development Bank, 2004).

## **1.2 Problem Statement**

It was the responsibility of the government of Somalia to regulate the management of traffic safety and the awareness of society. Unfortunately, the current transportation system does not keep safety and compliance on the roads because most drivers do not know the rules of the road and their signs, which also leads to an increase in deaths and car accidents in the capital city of Mogadishu. According to the U.S. Department of State, (2019) reported, roads are one of the backbones of the development of society around the world. In Somalia, the road conditions are dramatically different from those in the USA and others. Road safety and road regulations do not comply with U.S. or EU standards. Traffic lights and signs are a rare occurrence, and roads lack maintenance, which leads to poor conditions and the dangers of driving. In addition, there is no street lighting, so night driving can be hazardous. As well to accidents involving

pedestrians and animals on the road, vehicle accidents are frequent. Regulation of traffic is limited. The government should enforce all traffic laws and raise public awareness. In this regard, aims to find out and investigate the impact of society without considering the traffic rules and regulations as well as the awareness of drivers in the city of Mogadishu.

### **1.3 Research Aims and Objectives**

The main purpose of this study will be to raise public awareness and knowledge of traffic regulations to improve the quality of road safety and reduce accidents. The main aim is going to be achieved by following objectives;

- ❖ To identify the causes of traffic accidents in Mogadishu.
- ❖ To improve road safety and reduce road accidents through increased awareness in society.
- ❖ To evaluate the knowledge and awareness of traffic regulations among road users in Mogadishu,
- ❖ To assess awareness of drivers' behavior on the road systems in Mogadishu.

### **1.4 Research Questions**

- ❖ What is the association between traffic safety and accidents on the road?
- ❖ What is the association between traffic safety and infrastructure development?
- ❖ What is the association between traffic safety and a valid license?
- ❖ What is the association between traffic safety and public awareness?

### **1.5 Scope of the Study**

This research focuses on the contribution of road safety initiatives to the reduction of road accidents. It also seeks to determine the causes of road insecurity, destruction, and traffic injuries and establish a relationship between the rise in the number of vehicles and the rise in accidents in road traffic. Finally, this study will try to determine the level of public awareness of the community in Mogadishu.

### **1.6 Motivation of the Study**

This study motivates us to identify some of the factors that promote safe driving habits and to determine how drivers value their safety and their community. It also promotes road safety and awareness of the dangers of accidents.

### **1.7 Significance of the Study**

This study seeks to assess and analyze the extent of road traffic insecurity in Mogadishu. It is very valuable to give advice or ideas to reduce road insecurity and improve road safety to avoid damage to the community. This study also seeks to increase knowledge of road accidents, which is particularly important in reducing road hazards. The consequences of road traffic accidents could encourage the government to take appropriate action.

### **1.8 Outline of the Thesis**

Chapter one: Is the discussed introduction of the thesis, stating the problem statement and the objectives of the study.

Chapter two: Is the literature review, which is based on all research previous topics and previous work related to this investigation topic.

Chapter three: discussed the methodology of the study and procedure using the questionnaire method with SPSS

Chapter four: The Consist of discussion and explanation result of data.

Chapter five: Conclusion and recommendation

## CHAPTER II

### LITERATURE REVIEW

#### 2.1 Introduction

The main objective of this study is to raise public awareness and traffic regulation knowledge to improve the quality of road safety and reduce accidents. The goal is to gain a better understanding of the issue of road accidents in developing nations, such as Somalia. This section presents a literature review in this case, namely by reviewing relevant documents, books, articles, studies, and journals that have discussed road safety. This part was designed to look for existing knowledge about the subject to establish a research gap that this study needs to fill. Road traffic accidents claim the lives of the majority of people between the ages of 15 and 29, with more than 1.25 million people dying each year. According to a WHO assessment, some of the fundamental causes include a lack of training institutes, bad road conditions, and inadequate traffic management. Many studies have found that public awareness and education initiatives, as well as strict law enforcement measures, are effective in reducing traffic accidents (Abu-Abdo, 2016). According to the World Health Organization report about road traffic deaths, estimated to reach more than 1.3 million deaths, every 25 seconds one person is killed. This report represents 449 million populations (7% of the world's population) in only 28 countries. The high percentage of road deaths caused by road traffic accidents is significantly more than in developed countries. In 2016, Somalia recorded 25.4 out of 100,000 registered vehicles. Other east African countries such as Kenya and Ethiopia recorded 29.1 and 25.3, respectively, out of 100,000 registered vehicles (WHO, 2013). In the early 1960s, studies on road deaths began to emerge. This early research concentrated on the medical aspects of proper traffic injury evaluation and treatment, as medical personnel became increasingly concerned about this new cause of death. Gissane and Bull (1961), conducted a study that focused on the 1960s, while later research by Sevitt looked into the road deaths in Birmingham (1968). The 8000 victims in the United Kingdom per year are a source of concern (Borer,2020). Road traffic accidents are estimated to have accounted for 23% of all injury deaths globally in 2007. In developing

countries, RTAs are now ranked third, behind cardiac disease and clinical depression, and ahead of respiratory illnesses, TB, conflict, and the human immunodeficiency virus and acquired immunodeficiency syndrome (HIV/AIDS). In developing countries, RTAs are becoming a primary cause of death and injury (Manyara, 2016).

## **2.2 Road Safety**

To find out information about road safety, it is important to define and understand safety first, according to its quality or state of being protected from "danger, injury, harm, loss, injuries." We can also define it as when you arrive at a location where you are protected from danger. Road safety can also be defined as the steps and measures taken to minimize the risk of traffic-related accidents and deaths. The feeling that the road system is safe and the reliability that the system does not seriously injure or destroy the user is not related to the number of accidents and fatalities. This sense of well-being and system efficiency are important factors in promoting more environmentally friendly modes of transportation in cities, such as walking and cycling, which are linked to more livable cities. According to WHO (2015), road traffic deaths are the world's eighth leading cause of death, and they are the highest cause of death in young people aged 15 to 29. About 1.25 million people have died, with 50 more on the way. Every year, millions of people are injured in road collisions, the majority of whom live in low-income countries. The United Nations has released the Sustainability Development Agenda 2030, an action plan outlining 17 sustainable development goals, one of which is road safety and development (Bezerra, 2019). Road traffic safety is strategies and interventions to reduce the risk of killing or seriously injuring someone using the road network. In the world today, where the number of vehicles is growing day by day. The primary requirements for road traffic safety are the protection of society and the safety of all road users. Poverty has driven people to live and settle in places that can never be considered safe. The number of injuries has risen along with the human population. All of this poses a significant hazard to road safety and to individuals who walk and drive on the road. Human life is not assured (Ayub, 2016).

### **2.3 Road Accident**

An accident is most frequently an unplanned event that results in personal injury or damage to property. The accident occurred largely due to the negligence of the driver of the car. Most accidents are caused by the failure of people, equipment, supplies, or surroundings to act or respond as anticipated. An accident involving at least one motor vehicle occurring on a road open to public transport and in which at least one person is injured or killed is referred to as a road accident (Balakrishnan, 2012). A traffic accident is described as an incident that involves at least one vehicle on a public road and results in the injury or death of one or more people. In recent years, there has been an increasing focus on problems related to driver inattention and the importance of driver distraction in road safety. New in-vehicle applications and developments are largely to blame for the increased interest, the popularity of which is increasing, but their emergence is also accompanied by a growing fear of their potential for diversion and related road safety implications. Despite the recognized and growing importance of drivers, however, road safety distraction, the extent of the issue of driver distraction is not yet truly known. According to Dragutinovic and Twisk (2005), the Public Safety Administration for Highway Traffic (NHTSA) reports that driver distraction and inattention cause 20–30% of all road accidents in various ways.

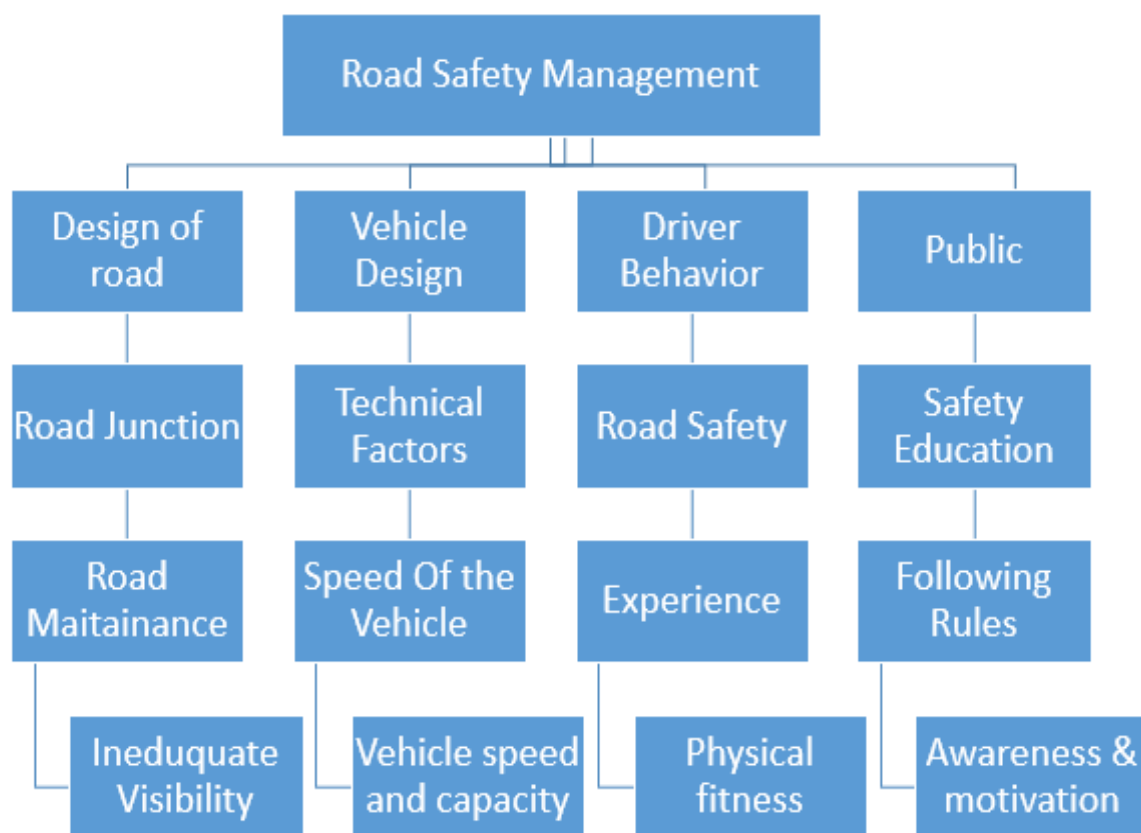
### **2.4 Development of the Roads**

As we know, roads are one of the backbones of the development of society. In Somalia, the road conditions are dramatically different from those in the USA and other developed countries. Road safety and road regulations do not comply with U.S. or EU standards. Traffic lights and signs are a rare occurrence, and roads lack maintenance, which leads to poor conditions and the dangers of driving. In addition, there is no street lighting, so night driving can be hazardous. As well to accidents involving pedestrians and animals on the road, vehicle accidents are frequent. Regulation of traffic is limited by (the U.S. Department of State, 2019). Road safety management plays an important role not only in reducing traffic accidents but also in reducing the other negative effects of traffic. To minimize road accidents, Road Safety Management has

proposed several steps that will be introduced in the various classifications of the road network see Figure 1.

**Figure 1**

*Road Safety Management*



### 2.4.1 Design of Road

Build a road as the connecting point between two locations that have been constructed. When it comes to cars, pavement is the primary form of road design. Many kinds of roads exist, like city, federal, and many others besides. A design in which one lane is for traffic going in both directions in the neighborhood means any roadway with three or more lanes of traffic heading

in the same direction is known as a "highway." The design of highways and expressways demands large quantities of construction money.

Road design is classified into three types.

- a) Road junctions
- b) Road maintenance
- c) Inadequate visibility.

The design of road safety is always based on the location of the road, the hospital, the traffic, and the schools, as well as the road dividers and junctions.

#### **2.4.2 Vehicle Design and Safety**

The most dangerous factor in an accident is the vehicle's speed. Any motor vehicle should be engineered with technical considerations, vehicle speed, vehicle size, and capability in mind, as vehicle design is one of the leading causes of accidents. Motor vehicles should be constructed in such a way that they can be operated by motor vehicles long before an accident happens to make them accident-free. It has been proposed to all state governments that

- a) Vehicle width, height, and length.
- b) Wheel and tire size, nature, and condition.
- c) Brakes.
- d) Lamps and reflectors.
- e) Warning devices.
- f) Vehicle inspection.
- g) Regulating the information displayed on vehicles and how such information shall be displayed.

On protection, first, those designed to minimize the risk of incidents; second, those that are targeted at reducing the effects of incidents. The size, mass, and speed of vehicles have been, for a long time, major concerns for manufacturing and safety research. When an accident happens, the two most important factors that assess the magnitude and probability of the accident are vehicle mass and speed. The risk of fatality depends heavily on the ratio of the vehicle's weight. One car is half the weight of the other, and the lighter car's driver faces a twelvefold chance of death. Natural incidents include rapid decreases in accidents. Devices for



occupancy security are designed to reduce the likelihood and severity of the effect, as well as to prevent ejection. both the seat belt and the shoulder harness, and also the fundamental harness, it has been demonstrated that the safety belt is connected to a large decrease in the risk of casualties. Additionally, it has been shown that airbags are most effective when used when paired with seat belts (Milos & Komackova, 2016). Cars and other private vehicles in modern society are commonly used by many people. A critical issue that every individual has to face every day is the rising number of road traffic accidents. Consequently, the cost and associated hazards are often recognized as serious concerns. Sadly, this transportation safety issue continues to deteriorate due to population growth and the rising number of vehicles. About urban environments Every year, approximately 1.2 million people die from road traffic accidents around the world, according to a study by the World Health Organization, which indicates that one person is killed every 25 seconds. If the current trend persists, it is estimated that road accidents will rise by 65% and become the fifth major cause of death by 2030. To minimize the incidence of automobile accidents and their consequences, car safety is very important. Highway design encompasses a broader range of vehicle safety, namely, road traffic safety. One of the first automotive safety features was the use of seat belts and padded dashboards (Peng, 2018).

### **2.4.3 Driver Behavior**

Driver behavior and driver performance are two of the main challenges to improving road safety. Research has found that increased use of seat belts and regulated speed while driving can give significant security to drivers. Driver education has little effect on the protection provided on the highways. Road safety has improved. It is even due to the recognition and increased enforcement of drunk driving regulations. Analysts note "The basic driving skills are developed very easily and quickly for vehicles, and the complex driving skills that are developed only after many years of driving may play a role in reducing crash risk." Factors impacting road safety must be examined concerning drivers, their driving habits, and drivers' abilities. There is a connection, according to (Komackova & Poliak, 2016). Between driver behavior and road safety in comparing on, to both violent and driving behavior. Speedy conduct is highly dependent on the attitude of drivers towards road safety, and both have a huge effect on the number of

accidents. On the contrary, young drivers' mindsets have no overt or indirect impact on the presence of incidents. This is because there is an inverse correlation between protection and danger. If one steps up, the other walks down. You need to reduce risk to improve safety. With the support of public transport, fewer vehicles will be driving on the road, and so fewer passengers will be transported by public transport. To reduce road accidents, it is possible to increase the level of professional driving amongst the drivers. Traffic laws are considered in a lot of research projects when researchers are researching drivers' behavior. The relationship between attitudes toward road traffic regulations and the effect on traffic accidents was investigated, and it was discovered that safe attitudes toward traffic regulations were correlated with lower traffic crash participation. Attitudes affect behavior in almost any social activity, including driving. To quantify and characterize driving behavior, measures and evaluations of apparent driver behavior have been developed. The Driver Anger Scale (DAS), the Driver Skills Inventory (DSI), and the Manchester Driver Behavior Questionnaire (DBQ) are three key indicators of driver behaviors and driving attitudes that have been extensively reported in academic journal literature by (Mohamed & Stephens, 2017).

