



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

**ROAD TRAFFIC ACCIDENTS AND THEIR EFFECTS
ON ECONOMIC GROWTH: A CASE STUDY OF MOGADISHU**

M.Sc. THESIS

MOHAMED ABDULLAHI ABUBAKAR

Nicosia

February, 2022

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**Nicosia
February, 2022**

Onay

Yakın Doğu Üniversitesi Lisansüstü Eğitim Enstitüsü Müdürlüğüne,

Nihal SALMAN'ın "Evlilik Eğitimi Programı Geliştirilmesi ve Değerlendirilmesi" başlıklı tezi .../.../2022 tarihinde jürimiz tarafından Eğitim Programları ve Öğretim Anabilim Dalı'nda DOKTORA TEZİ olarak kabul edilmiştir.

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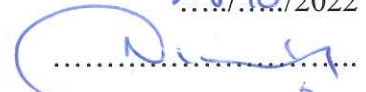


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 Prof. Dr. Hüsnü CAN BAŞER
 Enstitü Müdürü

DECLARATION

I hereby declare that all information, documents, analysis, and results in this thesis have been collected and presented according to the academic rules and ethical guidelines of the Institute of Graduate Studies, Near East University. I also declare that, as required by these rules and conduct, I have fully cited and referenced information and data that are not original to this study.

MOHAMED ABDULLAHI ABUBAKAR

15/05/2022



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Mohamed Abdullahi Abubakar



ABSTRACT

Road Traffic Accidents and Their Effects on Economic Growth: A Case Study of Mogadishu

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Road traffic accidents include casualties, traumas, deformities, despair, reduced production, or destruction of property, most of which contribute to inequality. In this research, efforts have been made to explain several of the main findings of a study performed that evaluated the causative factors for road traffic accidents within Mogadishu-Somali and also to evaluate the economic harm of those accidents. This study, which evaluates these factors in traffic road accidents and reduces the impacts on the economy and the frequencies of deaths by planning and evaluating a procedure for reducing the car accidents on those same Mogadishu roads, includes the first review of the existing activities in the traffic department of Mogadishu Street, providing a holistic picture of all interested parties and increasing This study identified that the level of accidents is very high in Mogadishu 43.8%, while 26% of the kinds of accidents that always happen in Mogadishu city are head-on collisions. An also these accidents cause a great loss of lives and the destruction of valuable properties. Night driving: Winding roads, poor planning, and poor road connectivity are also significant components of road traffic accidents in Mogadishu. According to this research, the adverse socio-economic consequences of road traffic accidents on human existence in Mogadishu were particularly substantial, with the majority of victims receiving no support after the accident except their families and friends. This will increase the negative socioeconomic implications of road traffic accidents on human lives in Mogadishu. However, it appears that automobile maintenance expenses, as well as some medical expenditures, have the biggest impact on Mogadishu's economy as a result of road traffic incidents. Mogadishu's issue has been remedied. Accidents are also the results of a complex interaction of various causes, making it very difficult to determine a single major cause. While assessing how and why the accident happened, it may also be simpler and more practical to confront the problem by applying concepts such as "accident developed in the middle of a risk-enhancing issue."

This relevant set of problems can be attributed to the incidence of road traffic accidents identified for this research. The research study, site impressions, individual interviews, and survey questionnaires are all part of the development process for this research.

KEYWORDS: *Mogadishu, Somalia; economic growth effects; road traffic accidents;*

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LIST OF ABBREVIATIONS

TATV	Traffic Average Tag Volume
ATAV	Annual Traffic Average Volume
PAR	Police Accident Report
GRSP	Global Road Safety Project
RTIRN	Road Traffic Injury Research Network
WHO	World Health Organization
RTI	Road traffic injuries
AS	Ammunition Surveyed
VMA	Vehicles Manufacturing Activities
AASHTO	American Association of State Highway and Transportation Official

CHAPTER 1

Introduction

1.1 Background

Somalia is located in the middle of the world in terms of land mass, and it has a population of around 10 million people. That place in the largest city was transferred to Mogadishu. There are still no cities in Somalia for up to one million civilians. However, Mogadishu will have more than one million, with a total of roughly 2.5 million people living in the city. Other towns are being clustered all around the original population of the same people left in Somalia. According to United Nations reports, round six regains between 100,000 and 500,000 civilians, with nearly 25 cities containing less than 10,000 people (UN, 2019). Looking through this United Nations study, it is stated that there is more to the Somali community than all of this. The explanation is that it should be understood that Somalians disperse mainly in rural areas. This could be seen in the 1960s immigration research, where there was an increase mostly in records of 83 percent, illustrating whether, given the significant displacement of goods from residential regions to the country's urbanized environment, urban areas also became large. According to estimates, Somalia has a 3% annual growth rate (Djeylani, et al., 2019).