#### **2.4.4 Public**

The general public is unfamiliar with basic first aid. There is no standardized toll-free number for calling for emergency medical help. Injured patients do not have access to appropriate and secure transportation, such as a road ambulance or an air ambulance. In the vast majority of collisions, the driver has no procedure that allows him to seek medical assistance for his emergency medical needs. Children, students, college youth, and the general public should be informed about road safety so that we know and adopt the security aspects that are beneficial to the country's growth. People should be told about the Motor Vehicles Act's laws and regulations so that they can obey them. The key causes of the crash are motor vehicles traveling at high speeds, driving on the wrong side of the lane, the driver being unaware of a road junction, the driver being asleep due to the long drive, not wearing a seat belt, and the lack of a road junction sign board (Verma, 2017). Road Safety Education (RSE) is used as a way to improve the safety of young road users in a variety of ways, from pedestrian and cycling safety for small children to healthy driving for teenagers. The requirement for education is often based on the belief that

young road users lack the ability, experience, or both necessary to work securely in traffic environments, and also that correcting these deficiencies would lower the risk of someone being injured or killed on or near roads. As a result, OECD countries have made road safety education a top priority for college children and adolescents. RSE is another method to decrease road deaths and improve the safety of society amongst young road users. In general, determining RSE results that are appropriate measures of a program's success is difficult, and the implementation of systematic assessments is often hampered by practicality and feasibility issues. Since the issues associated with program assessment are likely to exist for some time, we can never know with certainty how successful RSE programs are. Although driver training and programs that result in early licensure have been problematic, the majorities of RSE programs are likely to have a beneficial impact and, at the very least, are not harmful. At the moment, projects that target facets of resilience and risk-taking to indirectly resolve road safety are showing some promise. Future RSE program creation should be evidence-based and based on proven best practice guidelines for both education and behavior change (Wundersitz, 2011).

## **2.5 Historical and Idea of Road Safety**

Significant progress has been made in reducing road traffic fatalities in many motorized countries over the past decades, especially in the old developed countries (Western Europe, the United States, Japan, Australia, and New Zealand) during the 2000s, but also in other countries that have gone through a rapid motorization process since the 1990s (e.g., Eastern European countries). The implementation of countermeasures related to the activities of utilities, vehicles, and road users has typically resulted in improvements in road safety. Statistical associations between reductions in accidents and measures in road safety engineering, improved vehicle crash ability, mandatory seat belt wearing, drink-driving programs, and speed control have been found in more rigorous studies conducted in selected countries. According to global estimates, road incidents are expected to rank fifth among the world's leading causes of death by 2030. According to recent estimates, more than 1.2 million people die each year. Twenty to fifty million people are injured in traffic accidents, and another 20 to 50 million are killed. Despite a significant increase in the degree of motorization over the century, the best-performing nations'

fatality rates fell by more than half between 1970 and 2005. About the potential contribution of road safety research to that progress. Road safety programs focused on the findings of study projects have made significant contributions to reducing the number of road accident deaths around the world. According to the study, the construction of median guard rails on undivided roads, the increased use of child restraints in vehicles, neck injury prevention, and side-impact safety in cars were among the accident-reducing factors that were substantially reduced. The changing climate of the road transportation system has created new challenges for road safety research. Since the benefits of conventional road safety interventions have worn off, it can be argued, at least in developed countries, that new approaches are needed to reduce the number of road accidents and injuries even more (Shalom &Hakkert, 2014). Improvement assessment in the third world is important owing to the lack of data on the advantages of protection measures for highways. Improvements are recommended to be incorporated on a pilot basis and reviewed before being adopted nationally. The Overseas Unit gives priority to studying road safety countermeasures, but there are only a few reported findings due to the long-term nature of many of the studies and the limited resources available. Even though human error is possibly the key causal factor in most road accidents, there is little question that changes in engineering and planning can affect the behavior of road users in such a way that mistakes are less likely to occur or the environment can be affected when they occur. A higher percentage of forgiveness. Thus, the focus on innovation and engineering has increased. Countermeasure preparation over the past two decades, both in Europe and North America as well. Engineering and preparation by two will enhance road safety mechanisms that are distinct:

- a) Accident Prevention as a consequence of Good Practices for the Design and Planning of New and Linked Road Schemes Production and Innovation
- b) As a result of corrective actions taken in response to issues discovered on the current road. Downing and Baguley, (1991) established a network.

Accident Prevention: Prevention of accidents applies to the plans, preparations, and measures taken to avoid or stop accidents. Also, as accidents are caused by the existence of hazards, it is relatively easy. Crashes are preventable. For accident prevention, simple strategies have been developed through practice. The elimination of hazards is needed for an effective safety

program. Prevention of injuries involves all steps taken in an attempt to save lives, minimize the degree of injury, prevent property harm, reduce the cost of care and compensation, and prevent the loss of productive time and morale.

Accident prevention and its occupational significance Crashes can mutilate and injure. Thousands of incidents occur all over the world every day, impacting all aspects of the economy. In small and medium-sized companies, where health and safety may not be highly regulated, the issue may be particularly acute (U.S. Department of State, 2019). In this analysis, the basis of the accident prevention factors established is to determine the information and mechanisms used by the various states to assign different types of changes to accident prevention factors. Another source used for the development of these factors was also a review of the present literature on this topic. Reports were gathered and analyzed to find out how many injuries were reduced by different types of safety improvements.

## **2.6 Empirical Literature review**

### **2.6.1 Empirical Literature review worldwide**

Road casualties and incidents are a global concern of huge proportions. Road transport is the most complicated method of transport and the most dangerous one as well. In recent years, the World Bank, World Health Organization (WHO), Transport Research Laboratory (TRL), and others have highlighted several significant and relevant reports on traffic injuries and fatalities. The rising significance of road crashes, especially in developing and transitional countries, is a cause of death. Road accidents are one of the leading causes of death, injury, and disability both in developed and developing countries around the world. With a broad estimate, 2 people are killed every minute and 95 people are seriously injured or permanently disabled in worldwide traffic collisions. Deaths and injuries associated with road collisions contribute not only to significant economic costs but also to severe physical and emotional distress. Traffic incidents have a much greater impact on developing countries than they do on developed countries. According to WHO statistics, road accidents kill 75% of people in developing countries, even though they own just 32% of the world's automobiles. While the annual fatality rate per 10,000 vehicles in low and middle-income areas ranges between 20 and 200, Traffic crashes are

expected to cost the global economy \$518 billion per year. The developing countries' share is \$100 billion, or 1% to 3% of their national gross domestic product. About 750,000 to 880,000 people died in 1999 as a result of road traffic accidents, while the World Bank reported a total of 1 million deaths due to road traffic accidents in its 1998 report. This shows the worldwide magnitude of the problem. According to the WHO, almost 16,000 people die every day in all types of incidents around the world. Injuries account for 12% of the global disease burden and are the third leading cause of overall mortality, and the leading cause of overall mortality in children and adolescents aged 1 to 40. According to WHO, road traffic accidents account for around a quarter of all accident deaths. According to a report released on World Health Day 2004, the number of people killed in road traffic accidents was nearly 1.2 million, while the number of people injured was as high as 50 million (WHO, 2004). Road traffic accidents are the leading cause of death from injuries in the world, according to the WHO (20.3 percent of all deaths from injuries). For adult men aged 15 to 44 years, road traffic accidents are second only to HIV/AIDS as the leading cause of illness and premature death (Mittal, 2008). The 2013 Global Road Safety Status Study includes data on road safety from 182 nations, which account for nearly all of the world's population. According to the report, the global number of road traffic incidents remains unacceptably high at 1.24 million per year. Just 28 countries, accounting for 7% of the global population, have strict road safety laws in place for five major risk factors: drunk driving, speeding, and failure to use motorcycle helmets, seat belts, and child restraints. The United Nations General Assembly declared the 2011–2020 Action for Road Safety, (Global Status Report on Road Safety, 2013). The holistic approach to road safety needs several industries to be involved, such as health, transport, and the police. The development and implementation of a multi-sectoral road traffic injury prevention strategy require a concerted approach to the issue, with adequate funding for planned activities to be completed within a defined timeframe. For example, to describe road traffic accidents, various periods between accident and death are used, and the concept of a serious non-fatal injury often varies. Just 22% of countries had information on the severity of their road traffic injury epidemic, the cost to their health or their national economies, and the data necessary to effectively track and evaluate interventions for the leading causes of death in 2004 and 2030. This statement indicates the rate

of the increasing security risks on the roads day by day. Road conditions are very hazardous. Although speeding distracted driving and drunk driving cause the majority of injuries, poor road quality, and conditions play a significant role in many others. In other words, while poor road conditions are unlikely to be the sole cause of an accident, they are likely to exacerbate the situation. (Global Status Report on Road Safety,2004).

### **2.6.2 Empirical Literature review Africa**

A big global concern is road traffic accidents. In developing countries, especially Sub-Saharan Africa, which has one of the world's worst road death rates, the problem is more acute (Ipingbemi&Aiworo,2013). In comparison to Western Europe and North America, developing countries still have to deal with the problem of road safety. As is the case in developing countries, the rise in motorization is also linked to an increase in road traffic accidents. The rapid growth of motor vehicle uses in developing countries has resulted in a significant increase in road traffic-related deaths and injuries. According to the World Health Organization, more than one million people died in road traffic collisions in low- and middle-income countries in 2000; this number is expected to nearly double (WHO, 2020). Children are the most vulnerable group, particularly those aged 5 to 29, 96 percent of those killed live in low- and middle-income countries. In addition to the human toll, road traffic accidents stifle growth and development in low- and middle-income countries by draining at least 1% of their gross domestic product, or \$65 billion annually. Injuries in most developing countries, including sub-Saharan Africa, are widespread and on the rise. Road traffic collisions, crashes, burns, attacks, bites, stings, and other animal-related incidents, poisonings, drownings, near-drownings, and suicide are responsible for a significant proportion of the injuries. In the late 1980s, injuries were responsible for about 5% of total mortality worldwide, and the cumulative global annual cost was estimated to be around \$500 billion. The burden and pattern of injuries are poorly understood and not well studied in Africa and other developing areas. The rise in incidence is due, in part, to the rapid growth of motorized transport and the expansion of industrial development without sufficient safety precautions. This is a study of data in developing countries on different forms of injuries, with an emphasis on sub-Saharan Africa (African Medical and Research Foundation, 2000).

**Table 1***Leading Rate of Death*

TOTAL 2004			TOTAL 2030		
Rank	Leading causes	%	Rank	Leading causes	%
1	Ischaemic heart disease	12.2	1	Ischaemic heart disease	12.2
2	Cerebrovascular disease	9.7	2	Cerebrovascular disease	9.7
3	Lower respiratory infections	7.0	3	Chronic obstructive pulmonary	7.0
4	Chronic obstructive pulmonary	5.1	4	Lower respiratory infections	5.1
5	Diarrhoeal disease	3.6	5	<b>Road traffic injuries</b>	<b>3.6</b>
6	HIV/AIDS	3.5	6	Trachea, bronchus, lung cancers	3.5
7	Tuberculosis	2.5			
8	Trachea, bronchus, lung cancers	2.3			
9	<b>Road traffic injuries</b>	<b>2.2</b>			

**2.7 Factor Affecting the Road Safety**

Many variables affect the safety of highways. The most important variables are driver actions, construction behavior, the state of the automobile, and the state of the infrastructure. Based on comprehensive research, Evans says that all variables are important, but due to the successive construction of highways, the most important factor is driver behavior today. Evans analyzes the correlation between vehicle construction and infrastructure quality. Infrastructure quality enhancement is widely understood to deliver substantial benefits in terms of risk reduction. If the behavior of drivers is poor, they will increase their influence in society. Factors that increase driver behavior include drug use and over-speeding without carelessness (Milos & Poliak, 2016).



### 2.7.1 Change in the Quality of Infrastructure

The conditions for enhancing road safety are part of the transportation engineering and road network operating characteristics. Transportation engineering safety programs have been classified in terms of road safety projects, road maintenance, and management. Separate transportation (according to vehicle direction and type); improved design and management of crossroads (turning left, canalization, roundabouts at designated locations); black spot-checking; and improved signaling were discovered to provide the best benefits in terms of safety advantages and investment costs in a global road engineering study. The greatest safety concerns in winter are remaining road friction and good road maintenance, especially ice and snow control. A road safety indicator can be described as the impact of road safety networks. Network safety performance is based on a quantitative framework for assessing road networks as well as qualitative dimensions of the proposal on a regional basis. Road network safety performance indicators aim to determine whether the correct road is in the correct location. It's based on the length of the real road category for each road category.

The number of deaths is determined by danger exposure, which is determined by the distance traveled by motorized vehicles on the network, and risk, which is determined by risk, which is determined by the distance traveled on the network. In terms of the rate of death per unit of exposure:  $\text{Risk} = \text{frequency} * \text{severity}$

We get equality by combining the two equations:

$\text{Number of killed} = \text{risk exposure} * \text{accident} / \text{exposure} * \text{killed} / \text{accident}.$

This equation gives a way of understanding the intervention road safety domains, i.e., exposure control through mobility, accident frequency control through prevention (primary), protection) and monitoring of the seriousness of the accident by safety (secondary safety) and recovery (tertiary safety) (Delorme & Lassarre, 2014).

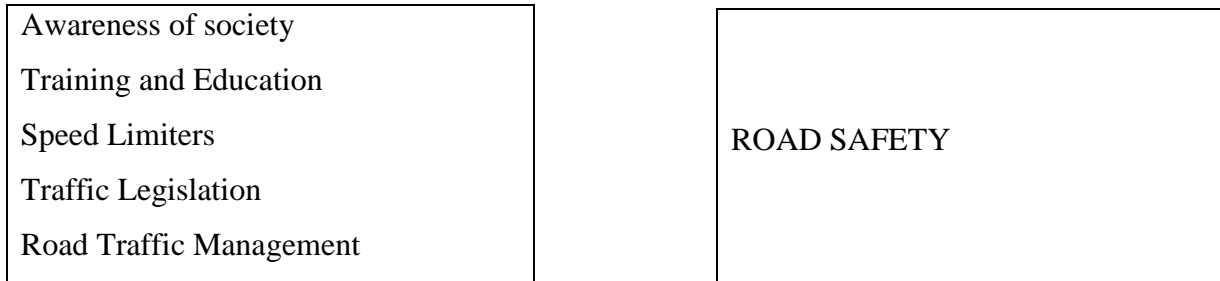
## 2.8 Conceptual Framework

Road safety measures, especially filling traffic accidents, are dependent on two factors. One is a dependent variable and the other is independent. Road safety is dependent. This shows road

traffic safety is the only one that needs many issues to be understood. As you can see in the conceptual framework chart.

**Figure 2**

*Conceptual framework*



## CHAPTER III

### METHODOLOGY

#### 3.1 Introduction

In this chapter, we talk about research design, population sampling, data collection, and data analysis, among other things.

#### 3.2 Definition of Methodology

According to Polit and Hungler (2004), the term "methodology" refers to the methods for gathering, organizing, and analyzing data. The essence of the study issue influences methodology choices. In science, the methodology can be described as the theory of making sound scientific decisions. Figure 3.1 shows the step-by-step.

**Figure 3.**

*Methodology Chart*



### 3.3 Study Area

This study was conducted in Somalia, particularly in Mogadishu, which is located in the country's center. Mogadishu is the 5<sup>th</sup> largest city in the East African region, currently. There is no reliable data, but the former Mayor of Mogadishu is quoted as saying more than 3.5 million people (Makina, 2011). According to UN Habitat (2017), it estimates the population of Mogadishu is smaller than what Moyer said. Mogadishu has a road network that links it to the majority of Somalia's southern regions. Owing to a lack of maintenance, the main roads are in bad condition. The following is the current main road network in Mogadishu:

MOGADISHU – Afgooye – Wenleweyn – Burhakaba – Baidoa 280 Km

MOGADISHU – Afgooye – Shalambod – Merka – Bulomarer – Jilib 370 KM

MOGADISHU – Balcad – Jowhar – Burweyn – Beledweyn 335 Km

MOGADISHU – Eelm'an – Warshiekh – Cadale 180 Km

However, Mogadishu has one of the highest death rates in the country, not only because of civil wars but also because of car accidents, road crashes, and a lack of public awareness of road safety.

### 3.4 Research Design

The specification of methods and processes for obtaining the information needed is known as a "research design." It is the project's overall operating pattern or structure that specifies what information is to be gathered from which sources and by which methods. Research design is a technique that identifies the basic steps required to address research questions, test theories, and achieve the research goal of assisting in the selection of decision alternatives to solve a management challenge or capitalize on a business opportunity. It helps to stay on track with both the calculations and the suggestions. An effective study design reduces data bias and increases confidence in the quality of collected data. In experimental testing, a design that generates the smallest margin of error is usually considered the optimal outcome (Inaam, 2016).

### 3.5 Study Population and Sample Size

The population is all of the people who live in a specific nation, region, or location. Researchers want to generalize the findings of a study derived from a sample to the population of a group of possible participants, items, or events. The total population of Mogadishu is estimated nowadays at more than 3 million people. The target participants in the study include traffic drivers, pedestrians, road accident detectors, as well as business owners, and traffic experts in Mogadishu (Cochran, 1963). Gives you one of the easiest formulas to calculate sample sizes. This formula was used to find the sample size with the respective target population and possible errors. See equation 3.1.

The formula is  $n = \frac{Z^2(pq)}{e^2}$  3.1

N = was the sample size

Z = was critical value of desired confidential level = 1.96

P = was the proportion that is present population = 0.5

q = 1-p = 0.5

E = possible errors = 5%

Calculate the sample sizes as mathematics:

$$n = \frac{1.96^2(0.5 \times 0.5)}{0.05^2} = 384$$

384 were online and 126 were face-to-face. A total of 500 respondent informants are planning to be asked questions through a questionnaire online and face-to-face (Glenn & Israel, 1992).

### 3.6 Method of Data Collection

#### 3.6.1 Questionnaire

A questionnaire is a research tool that consists of a series of questions or other forms of prompts designed to gather data from a respondent. A standard research questionnaire contains a combination of closed-ended and open-ended questions. In this study, the researcher was interested in finding out the extent of the phenomena being studied, and questions about how the data collection method was used. This questionnaire consists of four parts relating to the idea of this topic. Part one is demographic information, part two is road safety and evaluation

of drivers in Mogadishu. Part three is the main causes of road traffic accidents, and the last one is the main causes of increasing road traffic safety.

### **3.7 Method of Data Analysis**

A total of 500 questionnaires were distributed to some experts on this topic. Questionnaires were given to respondents and then feedback was collected data, which was analyzed in the SSPS program to show the magnitude of the problem. The Statistical Package for Social Science (SPSS) software version 16.0 was also used to analyze quantitative data. And the following analysis method was used:

- ❖ Descriptive statics
- ❖ Cronbach alpha
- ❖ Pearson correlation
- ❖ Regression

## CHAPTER IV

### RESULTS AND DISCUSSION

#### 4.1 Introduction

#### 4.2 Reliability Analysis

Reliable testing was performed using SPSS to assess the reliability of the query results. Each Cronbach alpha reliability measure was determined, and the results were rated from the highest to the lowest. On average, these results are obtained at a rate of 0.869. If you find Cronbach's alpha greater than 0.7, your study is not reliable, and you need to remove some variables to increase Cronbach's alpha. Table 4.1 identifies the number of items consisting of my question and their Cronbach's alpha.

**Table 2**

#### *Reliability Tests*

	Cronbach's alpha	No of items
Personal information related to traffic	0.87	15
Main causes of traffic accident	0.90	13
The main causes of increasing road traffic safety	0.839	6
Total	0.869	34

#### 4.2 Data Presentation

My questionnaire design consists of four sections, and each section was different from the other sections. In this section, I will try to clarify each variable I received from the idea of the respondent.

#### 4.3 Gender Respondent

This section identified the number of respondents by gender. Gender was the first variable that the respondent was asked to clarify as either female or male. Of the 500 respondents, 416 were

males, compared to 84 females. For cultural reasons, the number of participants in this study is mostly males compared to females. This does not mean that there are more men in Mogadishu, but in general, in Somalia, there are very few educated girls. Recently, however, the number of students has increased. So, in the past, when compared to men, it was difficult to get a chance to ask my questionnaire online. Table 2 and Figure 5 give you more details about the gender groups involved in this scientific research.

#### 4.4 Age of Respondent

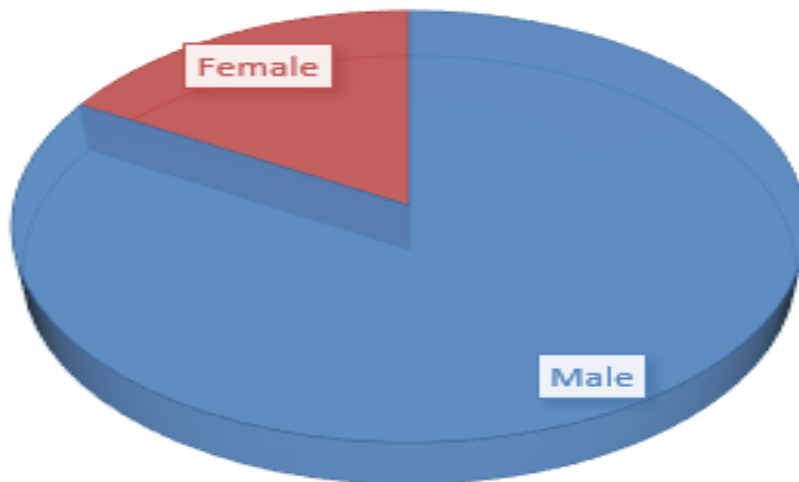
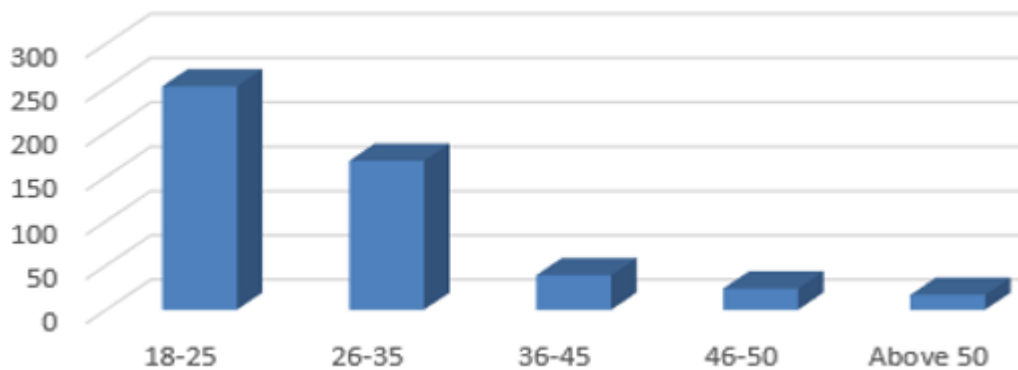
This section identified the number of respondents' ages. Age was the second variable that the respondent was asked to clarify for themselves. The age of the respondents in this research was divided into five groups. Of the 500 respondents, the participants in this study are mostly aged 18–35 years. Because more than 70% of Somalia's population is under the age of 40. That is why the largest participants in research in Somalia, more than 85%, are under 40 years old. Table 2 and Figure 6 give you more details about the group of ages involved in this scientific research.

**Table 3**

*Gender & Age Data Analysis*

	Frequency	Percentage %	Mean	Std. Deviation
<b>Gender</b>				
Male	416	83.2	1.2	0.407
Female	84	16.8		
Total	500	100		
<b>Age</b>				
18-25	252	50.4	1.55	0.766
26-35	168	33.6		
36-45	39	7.8		
46-50	24	4.8		
Above 50	17	3.4		
Total	500	100		



**Figure 4***Gender Information***Figure 5.***Age Information*

#### **4.5 Current level of Education of the Respondents**

This section identified the number of respondents' background education. Education was another variable that the respondent was asked to determine their background education. Background education respondents to this research were divided into five groups. Out of the 500 respondents, the participants in this study mostly had bachelor's and master's degrees. Since my research was an online and face-to-face interview, all respondents were asked the same questions. I decided to simplify my research and I used my mother language to understand as

much as possible. Somalia is a developing country, and people understand and participate in scientific studies. Table 3 and Figure 7 give you more details about the background of education involved in this scientific research.

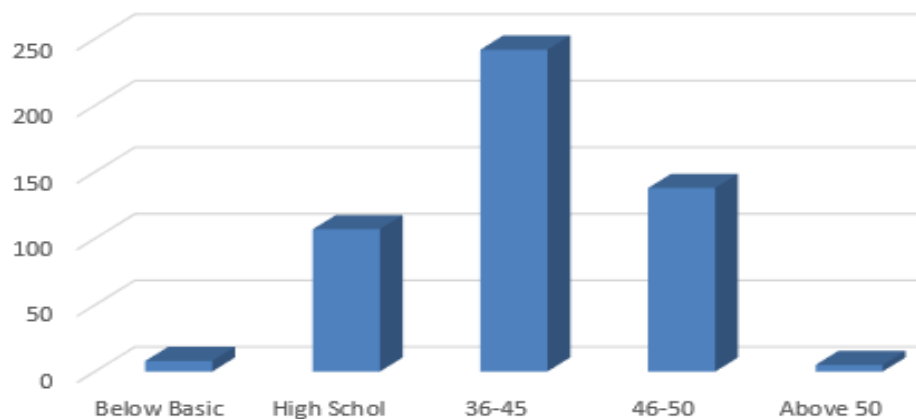
#### **4.6 Employment of the respondents**

This section identified the number of respondents' employment. The profession was another variable that the respondent was asked to identify their occupation. The respondents of this research were divided into two groups. employed and unemployed respondents. Out of the 500 respondents, the participants in this study look like equals. Somalia is still considered one of the world's most unemployed countries, but in recent years the situation seems to be improving. Youth unemployment has a major impact. Taking advantage of their needs is used as a means of destabilizing the country and destroying it. Youth employment is an important factor in the stability and prosperity of our country. Table 3 and Figure 8 give you more details about the employment group involved in this scientific research.

**Table 4**

*Education and Employed Data Analysis*

	Frequency	Percentage %	Mean	Std. Deviation
<b>Education</b>			4.29	0.622
Below basic	8	1.6		
High School	107	21.4		
Bachelor	242	48.4		
Master	138	27.6		
PHD	5	1		
Total	500	100		
<b>Employment</b>			1.55	0.498
Employed	218	43.6		
Unemployed	282	56.4		
Total	500	100		

**Figure 6.***Education Information***Figure 7.***Employment Information***4.7 Residence of the Respondent**

This section identified the number of respondents' residences in Mogadishu. The residence was another variable that the respondent was asked to identify their residency in Mogadishu or outside of Mogadishu. The residence respondents in this research were divided into two groups. Out of the 500 respondents, the participants in this study mostly live inside Mogadishu. As Mogadishu was the target of this study, it was assumed that most of the participants would be inside Mogadishu city. There are also people living outside of Mogadishu city. They come to

town for work in the morning and the afternoon. They use a private cars and public transportation. It was important for us to get their information as they understand a lot about this topic. That's why I decided to add this question to my questionnaire form. Table 4 and Figure 9 give you more details about the groups involved in this scientific research.

#### **4.8 Type of the Owner of the Vehicle of the Respondent**

This section identified the number of respondents' types of vehicles owned by the owner of the vehicle in Mogadishu. The type of the vehicle was another variable that the respondents were asked to identify their properties. The types of vehicle respondents in this research were divided into seven groups and also added option zero. Out of the 500 respondents, the participants in this study mostly don't have any type of vehicle, because most students don't have the income to buy one. In general, the most used vehicle in Mogadishu is the tuk-tuk. Because some young people have been given jobs due to a lack of employment, the tuk-tuk is considered one of the main causes of accidents in Mogadishu. Most drivers of tuk-tuks are young. They don't have the license, experience, education, and more needed to survive themselves and society. Table 4 and Figure 10 give you more details about the group of vehicle owners involved in this scientific research.

#### **4.9 Valid license of the Respondent**

This section identified the number of respondents who have a valid driver's license. The valid driver license was another variable that the respondent was asked to identify with their valid license. Valid driver's license respondents of this research were divided into two options, namely, drive with a license and drive without a license. Out of the 500 respondents, option drivers with licenses were 113 respondents, and those without licenses were 387 respondents. According to this study, most of the participants in this study do not have a driver's license. The same goes for drivers in Mogadishu. Every driver tries to learn for a few days after driving without an exam test. Evaluation and monitoring are the responsibility of the government of Somalia to manage the licensing process in the whole country. The consequences of this lack of

assessment are that many Somalis die as a result of accidents. Table 4 and Figure 11 give you more details about the valid driver's license in Mogadishu involved in this scientific research

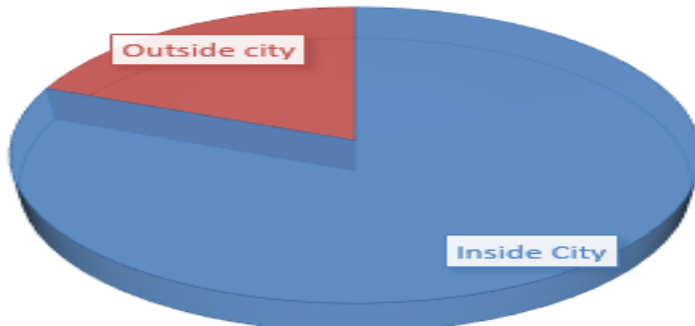
**Table 5**

*Residence, Type of Vehicle & Valid license Data Analysis*

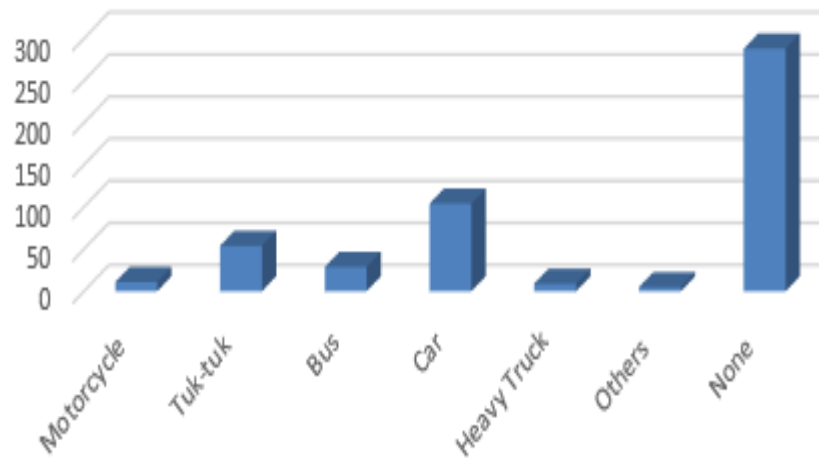
	Frequency	Percentage %	Mean	Std. Deviation
<b>Residence</b>			1.23	0.414
Inside city	405	81		
Outside city	95	19		
Total	500	100		
<b>Type of vehicle</b>			5.66	1.874
Motorcycle	11	2.2		
Tuk-tuk	54	10.8		
Bus	29	5.8	1.55	0.498
Car	104	20.8		
Heavy truck	9	1.8		
Others	5	1		
None	288	57.6		
Total	500	100		
<b>Valid license</b>			0.32	0.466
Driver have	113	22.6		
Don't have	387	77.4		
Total	500	100		

**Figure 8.**

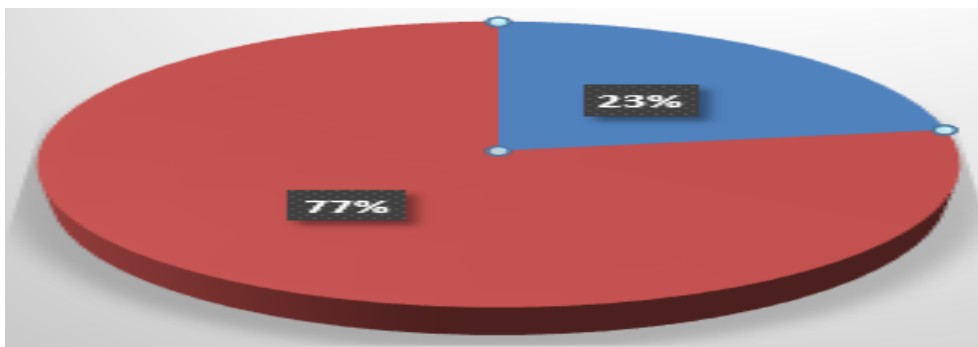
*Residence Information*

**Figure 9.**

*Owner Vehicle Information*

**Figure 10.**

*Valid License*



#### 4.10 Rate of a Traffic Accidents in Mogadishu

This section identified the number of respondents to a level accident in Mogadishu. Another variable for which respondents were asked to identify their idea based on experience was the rate of traffic accidents. Traffic accident respondents in this research were divided into five groups. Out of the 500 respondents, most participants responded that accidents in Mogadishu were normal. The number of accidents in Mogadishu city is not very high. However, it is not low because there is not sufficient security on the roads of Mogadishu city. Accidents are sometimes caused by jams; Mogadishu is famous for jams from time to time. Table 5 and Figure 12 give you more details about the rate of traffic accidents in Mogadishu involved in this scientific research.

#### 4.11 Most Traffic Accidents in Mogadishu Happen.

This section identified the number of respondents most affected by traffic accidents that happen in Mogadishu. Most of the time, traffic accidents happen because of another variable that the respondents were asked to identify their experience with. The time of accident respondents in this research was divided into four groups. Out of the 500 respondents, most participants agreed that most city accidents occur in the afternoon, and most of the time there is congestion in Mogadishu in the afternoon. Table 5 and Figure 13 give you more details about most of the traffic accidents in Mogadishu that involved this scientific research.

**Table 6**

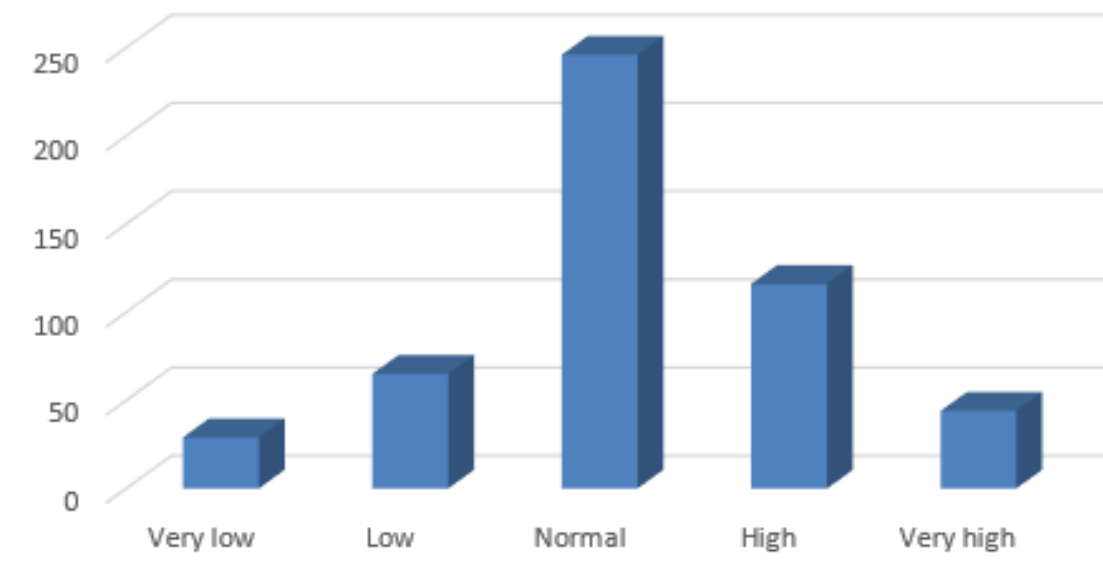
*Rate & Time Accidents Data Analysis*

	Frequency	Percentage %	Mean	Std. Deviation
<b>Rate accidents</b>			1.24	0.871
Very low	29	5.8		
Low	65	13		
Normal	246	49.2		
High	116	23.2		
Very high	44	8.8		
Total	500	100		

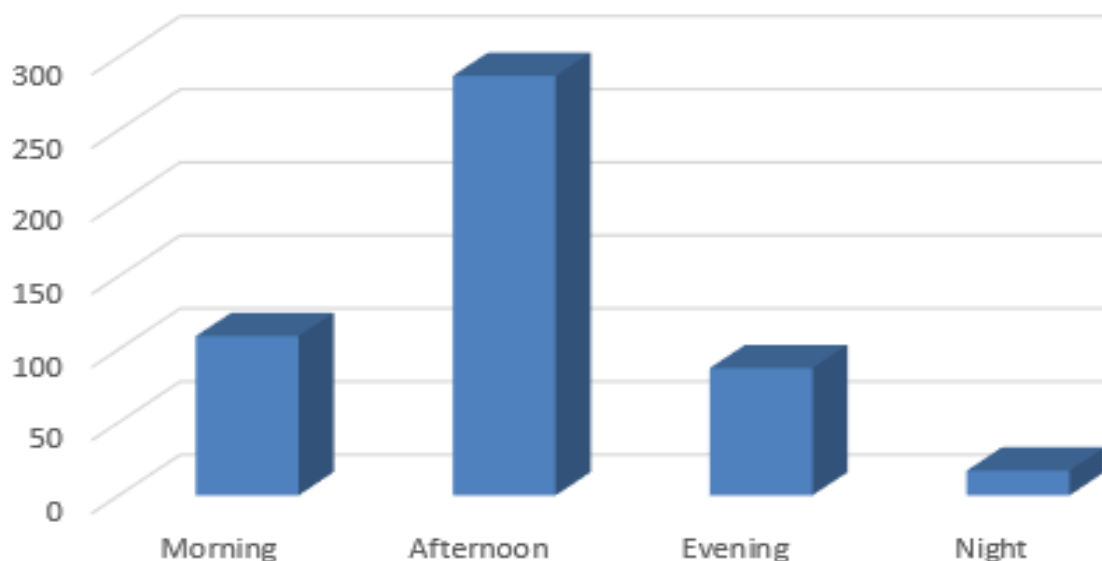
<b>Time accidents</b>			1.94	0.704
Morning	109	21.8		
Afternoon	287	57.4		
Evening	87	17.4		
Night	17	3.4		
Total	500	100		

**Figure 11.**

*level of Accident*





**Figure 12.***Time of Accident*

#### **4.12 Drivers using the Mobile Phone under Driving**

This section identified the number of respondents using cell phones while driving in Mogadishu. Drivers using cell phones were another variable that the respondents were asked to identify their habits. Respondents to this study who were using cell phones while driving were divided into six groups. Out of the 500 respondents, the use of telephones while driving can result in severe complications, even to the point of death and damage to people or properties. In Somalia, drivers use a lot of telephones and do not pretend to be mature people while driving, which is why it is one of the countries with the most accidents. Table 6 and Figure 14 give you more details about drivers' using cell phones while driving involving this scientific research.

#### **4.13 Most Seasons Cause a Traffic Accident in Mogadishu.**

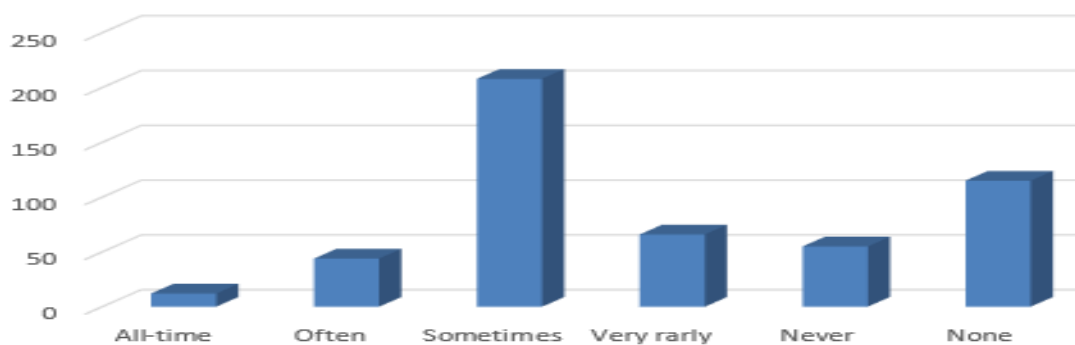
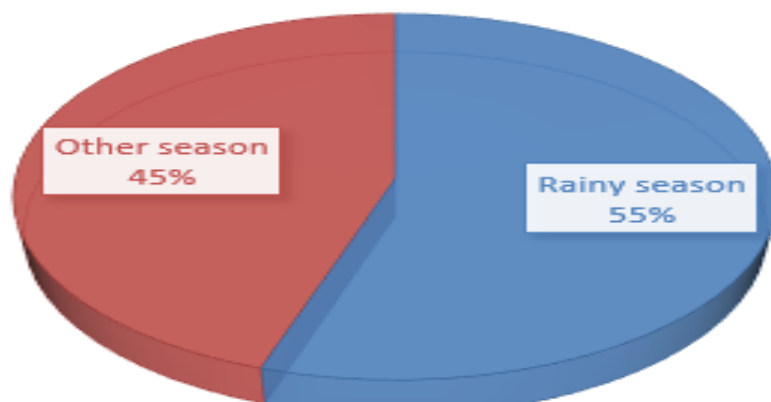
This section identified the number of respondents most frequently causing traffic accidents in Mogadishu. Another variable that the respondents were asked to identify their ideas according to their experiences was traffic accidents. Seasons cause traffic accident respondents in this research to be divided into two groups. Seasons such as the rainy season and others. The 500

respondents, many participants in this study identified the rainy season as the most dangerous time in Mogadishu. During the rainy season in Mogadishu, roads are blocked and they become stagnant, making it difficult for traffic. Mogadishu does not have functional sewers, which is why roads are closed when it rains, increasing accidents. Table 6 and Figure 15 give you more details about the most common causes of traffic accidents involving this scientific research.

**Table 7**

*Using Cell Phone & Season of Accident Data Analysis*

	Frequency	Percentage %	Mean	Std. Deviation
<b>Using cell phone</b>			4.28	1.458
All-time	12	2.4		
Often	44	8.8		
Sometimes	208	41.6		
Very rarely	66	13.2		
Never	55	11		
None	115	23		
Total	500	100		
<b>Season accident</b>			1.43	0.496
Rainy season	276	55.2		
Other season	224	44.8		
Total	500	100		

**Figure 13.***Using Cell Phone***Figure 14.***Season more Traffic Accident*

#### 4.14 Type of Vehicle more Involved Accident

This section identified the number of respondents' type of vehicle most involved in accidents in Mogadishu. The type of vehicle more involved in the accident was another variable that the respondents were asked to identify their experience with. The types of vehicles that responded to this research were divided into six groups, and also added option none. Of the 500 respondents, The participants in this study mostly agreed that tuk-tuks and cars are the major causes of traffic accidents in Mogadishu. Due to a lack of knowledge, most tuk-tuk drivers look

careless and don't have any documents that allow them to drive any kind of vehicle. Most tuk-tuk drivers are teenagers. The combination of these factors can make it easier to increase the risk of car accidents in Mogadishu. Table 7 and Figure 17 give you more details about the vehicle involved accident in this scientific research.

#### **4.15 Knowledge Traffic Light Sign**

This section identified the number of respondents' knowledge of traffic light signs in Mogadishu. The knowledge of traffic light signs was another variable that the respondent was asked to identify their level of knowledge about road signs. Respondents of this research were divided into two options: those who know signs and those who don't know signs. Out of the 500 respondents, the participants in this study mostly knew the basics about signs. As a result, some drivers do not respect the signs, although in Mogadishu there are no signs nowadays. Table 7 and Figure 17 give you more details about the knowledge of traffic light signs involved in this scientific research.

#### **4.16 Enough Traffic Police in Mogadishu**

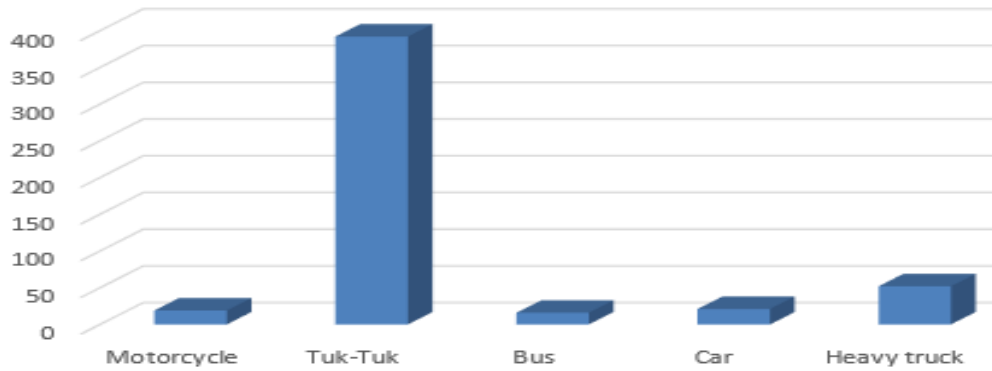
This section identified the number of respondents who were enough traffic police in Mogadishu. The traffic police in Mogadishu were another variable that the respondents were asked to identify their level of experience with road traffic police in Mogadishu. The traffic police respondents of this research were divided into two options, namely: enough police and not enough. Out of the 500 respondents, the participants in this study mostly agreed that Mogadishu doesn't have enough traffic police. This not only increases the risk of accidents but also increases the risk of some vehicles causing damage in the event of an accident that escapes the scene. The main reason is that there are no traffic police standing on the main roads in Mogadishu. In most cases, the accident is carried out according to the magnitude of the problem, regardless of which vehicle is at fault. Table 4.3 and figure 4.14 give you more details about the number of traffic police involved in this scientific research.

**Table 8***knowledge, Accident &Traffic Police Data Analysis*

	Frequency	Percentage %	Mean	Std. Deviation
<b>Knowledge of sign</b>				
With knowledge	311	62.2		
Without knowledge	189	37.8		
Total	500	100		
<b>Accident involved</b>			2.37	1.003
Motorcycle	19	3.8		
Tuk-tuk	392	78.4		
Bus	16	3.2		
Car	21	4.2		
Heavy truck	52	10.4		
Total	500	100		
<b>Traffic police</b>			0.48	0.467
Enough traffic	85	17		
Not enough	415	83		
Total	500	100		

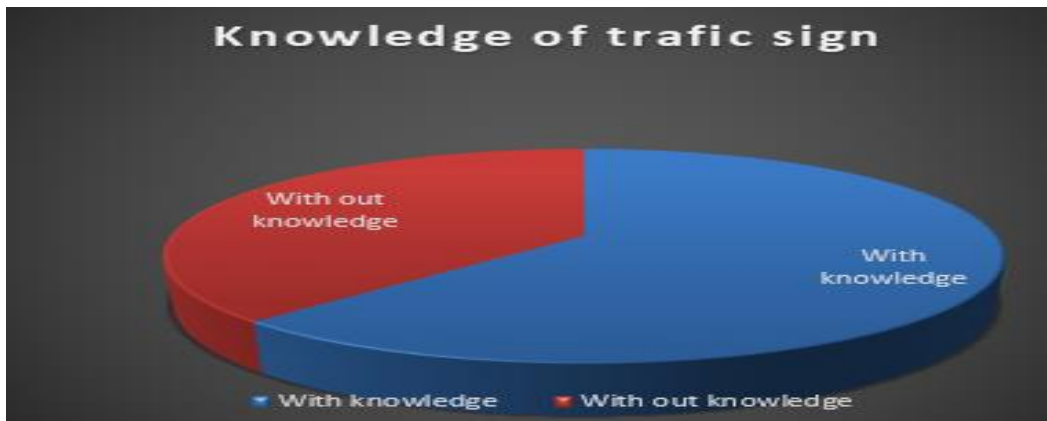
**Figure 15**

*Vehicle Involved Accident*



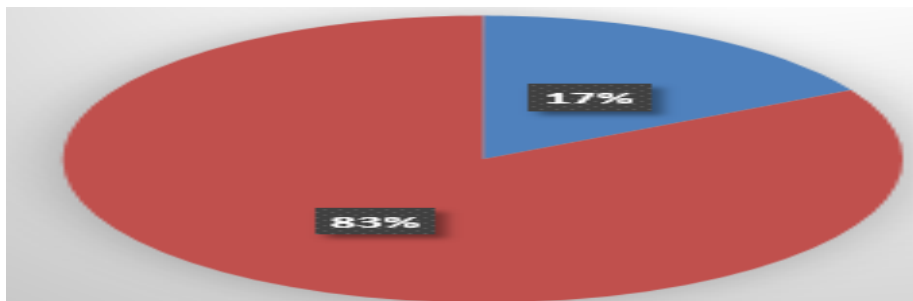
**Figure 16**

*Traffic Sign Knowledge*



**Figure 17**

*Enough traffic polices*



## **Main Causes of Traffic Accidents**

The main causes of traffic accidents in Mogadishu are In this section, we present the highlights of the Mogadishu accident. The participants were asked a question and given five options to get their response. Using the most common words, which are: strongly disagree, disagree, natural, agree, and strongly agree.

### **4.17 Variable of Pedestrian**

This section identified the number of respondents to the variable "pedestrian". Pedestrian was another variable that the respondent was asked to identify their level of experience with the main causes of a traffic accident in Mogadishu. Pedestrian respondents of this research were divided into five options. Out of the 500 respondents, strongly disagreed with 195 respondents, disagreed with 161 respondents, natural was 98, agree with 36 respondents, and strongly agree with 10. The participants in this study mostly agreed that pedestrians are not involved in the main causes of accidents in Mogadishu. The people of Mogadishu are moving cautiously, always trying to protect themselves from the dangers of traffic accidents. because they are aware that there is no traffic safety in Mogadishu. Also, they know there are not enough traffic police. Figure 19 and Table 8 give you more details about the variables of pedestrian involvement in this scientific research.

### **4.18 Variable of Over Speeding**

This section identified the number of respondents to the variable Over speeding was another variable that the respondent was asked to identify their level of experience with the main causes of a traffic accident in Mogadishu. Over speeding respondents in this research were divided into five options. Strongly disagreed with 94 respondents, disagreed with 43 respondents, and naturally with 66 respondents, agreed with 167 respondents, and strongly agreed with 130 respondents. The participants in this study mostly agreed that speeding is the leading cause of accidents in Mogadishu. In Mogadishu, there is no limit to the speed that allows the vehicle to move. Sometimes the drivers are very careless, and many accidents in Mogadishu are caused by

this. Figure 19 and Table 8 give you more details about the variables of overspending involved in this scientific research.

#### **4.19 Variable of Drunk Driving Variable**

This section identified the number of respondents to the variable "drunk driving." Drunk driving was another variable that the respondent was asked to identify their level of experience with the main causes of a traffic accident in Mogadishu. Drunk driving respondents in this research were divided into five options. I strongly disagreed with 102 respondents, disagreed with 113 respondents, naturally with 106, agreed with 113 respondents, and strongly agreed with 66 respondents out of 500 respondents. The participants in this study mostly agreed that drunk driving isn't a more involved cause of accidents in Mogadishu. Some drivers in Mogadishu use drugs, but not particularly at the same time as they drive the vehicle. Nothing is done to determine the control of drug abuse and the use of this judgment in Mogadishu. Drivers in Mogadishu mostly use cigarettes. Figure 19 and Table 8 give you more details about the variables of drunk driving involved in this scientific research.

#### **4.20 Variable Distracted Driving**

This section identified the number of respondents to the variable "distracted driving." Distracted driving was another variable that the respondent was asked to identify their level of experience with the main causes of a traffic accident in Mogadishu. District driving respondents in this research were divided into five options. I strongly disagreed with 84 respondents, disagreed with 66 respondents, and strongly agreed with 173 respondents out of 500. The participants in this study mostly agreed that district driving is the major cause of accidents in Mogadishu. In Mogadishu, some drivers show their absence of mind by not limiting the speed to allow the vehicle to move. Sometimes the drivers are very disoriented in many accidents. Figure 19 and Table 8 give you more details about the variables of distracted driving involved in this scientific research.



#### **4.21 Variable of Reckless Driving**

This section identified the number of respondents to the variable "reckless driving." Reckless driving was another variable that the respondent was asked to identify their level of experience with the main causes of a traffic accident in Mogadishu. Reckless driving respondents in this research were divided into five options. Of the 500 respondents, they strongly disagreed with 79 respondents, disagreed with 69 respondents, and naturally with 123 respondents. I agreed with 171 respondents and strongly agreed with 58 respondents. The participants in this study mostly agreed that reckless driving is the more common cause of accidents in Mogadishu. In Mogadishu, there are some drivers absent, and the mind always tries to drive in every situation. There are not many rules and regulations for roads in Mogadishu. Sometimes the drivers are very reckless and cause many accidents. Figure 19 and Table 8 give you more details about the variables of reckless driving involved in this scientific research.

#### **4.22 Variable of Night Driving**

This section identified the number of respondents to the variable of night driving. Night driving was another variable that the respondents were asked to identify their level of experience with the main causes of traffic accidents in Mogadishu. Night-driving respondents of this research were divided into five options. Out of the 500 respondents, 97 strongly disagreed, 135 disagreed, and 148 respondents were natural. 96 respondents agreed. 24 respondents strongly agreed. The participants in this study mostly agreed that night driving is not a more involved cause of accidents in Mogadishu. For more than 30 years, there has been no stable situation in the whole country, especially in Mogadishu. If the sun goes down, traffic jams in Mogadishu should reduce due to the issue of security. The number of traffic accidents was reduced at night due to the less crowded population and vehicles. Night driving with security is more relaxed. Figure 19 and Table 8 give you more details about the variables of night driving involved in this scientific research.

#### **4.23 Variable of Teenage Driving**

This section identified the number of respondents to the variable "teenage driving." Another thing the person was asked about was how old they were when they were asked about the main causes of a traffic accident in Mogadishu. Teenage driving respondents to this research were divided into five options. I strongly disagreed with 87 respondents, disagreed with 73 respondents, naturally with 131 respondents, agreed with 126 respondents, and strongly agreed with 83 respondents. The participants in this study mostly agreed that teenage driving is an important cause of accidents in Mogadishu. Not much, but sometimes there is a lot of underage driving, which is also very risky and causes many accidents in Mogadishu. When you are young, you do not have much confidence in driving, and you may suffer a lot. In Somalia, there is no age limit for private or public drivers. That is why you see a lot of teenagers driving in Mogadishu. Figure 20 and Table 8 give you more details about the variables of teenage driving involved in this scientific research.

#### **4.24 Variable of Jumbling red Traffic Light**

This section identified the number of respondents to the variable of jumbling red traffic lights. Jumbling traffic was another variable that the respondent was asked to identify their level of experience with the main causes of a traffic accident in Mogadishu. Out of 500 respondents, 93 strongly disagreed, 78 strongly disagreed, and 69 naturally disagreed, while 137 agreed and 123 strongly agreed. The participants in this study mostly agreed that jumbling red traffic lights are the causes of accidents in Mogadishu. There are a lot of drivers who do not follow the rules and regulations of the road signs in Mogadishu. Last year, there was a project on the traffic lights in some junctions in Mogadishu. Most drivers didn't respect the rules due to a lack of awareness and knowledge. The jumbling of the vehicle in the traffic light causes increased damage to the population and increases injury and death. In Mogadishu, there are not enough traffic police to keep track of all these things, to save illness and damage. Figure 20 and Table 8 give you more details about the variables of jumbling red traffic lights involved in this scientific research.

#### **4.25 Variable Overtaking and Careless Driving**

This section identified the number of respondents to the variable "overtaking and careless driving." Overtaking and wrong driving were other variables that the respondents were asked to identify their level of experience with the main causes of traffic accidents in Mogadishu. Overtaking and careless driving respondents in this research were divided into five options. I strongly disagreed with 95 respondents, disagreed with 55 respondents, naturally with 76 respondents, agreed with 144 respondents, and strongly agreed with 130 respondents. The participants in this study mostly agreed that overtaking and wrong driving are the main causes of accidents in Mogadishu. There are a lot of drivers who do not follow the rules and regulations of the road signs in Mogadishu. Also, do overtake and bad driving. Most drivers didn't respect the rules due to a lack of awareness and knowledge. Overtaking and careless driving cause increased damage to the population and injury and death. In Mogadishu, there are not enough traffic police to keep track of all these things, to save illness and damage. Figure 20 and Table 8 give you more details about the variable overtaking and wrong driving involved in this scientific research.

#### **4.26 Variable of lack of Making Signals**

This section identified the number of respondents to the variable "lack of making signals." Lack of making signals was another variable that the respondent was asked to identify their level of experience with the main causes of a traffic accident in Mogadishu. Lack of making signals, respondents in this research were divided into five options. Out of the 500 respondents, strongly disagreed with 88 respondents, disagreed with 37 respondents, and natural with 61 respondents. 147 respondents agreed, and 167 respondents strongly agreed. The participants in this study mostly agreed that a lack of making signals is an important cause of accidents in Mogadishu. It's the responsibility of the government of Somalia to lead this project. Also, raise awareness about signals and signs because highways are public. There are many people in society, not only drivers, who do not know the rules and regulations of the road signs in Mogadishu. The lack of making signals has increased the damage to the population and increased injury and death. In Mogadishu, there are is enough traffic police to keep track of all these things, to save illness and

damage. Figure 20 and Table 8 give you more details about the variables of the lack-making signal involved in this scientific research.

#### **4.27 Variable of a Huge Number of Vehicles**

This section identified the number of respondents to the variable as a huge number of vehicles. A huge number of vehicles was another variable that the respondents were asked to identify their level of experience with the main causes of a traffic accident in Mogadishu. The huge number of vehicle respondents in this research was divided into five options. Of the 500 respondents, 97 strongly disagreed with 97 respondents, 52 disagreed with 52 respondents, and, naturally, 89 respondents. I agreed with 155 respondents and strongly agreed with 107 respondents. The participants in this study mostly agreed that a huge number of vehicles are involved in accidents in Mogadishu. Nowadays, Mogadishu is a growing city, developmentally, socially, and economically, with a growing number of vehicles. The increasing number of vehicles on the road increases the risk to road safety. The lack of making signals has increased the damage to the population and increased injury and death. In Mogadishu, there are not enough traffic police to keep track of all these things, to save illness and damage. Figure 20 and Table 8 give you more details about the variables of a huge number of vehicles involved in this scientific research.

#### **4.28 Variable of Narrow Roads**

This section identified the number of respondents to the variable "narrow roads." Narrow roads were another variable that the respondents were asked to identify their level of experience with the main causes of traffic accidents in Mogadishu. Narrow-road respondents in this research were divided into five options. I agreed with 83 of the 500 respondents who strongly disagreed, 37 who disagreed, and 76 who naturally agreed with 163 respondents, strongly agreed with 141 respondents. The participants in this study mostly agreed that narrow roads are the causes of accidents in Mogadishu. Roads are usually two-way or more, where two cars can pass side by side evenly, or there is only one one-way side that allows two vehicles to pass at one time. In Mogadishu, many narrow roads that don't have any control over. The level of accidents on

narrow roads in Mogadishu is high. Figure 20 and Table 8 give you more details about the variables of narrow roads involved in this scientific research.

#### 4.29 Poor Construction and Planning Roads

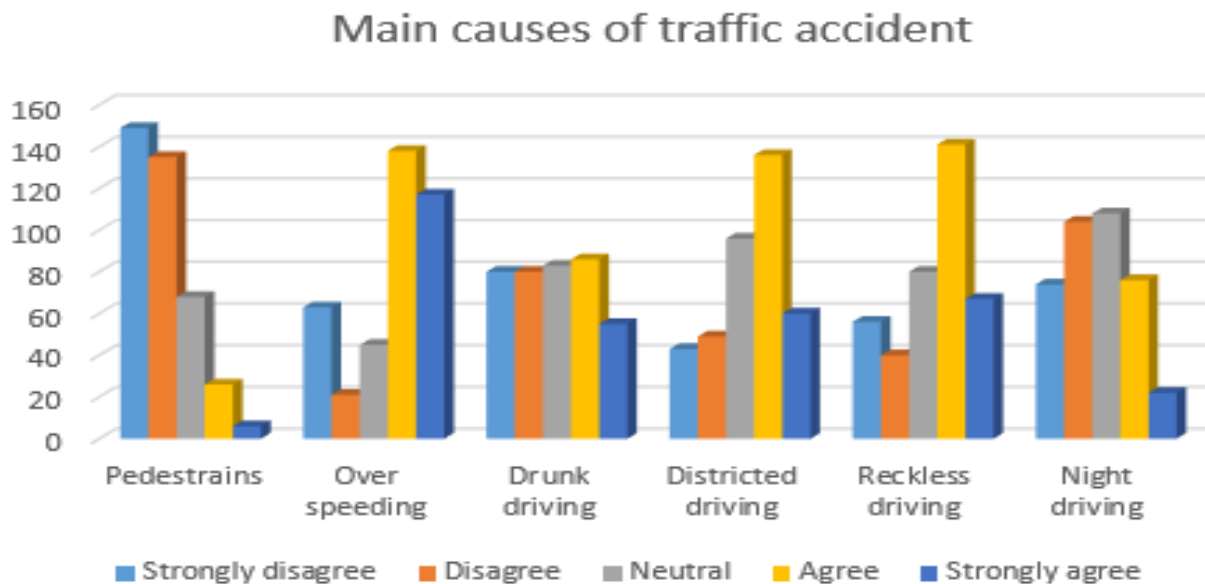
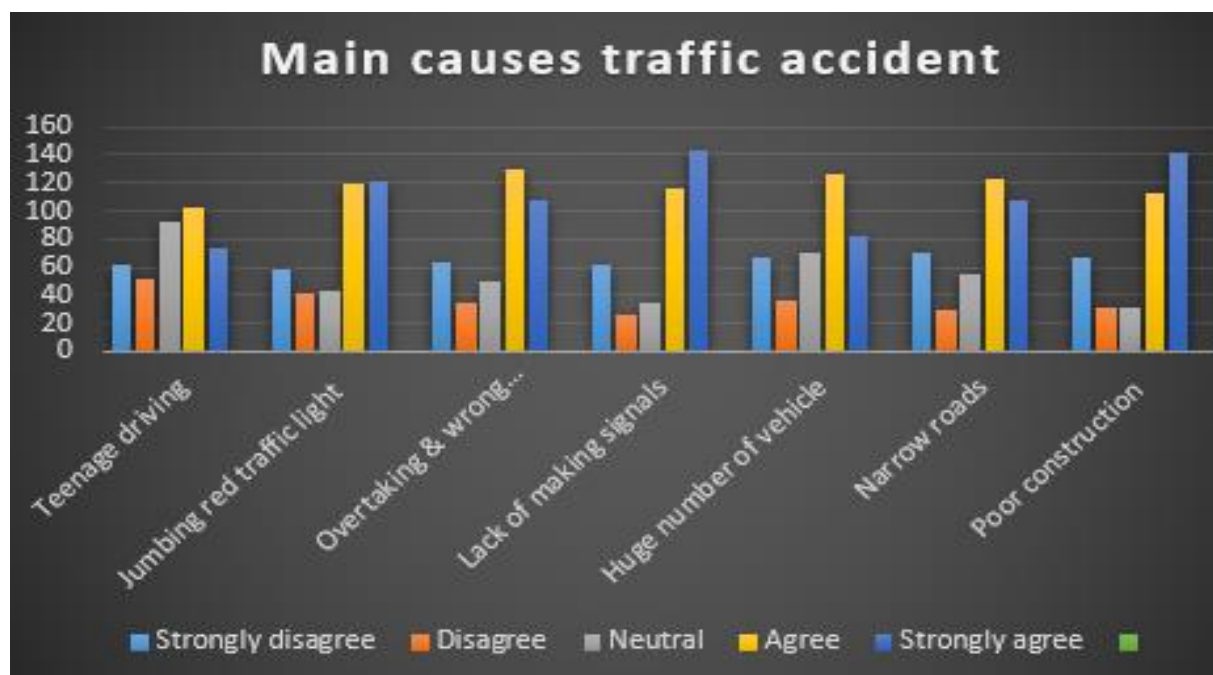
This section identified the number of respondents who had variable poor construction and bad planning of roads. Poor construction and bad planning were other variables that the respondent was asked to identify their level of experience with the main causes of a traffic accident in Mogadishu. Poor construction and bad planning of roads. Respondents to this research were divided into five options. 93 respondents strongly disagreed with 93 respondents, disagreed with 51 respondents, and naturally disagreed with 49 respondents. They agreed with 112 respondents and strongly agreed with 195 respondents. The participants in this study mostly agreed that poor construction and bad planning are the main causes of accidents in Mogadishu. Most of the roads in Mogadishu do not have regular maintenance, and in the past, they did not have proper planning. The problem now is that if the government tries to repair a road, it will be difficult to change the original design to make it easier. For more than 30 years, the situation in Somalia has not been stable. Figure 20 and Table 8 give you more details about the variables of poor construction and bad planning of roads involved in this scientific research.

**Table 9**

*The main causes of road traffic accidents*

<b>Variable</b>	<b>Strongly disagree</b>	<b>Disagree</b>	<b>Neutral</b>	<b>Agree</b>	<b>Strongly agree</b>	<b>Mean</b>	<b>Std. Deviation</b>
Pedestrian	195	161	98	36	10	1.97	0.989
Over speeding	94	43	66	167	130	3.59	1.397
Drunk driving	102	113	106	113	66	2.89	1.353
Distracted driving	84	66	107	173	70	3.32	1.208

Reckless driving	79	69	123	171	58	3.32	1.286
Night driving	97	135	148	96	24	2.66	1.164
Teenage driving	87	73	131	126	83	3.23	1.465
Jumbling red traffic light	93	78	69	137	123	3.52	1.423
Over taking and wrong driving	95	55	76	144	130	3.47	1.407
Lack of making signals	88	37	61	147	167	3.66	1.445
Narrow roads	97	52	89	155	107	3.44	1.433
Huge number of vehicle	83	37	76	163	141	3.32	1.376
Poor construction and bad planning	93	51	49	112	195	3.59	1.482

**Figure 18.***Main Causes of Road Accidents***Figure 19.***Main causes of traffic accidents*

## **The Main Causes of Increasing Road Traffic Safety**

### **4.30 Qualified Drivers**

This section identified the number of respondents to the variable of qualified drivers. Qualified drivers were another variable that the respondents were asked to identify their level of experience with the main causes of increasing road traffic safety in Mogadishu. Qualified driver respondents in this research were divided into five options. 104 respondents strongly disagreed with 104 respondents, disagreed with 51 respondents, naturally with 45 respondents, agreed with 121 respondents, and strongly agreed with 179 respondents. The participants in this study mostly agreed that qualified drivers are involved in improving road traffic safety and increasing the security of society. Because they have prior driving experience, they have more evidence about others. It is difficult to have an accident with a good driving experience, which is why the participants in this study mostly agreed to improve road safety. Figure 21 and Table 9 give you more details about the variables of qualified drivers involved in this scientific research.

### **4.31 Seat Belts**

This section identified the number of respondents to the variable of seat belts. Seat belts were another variable that the respondents were asked to identify their level of experience with the main causes of increasing road traffic safety in Mogadishu. Seat belt respondents in this research were divided into five options. Out of the 500 respondents, strongly disagreed with 45 respondents, disagreed with 44 respondents, and naturally with 127 respondents, agreed with 114 respondents. I strongly agree with 170 of the respondents. The participants in this study mostly agreed that seat belts are involved in increasing road traffic safety in Mogadishu. Most of the roads in Mogadishu do not have regular traffic police to control all the illegal parts, so drivers know that Somalia is one of the most dangerous countries in terms of road accidents. Figure 21 and Table 9 give you more details about the variables of seat belts involved in this scientific research.



#### **4.32 Driving Regulation Should be Applied Strictly**

This section identified the number of respondents to the variable of driving regulations that should be applied strictly. Driving regulations were another variable that the respondent was asked to identify their level of experience with the main causes of increasing road traffic safety in Mogadishu. The driving regulation respondent of this research was divided into five options. Of the 500 respondents, 80 strongly disagreed with 80 respondents, 38 disagreed with 38 respondents, and there were naturally 82 respondents. I agreed with 127 respondents and strongly agreed with 173 respondents. The participants in this study mostly agreed that driving regulations should be applied strictly and they were more involved in improving road traffic safety and increasing the security of society. This point must lead directly to the government of Somalia, which is responsible for all traffic laws and regulations in the whole country. Whoever breaks them, if the government imposes severe punishment, there will be fewer accidents. Then the safety of the roads would be increased and the damage would be less. Figure 21 and Table 9 give you more details about the variables of driving regulations that should be strictly involved in this scientific research.

#### **4.32 Increasing Number of Traffic Police**

This section identified the number of respondents to the variable as an increasing number of traffic police. The traffic police were another variable that the respondents were asked to identify their level of experience with the main causes of increasing road traffic safety in Mogadishu. The increasing number of traffic police respondents in this research was divided into five options. 86 respondents strongly disagreed with 86 respondents, disagreed with 57 respondents, naturally disagreed with 73 respondents, agreed with 125 respondents, and strongly agreed with 159 respondents. The participants in this study mostly agreed that increments in the number of traffic police are involved in improving road traffic safety and increasing the security of society. If the government increases the number of traffic police, there will be fewer accidents because the work of the police will be done by every driver who is investigated for illegal activities such as drunk drivers, teenage drivers, speeding, a driver without pelt, and so on. Figure 21 and

Table 9 give you more information about the variable of how many traffic cops were involved in this scientific study, and they can help you understand it better.

#### **4.33 Improving Road Condition and Maintenance**

This section identified the number of respondents to the variable of improving road conditions and maintenance. Improving roads was another variable that the respondents were asked to identify their level of experience with the main causes of increasing road traffic safety in Mogadishu. Respondents in this study who were interested in improving their driving skills were divided into five categories. Of the 500 respondents, they strongly disagreed with 67 respondents, disagreed with 46 respondents, and naturally with 66 respondents. I agreed with 133 respondents and strongly agreed with 188 respondents. The participants in this study mostly agreed that improving road conditions and maintenance are involved in increasing road traffic safety in Mogadishu. Most of the roads in Mogadishu do not have regular maintenance. If public highways were built, traffic jams would be reduced, and accidents would be one of the main causes. You can look at Figure 21 and Table 9 to learn more about the variables in this scientific study that affect how well roads are kept and how well they are kept.

#### **4.34 Improving Road Design**

This section identified the number of respondents to the variable of improving road design. Improving road design was another variable that the respondent was asked to identify their level of experience with the main causes of increasing road traffic safety in Mogadishu. Respondents to this survey were divided into five categories for improving road design. Of the 500 respondents, they strongly disagreed with 77 respondents, disagreed with 62 respondents, and naturally with 72 respondents. I agreed with 153 respondents and strongly agreed with 136 respondents. The participants in this study mostly agreed that improving road design is involved in increasing road traffic safety in Mogadishu. Most of the roads in Mogadishu do not have regular maintenance. The basic aim of road design is to improve efficiency and safety by reducing the cost and damage to the environment. If highways are built, traffic jams will be

reduced, and accidents will be one of the main causes. Figure 21 and Table 9 give you more details about the variables of improving road design involved in this scientific research.

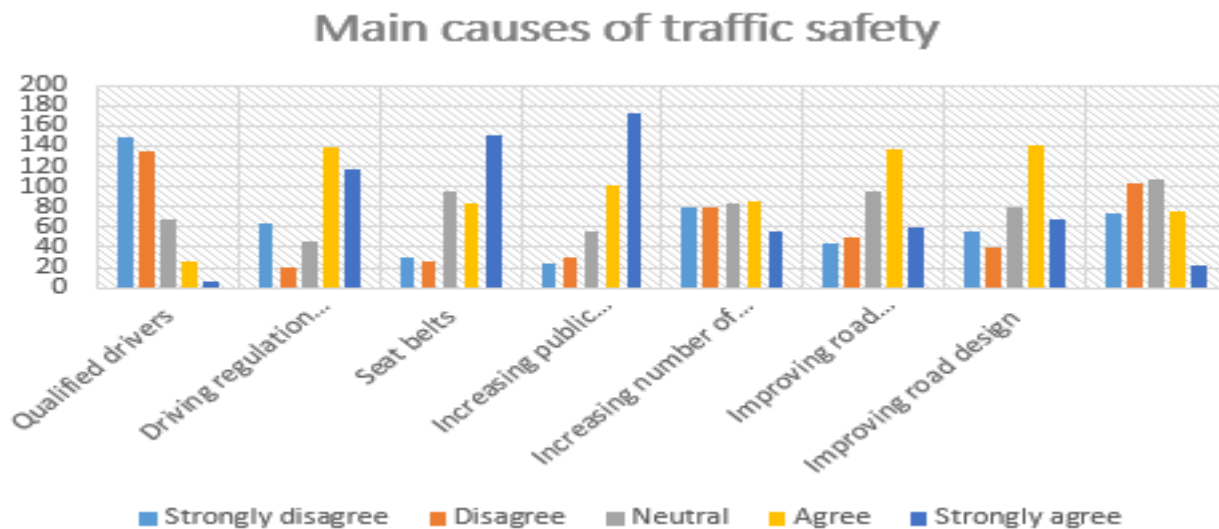
**Table 10**

*The main causes of increasing road traffic safety*

<b>Variable</b>	<b>Strongly disagree</b>	<b>Disagree</b>	<b>Neutral</b>	<b>Agree</b>	<b>Strongly agree</b>	<b>Mean</b>	<b>Std. Deviation</b>
Qualified drivers	104	51	45	121	179	3.46	1.561
Increasing public awareness	49	55	119	132	145s	3.44	1.433
Seat belt	45	44	127	114	170	3.45	1.460
Driving regulations should be applied strictly	80	38	82	127		3.65	1.448
Increasing number of traffic police	86	57	73	125	159	3.58	1.447
Improving road condition and maintenance	67	46	66	133	188	3.72	1.428
Improving road design	77	62	72	153	136	3.57	1.411

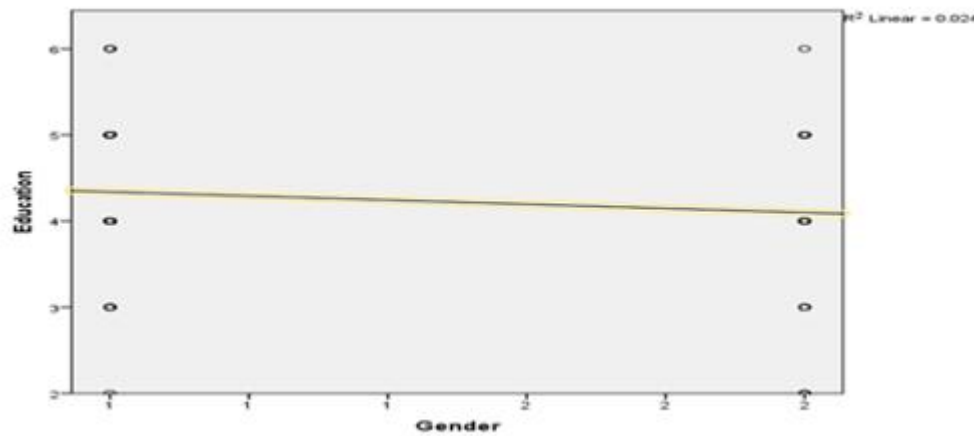
**Figure 20**

*The main causes of increasing road traffic safety*



#### **4.35 Relationship Between Gender and Education**

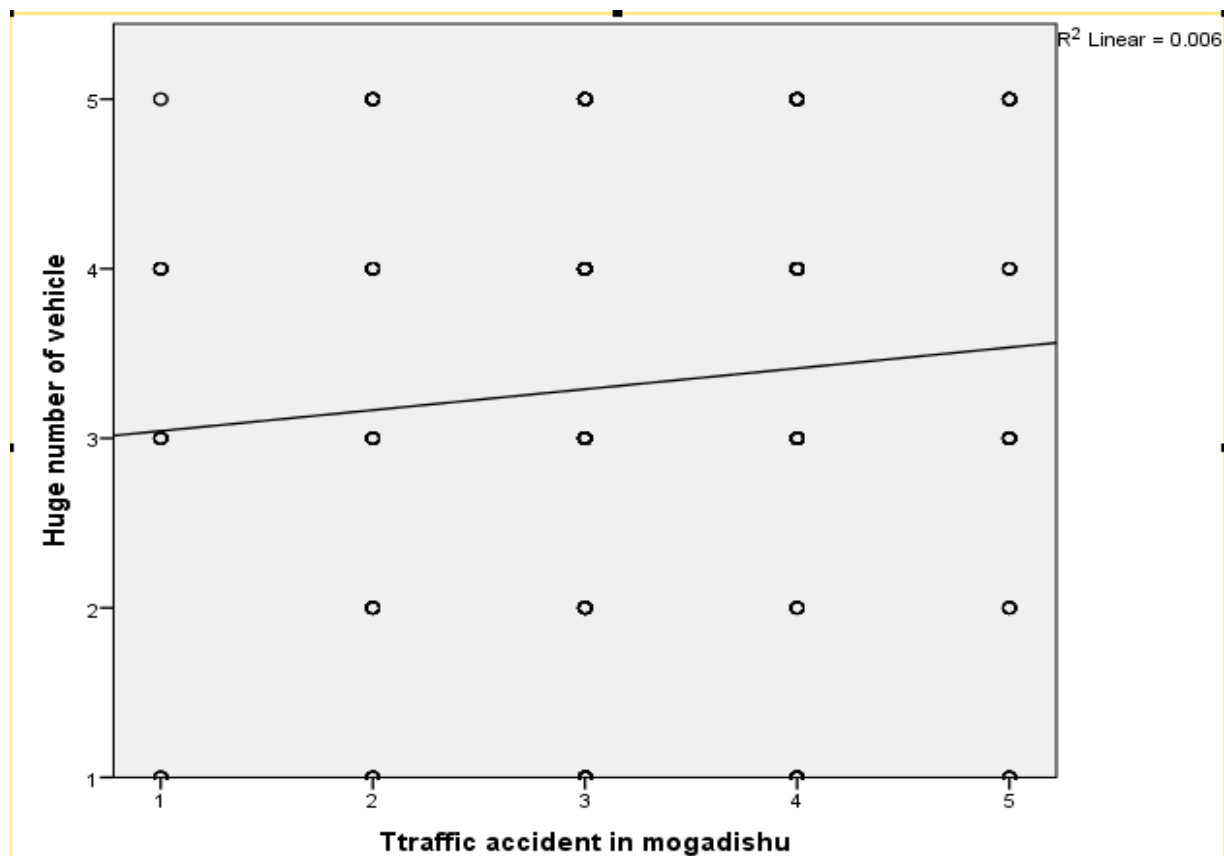
Figure 22 shows how a Pearson correlation coefficient was used to develop a relationship finding. According to the result, we can see that simply, there was a negative correlation between the two variables with  $r = -.155$ ,  $p = .002$ , and  $n = 500$ . Furthermore, Figure 22 showed there was a weak negative correlation between the two variables. This means gender equality increases and education decreases. Accepting the hypothesis,  $p < 0.05$ , we accepted the hypothesis and concluded that there is a statistically significant correlation between the two variables. Also, we would like to summarize Table 12 with the many variables I have chosen to compare it with.

**Figure 21***Correlation Between Gender and Education***4.36 Relationship Between Traffic Accidents and Huge number of vehicles**

The Pearson correlation coefficient was used to develop the findings depicted in figure 23. According to the result, we can see that simply, there was a positive correlation between the two variables with  $r = 0.064$ ,  $p = 0.021$ , and  $n = 500$ . The results showed there was a weak positive correlation between the two variables. This means that when the number of vehicles increases, traffic accidents will also increase. We reject the hypothesis and conclude that there is no statistically significant correlation between the two variables. Table 12 goes over all of the variables in great detail.

**Figure 22**

*Correlation Between Traffic Accidents and Huge Number of Vehicles*

**Table 11**

*Pearson Correlation Between Traffic Accident and other Variables*

		<b>Traffic accident</b>	<b>Education</b>	<b>Correlation coefficient</b>
<b>Traffic accident</b>	Pearson correlation	1	.010	Week positive
	Sig. (2-tailed)		.843	Rejected
	N	500	500	No significant
<b>Valid license</b>	Pearson correlation	.010	1	Week positive
	Sig. (2-tailed)	.843		Rejected
	N	500	500	No significant

		<b>Traffic accident</b>	<b>Time accident</b>	
<b>Traffic accident</b>	Pearson correlation Sig. (2-tailed) N	1  500	.037 .047 500	Week positive Accepted Significant
<b>Time accident</b>	Pearson correlation Sig. (2-tailed) N	.037 .047 500	1  500	Week positive Accepted Significant
<b>Traffic accident</b>		<b>Traffic accident</b>	<b>Using cell phone</b>	
<b>Using cell phone</b>	Pearson correlation Sig. (2-tailed) N	1  500	.032 .53 500	Week positive Rejected No significant
	Pearson correlation Sig. (2-tailed) N	.032 .53 500	1  500	Week positive Rejected No significant
		<b>Traffic accident</b>	<b>Season</b>	
<b>Traffic accident</b>	Pearson correlation Sig. (2-tailed) N	1  500	.47 .047 500	Moderate positive Accepted Significant
<b>Season</b>	Pearson correlation Sig. (2-tailed) N	.47 .047 500	1  500	Moderate positive Accepted Significant
		<b>Traffic accident</b>	<b>Pedestrians</b>	

<b>Traffic accident</b>	Pearson correlation Sig. (2-tailed) N	1  500	.008  500	Week positive Rejected No significant
<b>Pedestrians</b>	Pearson correlation Sig. (2-tailed) N	.008  500	1  500	Week positive Rejected No significant
		<b>Traffic accident</b>	<b>Over speeding</b>	
<b>Traffic accident</b>	Pearson correlation Sig. (2-tailed) N	1  500	.044  500	Week positive Rejected No significant
<b>Over speeding</b>	Pearson correlation Sig. (2-tailed) N	.044  500	1  500	Week positive Rejected No significant
		<b>Traffic accident</b>	<b>Drunk driving</b>	
<b>Traffic accident</b>	Pearson correlation Sig. (2-tailed) N	1  500	.021  500	Week positive Rejected No significant
<b>Drunk driving</b>	Pearson correlation Sig. (2-tailed) N	.021  500	1  500	Week positive Rejected No significant
		<b>Traffic accident</b>	<b>Distracted driving</b>	
<b>Traffic accident</b>	Pearson correlation Sig. (2-tailed) N	1  500	.36  500	Week positive Accepted Significant
<b>Districted driving</b>	Pearson correlation Sig. (2-tailed)	.36 .047	1	Week positive Accepted



	N	500	500	Significant
		<b>Traffic accident</b>	<b>Reckless driving</b>	
<b>Traffic accident</b>	Pearson correlation Sig. (2-tailed) N	1  500	-.13  .079 500	Week negative Rejected No significant
<b>Reckless driving</b>	Pearson correlation Sig. (2-tailed) N	-.13  .079 500	1  500	Week negative Rejected No significant
		<b>Traffic accident</b>	<b>Night driving</b>	
<b>Traffic accident</b>	Pearson correlation Sig. (2-tailed) N	1  500	.082  .010 500	Week positive Accepted No significant
<b>Night driving</b>	Pearson correlation Sig. (2-tailed) N	.082  .010 500	1  500	Week positive Accepted Significant
		<b>Traffic accident</b>	<b>Teenage driving</b>	
<b>Traffic accident</b>	Pearson correlation Sig. (2-tailed) N	1  500	.046  .036 500	Week positive Accepted Significant
<b>Teenage driving</b>	Pearson correlation Sig. (2-tailed) N	.046  .036 500	1  500	Week positive Accepted Significant
		<b>Traffic accident</b>	<b>Jumbling traffic</b>	

<b>Traffic accident</b>	Pearson correlation Sig. (2-tailed) N	1  500	.003 .095 500	Week positive Rejected No significant
<b>Jumbling traffic</b>	Pearson correlation Sig. (2-tailed) N	.003 .095 500	1  500	Week positive Rejected No significant
		<b>Traffic accident</b>	<b>Wrong driving</b>	
<b>Traffic accident</b>	Pearson correlation Sig. (2-tailed) N	1  500	.049 .034 500	Week positive Accepted Significant
<b>Wrong driving</b>	Pearson correlation Sig. (2-tailed) N	.049 .034 500	1  500	Week positive Accepted Significant
		<b>Traffic accident</b>	<b>Lack signals</b>	
<b>Traffic accident</b>	Pearson correlation Sig. (2-tailed) N	1  500	.024 .064 500	Week positive Rejected No significant
<b>Lack signals</b>	Pearson correlation Sig. (2-tailed) N	.024 .064 500	1  500	Week positive Rejected No significant
		<b>Traffic accident</b>	<b>Huge vehicle</b>	
<b>Traffic accident</b>	Pearson correlation Sig. (2-tailed) N	1  500	.064 .021 500	Week positive Accepted Significant
<b>Huge vehicle</b>	Pearson correlation Sig. (2-tailed)	.064 .021	1	Week positive Accepted

	N	500	500	Significant
		<b>Traffic accident</b>	<b>Narrow roads</b>	
<b>Traffic accident</b>	Pearson correlation Sig. (2-tailed) N	1  500	.011 .082 500	Week positive Rejected No significant
<b>Narrow roads</b>	Pearson correlation Sig. (2-tailed) N	.011 .082 500	1  500	Week positive Rejected No significant
		<b>Traffic accident</b>	<b>Poor construction bad planning of roads</b>	
<b>Traffic accident</b>	Pearson correlation Sig. (2-tailed) N	1  500	.48 .034 500	Moderate positive Accepted Significant
<b>Bad planning road</b>	Pearson correlation Sig. (2-tailed) N	.48 .034 500	1  500	Moderate positive Accepted Significant
		<b>Traffic accident</b>	<b>Qualified driving</b>	
<b>Traffic accident</b>	Pearson correlation Sig. (2-tailed) N	1  500	.018 .073 500	Week positive Rejected No significant
<b>Qualified driving</b>	Pearson correlation Sig. (2-tailed) N	.018 .073 500	1  500	Week positive Rejected No significant
		<b>Traffic accident</b>	<b>Driving regulation</b>	

<b>Traffic accident</b>	Pearson correlation Sig. (2-tailed) N	1  500	.028 .50 500	Week positive Accepted Significant
<b>Driving regulation</b>	Pearson correlation Sig. (2-tailed) N	.028 .50 500	1  500	Week positive Accepted Significant
		<b>Traffic accident</b>	<b>Increasing police</b>	
<b>Traffic accident</b>	Pearson correlation Sig. (2-tailed) N	1  500	.018 .073 500	Week positive Rejected No significant
<b>Increasing police</b>	Pearson correlation Sig. (2-tailed) N	.018 .073 500	1  500	Week positive Rejected No significant
		<b>Traffic accident</b>	<b>Improving road maintenance</b>	
<b>Traffic accident</b>	Pearson correlation Sig. (2-tailed) N	1  500	.014 .078 500	Week positive Rejected No significant
<b>Improving road maintenance</b>	Pearson correlation Sig. (2-tailed) N	.014 .078 500	1  500	Week positive Rejected No significant
		<b>Traffic accident</b>	<b>Improving road design</b>	
<b>Traffic accident</b>	Pearson correlation Sig. (2-tailed) N	1  500	.014 .078 500	Week positive Rejected No significant

<b>Improving road design</b>	Pearson correlation	.14	1	Week positive
	Sig. (2-tailed)	.078		Rejected
	N	500	500	No significant

#### 4.37 Regression

A traffic accident is positively related to a huge number of vehicles. The results of regression analysis indicate a weak positive relationship between them. The week regression coefficient was 0.047 with a p-value of 0.029. See table 13 showing the regression coefficient between variables.

**Table 12**

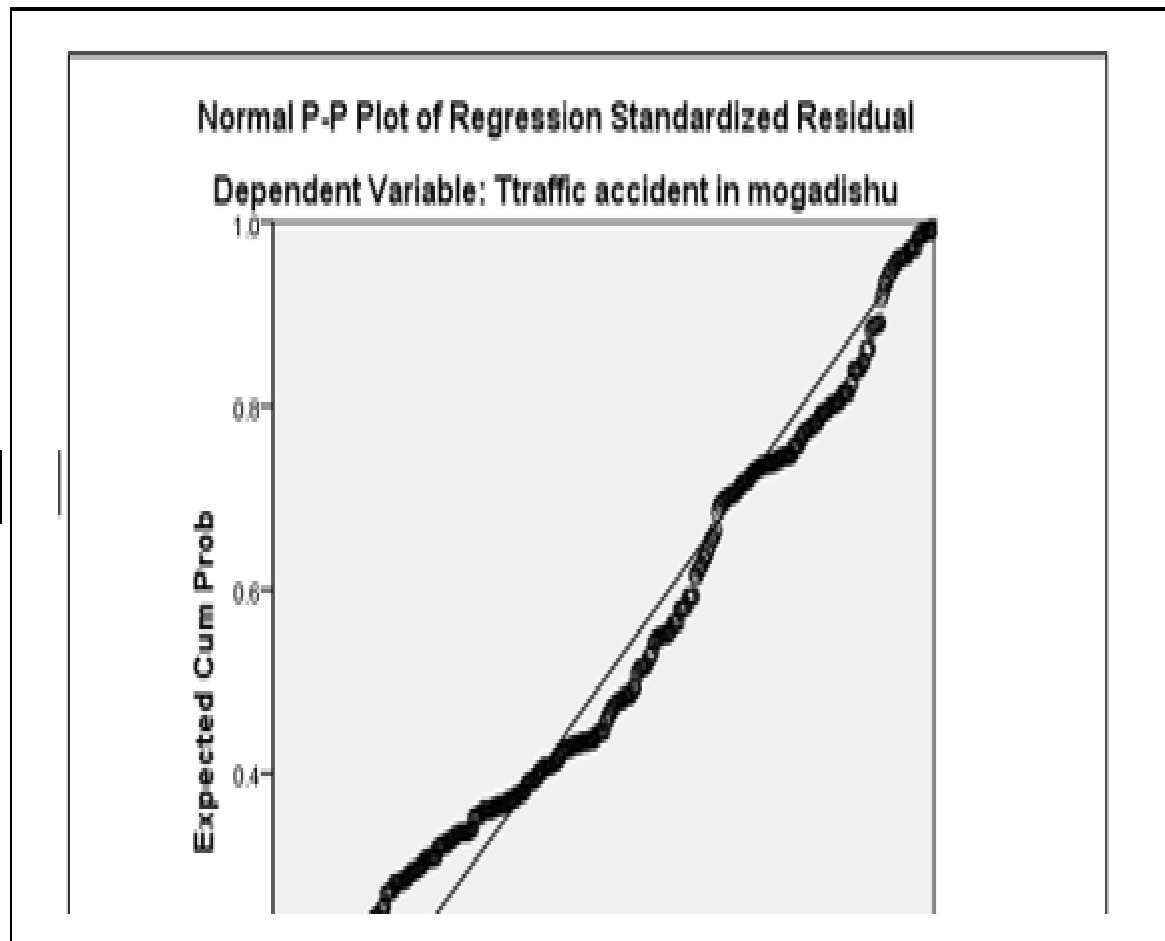
*Showing the Regression coefficient between variables*

<b>Dependent variable</b>	<b>Beta</b>	<b>t-value</b>	<b>p-value</b>	<b>Regression coefficient</b>
Gender	.066	.541	.589	Week positive
Marital status	-.053	-.422	.067	Week negative
Age	-.018	-.229	.081	week negative
Education	.057	.712	.047	Week positive
Professional	-.220	-1.971	.049	week negative
Residence	-.354	-2.858	.000	Moderate negative
Owner of vehicle	-.039	-.245	.807	Week negative
Type of vehicle	.027	.848	.397	Week positive
Valid license	.064	.449s	.654	Week positive
Most happen accident	.078	1.143	.254	Week positive
Using cell phone while driving	.013	.382	.703	Week positive
Season causes accident	.054	.577	.564	Week positive
Type of vehicle involved accident	-.014	-.306	.760	Week negative
Knowledge of traffic sign	.051	.491	.624	Week positive

Enough Traffic police	-.414	-2.311	.021	Moderate negative
Pedestrian	.001	.026	.979	Week positive
Over speeding	.013	.229	.819	Week negative
Drunk driving	-.016	-.378	.706	Week negative
Districted driving	.069	1.162	.246	Week positive
Reckless driving	-.093	-1.626	.105	Week negative
Night driving	.061	1.359	.175	Week positive
Teenage driving	.019	.503	.615	Week positive
Jumbling red traffic	-.010	-.181	.856	Week negative
Overtaking and wrong driving	-.004	-.066	.947	Week negative
Lack of making signals	-.023	-.432	.666	Week negative
A huge number of vehicles	.047	1.043	.029	Week positive
Narrow roads	-.026	-.566	.572	Week negative
Poor construction roads	.039	.849	.397	Week positive
Qualified driving	-.008	-.159	.874	Week negative
Driving regulation	.057	.795	.427	Week positive
The increasing number of vehicles	-.033	-.571	.568	Week negative
Improving road condition	-.039	-.604	.546	Week negative
Improving road design	-.001	-.024	.981	Week negative

**Figure 23.**

*Regression Relationship Between Variables*



## CHAPTER V

### CONCLUSION AND RECOMMENDATION

#### 5.1 Conclusion

This study was conducted to determine the importance of knowledge and awareness of traffic rules and bad driving behavior, which minimizes road traffic safety. and also to assess drivers' understanding of and awareness of traffic rules in Mogadishu, Somalia. To achieve the aims, the method of the questionnaire was developed and disseminated among drivers in Mogadishu. This survey was divided into four sections: participant information, traffic accident causes, and recommendations. This study found the rate of traffic safety in Mogadishu is low. The type of vehicle most often involved in a traffic accident was a tuk-tuk.

#### 5.2 Recommendation

- ✓ The common people involved in accidents in Mogadishu are mostly two groups: 18–25 and 26–35 because they don't have valid licenses or much knowledge about road rules and regulations.
- ✓ The government should have a clearance plane to check the drivers' age, license, alcohol consumption, and anything else causing illness in the population.
- ✓ The most common time for accidents in Mogadishu is the afternoon, and traffic officials must be extra careful and spend as much time as possible minimizing accidents on the road
- ✓ The very high percentage of people in Mogadishu using cell phones while driving increases the rate of accidents. The first responsibility is for the driver to take care of himself and the community to stop all illegals from causing accidents.
- ✓ According to the study, the most common reasons for accidents in Mogadishu are the rainy season and a lack of rainwater runoff. This study strongly suggests that the Somali government controls rainwater runoff that causes accidents on public highways. It also



advises drivers to be extra careful as the roads have not been repaired and maintained for more than 30 years.

- ✓ This study has identified tuk-tuk as the most involved vehicle accident in Mogadishu due to the lack of knowledge, disregarded rules, and regulation of traffic road safety. The government is required to set up a strict evaluation system for the driving test.
- ✓ Private law enforcement centers should handle the government of Somalia with the extra addition of a theory section to teach traffic laws and signs.
- ✓ More than 90% of this study found there were no traffic police in Mogadishu. We think that the city should have enough traffic police to keep the roads safe for people to drive on.
- ✓ Over speeding was one of the critical harms involving road traffic accidents in Mogadishu. The government should be the limit sign for vehicle speed, considering the capacity of that highway.
- ✓ The government should train drivers' ways of driving, both in theory and practice, and the government should take special responsibility for this, as by making evaluations for all drivers. At that time, it was easy to control and decrease the harmful effects of drivers.
- ✓ Mogadishu has no reliable road design. The basic aim of road design is to improve efficiency and safety by reducing the cost and damage to the environment. This study advised the government to make the right plan for roads.
- ✓ Finally, I recommend that the government install traffic lights and control them fully

## REFERENCES

- AFRICAN DEVELOPMENT BANK. 2014. ROAD SAFETY MANUALS FOR AFRICA.
- Akgüngör, Ali Payıdar, and Erdem Doğan. 2009. “AN ARTIFICIAL INTELLIGENT APPROACH TO TRAFFIC ACCIDENT ESTIMATION: MODEL DEVELOPMENT AND APPLICATION.” *TRANSPORT* 24(2):135–42. DOI: 10.3846/1648-4142.2009.24.135-142.
- A.M. Yahia, Hussin, Amiruddin Ismail, Shaban Ismael Albrka, Aldukali Salem Almselati, and Mohd. Azizul Ladin. 2014. “Attitudes and Awareness of Traffic Safety among Drivers in Tripoli-Libya.” *Research Journal of Applied Sciences, Engineering, and Technology* 7(24):5297–5303. DOI: 10.19026/rjaset.7.929.
- Jacobs, G., and A. Aeron-Thomas. 2000. Africa Road Safety Review Final Report.
- Laureshyn, Aliaksei. 2010. “Evaluation of Traffic Safety, Based on Micro-Level Behavioural Data: Theoretical Framework and First Implementation.” *Accident Analysis and Prevention* 10.
- M. Abu Abdo, Ahmad, and Yousuf A. Al-Ibrahim. 2016. “Assessment of Traffic Safety and Awareness Among Road Users in Salalah, Sultanate of Oman.” *Research Journal of Applied Sciences, Engineering and Technology* 12(5):574–81. DOI: 10.19026/rjaset.12.2685.
- Maqbool, Younus, Ankit Sethi, and Jagdeep Singh. 2019. “Road Safety and Road Accidents: An Insight.” 6(0972):14.
- Peden, M. 2004. “World Health Organization Dedicates World Health Day to Road Safety.” *Injury Prevention* 10(2):67–67. DOI: 10.1136/ip.2004.005405.

Peden, M. M., and World Health Organization, eds. 2004. *World Report on Road Traffic Injury Prevention*. Geneva: World Health Organization.

U.S. Department of State. 2019. *Somalia 2020 OSAC Crime & Safety Report*.

A J Downing, C J Baguley and B L Hills. (1991). *Road safety in developing countries :an overview*.

<http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.496.5717&rep=rep1&type=pdf>

African Medical and Research Foundation. (2000). *Injuries as a public health problem in sub-Saharan Africa: epidemiology and prospects for control*.  
<https://europepmc.org/article/med/12862115>

Antić, B., Grdinić, M., Pešić, D., & Pajković, V. (2020). Benchmarking of the road safety performance among the regions by using DEA. *Transportation Research Procedia*, 45, 78–86. <https://doi.org/10.1016/j.trpro.2020.02.065>

Delorme, R., & Lassarre, S. (2014). A new theory of complexity for safety research. The case of the long-lasting gap in road safety outcomes between France and Great Britain. *Safety Science*, 70, 488–503. <https://doi.org/10.1016/j.ssci.2014.06.015>

Dharun Balakrishnan. (2012). *ROAD ACCIDENT*.  
<https://www.slideshare.net/dharunbalakrishnan/road-accident-10939515>

Dr. N. Mittal. (2008). *Policies and programs for road safety in developing India*. 1, 7.

Dragutinovic, N., & Twisk, D. (2005). *Use of mobile phones while driving – effects on road safety*. 57.

FAISAL AYUB. (2016). *Road safety presentation.*

<https://www.slideshare.net/FaisalAyub8/road-safety-presentationppt-by-faisal>

*Global status report on road safety: Supporting a decade of action.* (2013). World Health Organization.

*Golobal status report on road safety.* (2004).

[https://books.google.com.cy/books?hl=en&lr=&id=Ndrf6DuCQHMC&oi=fnd&pg=PP](https://books.google.com.cy/books?hl=en&lr=&id=Ndrf6DuCQHMC&oi=fnd&pg=PP2&dq=report+of+road+safety+in+world&ots=tfdEExfUTE&sig=WRTPd-cR7tcn7jHYpJ-LJFEaFGg&redir_esc=y#v=onepage&q=report%20of%20road%20safety%20in%20world&f=false)

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[cR7tcn7jHYpJ-](https://books.google.com.cy/books?hl=en&lr=&id=Ndrf6DuCQHMC&oi=fnd&pg=PP2&dq=report+of+road+safety+in+world&ots=tfdEExfUTE&sig=WRTPd-cR7tcn7jHYpJ-LJFEaFGg&redir_esc=y#v=onepage&q=report%20of%20road%20safety%20in%20world&f=false)

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Ipingbemi, O & Aiworo, A.B. (2013). *A review of road traffic fatalities and countermeasures in sub-sahara Africa.* <http://ir.library.ui.edu.ng/handle/123456789/1136>

Lenka Komackova & Milos Poliak. (2016). Factors Affecting the Road Safety. *Journal of Communication and Computer*, 13(3). <https://doi.org/10.17265/1548-7709/2016.03.006>

Maqbool, Y., Sethi, A., & Singh, J. (2019). *Road safety and Road Accidents: An Insight.* 6(0972), 14.

Mohamed, M., & Bromfield, N. F. (2017). Attitudes, driving behavior, and accident involvement among young male drivers in Saudi Arabia. *Transportation Research Part*

*F: Traffic Psychology and Behaviour*, 47, 59–71.

<https://doi.org/10.1016/j.trf.2017.04.009>

- Peng, Z., Gao, S., Li, Z., Xiao, B., & Qian, Y. (2018). Vehicle Safety Improvement through Deep Learning and Mobile Sensing. *IEEE Network*, 32(4), 28–33. <https://doi.org/10.1109/MNET.2018.1700389>
- Raftery, S., & Wundersitz, L. (2011). *The efficacy of road safety education in schools: A review of current approaches*. 57.
- Shalom Hakkert, A., & Gitelman, V. (2014). Thinking about the history of road safety research: Past achievements and future challenges. *Transportation Research Part F: Traffic Psychology and Behaviour*, 25, 137–149. <https://doi.org/10.1016/j.trf.2014.02.005>
- Sullman, M. J. M., & Stephens, A. N. (2013). A comparison of the Driving Anger Scale and the Propensity for Angry Driving Scale. *Accident Analysis & Prevention*, 58, 88–96. <https://doi.org/10.1016/j.aap.2013.05.002>
- U.S. Department of State. (n.d.). *BASIC PRINCIPLES OF ACCIDENT PREVENTION*. 12.
- U.S. Department of State. (2019). *Somalia 2020 OSAC Crime & Safety Report*. <https://www.osac.gov/Content/Report/edf51eca-57f5-4aa4-a9ab-15f4aeb38a7b>
- Verma, A., Gupta, A., & Nath, B. (2017). *Road Safety Improvement in India*. 4(4), 4.
- Everitt, B., & Howell, D. C. (Eds.). (2005). *Encyclopedia of statistics in behavioral science*. John Wiley & Sons.
- Glenn D. Israel. (1992). *Determining Sample Size1*. <file:///C:/Users/Ali/Desktop/samplesize1.pdf>
- Jamia Millia Islamia, Inaam Akhtar. (2016). *Research Design*. <file:///C:/Users/Ali/Desktop/BookChapters.pdf>
- Makina, A. (2011). *The Impact of Globalization on Somali Culture*. 12.

UN HABITAT. (2017). *TOWARDS MOGADISHU SPATIAL STRATEGIC PLAN*.

[https://unhabitat.org/sites/default/files/download-manager-files/Mogadishu\\_Report\\_reprint.pdf](https://unhabitat.org/sites/default/files/download-manager-files/Mogadishu_Report_reprint.pdf)

African Medical and Research Foundation. (2000). *Injuries as a public health problem in sub-Saharan Africa: epidemiology and prospects for control*.

<https://europepmc.org/article/med/12862115>

Antić, B., Grdinić, M., Pešić, D., & Pajković, V. (2020). Benchmarking of the road safety performance among the regions by using DEA. *Transportation Research Procedia*, 45, 78–86. <https://doi.org/10.1016/j.trpro.2020.02.065>

Delorme, R., & Lassarre, S. (2014). A new theory of complexity for safety research. The case of the long-lasting gap in road safety outcomes between France and Great Britain. *Safety Science*, 70, 488–503. <https://doi.org/10.1016/j.ssci.2014.06.015>

## APPENDIX A

### QUESTIONNAIRE FORM

#### Awareness of traffic safety and evaluation among drivers in the city of Mogadishu, Somalia

##### Section 1: Personal information

###### ❖ Gender

- Male
- Female

###### ❖ Marital status

- Single
- Married

###### ❖ Age

- 18-25 years old
- 26-35
- 36-45
- 46-50
- More than 50

###### ❖ Educational levels

- Below basic
- Basic
- High school
- Bachelor
- Master
- PHD

❖ **Employment status**

- Employed
- Unemployed

❖ **Area type for residence**

- Inside Mogadishu
- Outside Mogadishu

❖ **Have you a car?**

- Yes
- No

❖ **Type of vehicle**

- Motorcycle
- Tuk-tuk
- Bus
- Car
- Heavy Trucks



- Other
- None

❖ **Do you have a valid license for the vehicle?**

- Yes
- No

**Section B: Road safety and evaluation drivers in Mogadishu**

❖ **Road traffic accident in Mogadishu**

- Very low
- Low
- Normal
- High
- Very high

❖ **Most traffic accidents in Mogadishu happen**

- Morning
- Afternoon
- Evening
- Night

❖ **How often do you use your mobile phone while driving?**

- All-time

- Often
- Sometimes
- Very rarely
- Never

❖ **Which season causes more traffic accidents in Mogadishu**

- Rainy season
- Another season

❖ **Which type of vehicle is more involved in traffic accidents in Mogadishu?**

- Motorcycle
- Tuk-tuk
- Bus
- Car
- Heavy Trucks
- Other
- None

❖ **Do you know traffic light signs?**

- Yes
- No

❖ **Do the roads of Mogadishu have enough amount of Traffic Police?**

- **Yes**
- **No**

❖ **How the damage of the unsafety traffic affects the economic growth in Mogadishu?**

- Very low
- Low
- Normal
- High
- Very high

❖ **What do you think to improve awareness of traffic safety?**

- Through television
- Through radio
- Through social media

<b>Factor name</b>	<b>Strongly disagree</b>	<b>Disagree</b>	<b>Neutral</b>	<b>Agree</b>	<b>Strongly Agree</b>
Pedestrians					
over-speeding					
Drunk driving					
Distracted driving					
Reckless driving					
Night driving					

Teenage driving					
Jumbling red traffic lights					
Overtaking & wrong Driving					
Road rage					
Lack of marking signals					
The huge number of vehicles					
Narrow roads					
Poor construction & bad planning of roads					

<b>Factors</b>	<b>Strongly disagree</b>	<b>Disagree</b>	<b>Neutral</b>	<b>Agree</b>	<b>Strongly Agree</b>
Increasing public awareness					
Qualified drivers					

Driving regulations should be applied strictly					
The increasing number of traffic policemen					
Improving road condition and maintenance					
Improving road design					
To improve vehicle design					

26.09.2022

Dear Ali Musse Hassan

Your application titled **“Awareness Of Traffic Safety and Evaluation among Drivers in the City of Mogadishu, Somalia”** with the application number NEU/AS/2022/131 was examined by our committee and it was decided that no ethical violation was found in the thesis and it was approved by the Ethics Committee.



Prof. Dr. Aşkın KIRAZ

Rapporteur of the Scientific Research Ethics Committee

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