Road traffic injuries (RTIs) obstruct developing countries' efforts to achieve environmental and sustainable development goals. Those who are enthusiastic about regions within Sub-Saharan Africa in general (Chen, 2009). In particular, road traffic accidents claimed the lives of approximately 750,000–870,000 people, with approximately 85 percent occurring in developing countries. Approximately 1.3 million people died in traffic accidents in 2002; and 90 percent of traffic accidents occurred in Sub-Saharan Africa's low- and middle-income regions were killed (WHO & UNECA, 2009). This highest fatality risk was faced (22.8 for 100,000 populations) In economic terms, traffic road fatalities also have a damaging influence on various countries' gross national incomes. According to the (WHO, 2004), road collision damage costs about 1% of the same GDP in dramatic reductions in barriers, 1.5 percent in intermediate regions, and 2% in high-income nations. Road traffic accidents involve social, economic, and economic consequences.

are common in many countries. Every collateral damage, environmental injury, and now the distress that anything produced there in human conditions was immense, but the scale still varies (Paden, et al., 2014). Linguistically, 36% of 71% of all casualties take place in urban regions but not in city environments. City traffic conditions lead to a greater share of the same total road accidents and collision problems in regions (Downing, et al, 2000). Although the volume of traffic has also increased as a result of improved road congestion with vehicle-pedestrian conflicts, the issue has improved in Somalia. Regardless of government attempts to change streets, traffic accidents continue to be one of the important issues affecting Somalia's road transport field. In Mogadishu, the statistics showed 65 deaths in road accidents while 152 were injured in more than 1026 traffic accidents (Traffic-police, 2013). Therefore, this was of essential importance to recognize road traffic deaths and even to detect scratch marks to be eligible for sports medicine with some more critical consequences. This study is going to look at and record any useful information about road traffic accidents and discolorations in Mogadishu.

1.2 Problem Statement

Road traffic accidents are one of the most serious varieties of road traffic accidents that are on the increase in low-income and middle-income nations like Somalia. Road traffic crashes are indeed a principal cause of sickness in Somalia. Especially the capital city has a higher risk of traffic accidents than other parts of the country. There are now more traffic problems that could hurt the lives and facilities of the people living there, as well as cause damage to their homes, deaths, and other problems.

1.3 Aim and Objective of Study

The aim of this study, which evaluates these factors in traffic road accidents and reduces the impacts on the economy and the frequencies of deaths by planning and evaluating a procedure for reducing the car accidents on those same Mogadishu roads, includes the first review of the existing activities in the traffic department of Mogadishu Street, providing a holistic picture of all interested parties and increasing

- 1: To assess the causes and scope of Mogadishu's traffic accidents.
- 2: To realize the effects of road traffic collisions on socio-economic growth,
- 3: Determine the economic impact of traffic-related injuries.

4: To propose a variety of alternate ways, dubbed "antis," which might, in particular, eliminate traffic accident concerns.

1.4 Scope of the study

The scope of this study focuses on the magnitude of those same collisions, as well as the problems associated with those same injuries on Mogadishu roads. And most recently, a questionnaire was used as a data collection approach. The research was carried out on the road in Mogadishu.

1.5 Research Questions

As an alternative, the following procedures or pieces of information were used to reach the study's goals instead.

1. What are the most frequent consequences of road traffic accidents in Mogadishu, and how common are they?
2. How would road traffic accidents impact Mogadishu's economic development?
3. What suggestions do you have for reducing road traffic accidents and their consequences in Mogadishu?

1.6 Thesis Organization

The study also includes five chapters. Chapter one is composed of the background of the research, then problem statements and objectives of the research, the aim of the research, the scope of the study, and the thesis organization of the study. The second chapter comprises a review of related literature. The review of literature mainly deals with different citations of journal articles, books, brochures, reports, strategies, guidelines, and other similar sources employed to support this research. Chapter three is on research methodology, study design, data collection sources, and types of data analysis. The fourth chapter is devoted to research data analysis and results discussions. Chapter five consists of the conclusions and recommendations.

CHAPTER 2

Literature Review

2.1 Introduction to Transportation

Each different dimension in capital infrastructure, water transport, and space-based transport could also be divided into transportation. This thesis is based mostly on road transportation across the land. Road transport assumes that everything relies heavily upon its part of the country where another stream was already important in terms of traffic density. Even if transportation is incredibly important for a country's social and economic development, its proper management would require a great deal of importance. However, even though the number of drivers on the road grows from time to time, there is a big problem with road traffic in the global economy because of it.

2.2 Traffic Accidents

The expression "traffic accidents" has already been invented. Each vehicle accident that happens on such a public road (i.e., occurring on, concluding, or largely effecting a vehicle on a street) (Mebrahtu, 2012). According to the same term, "an accident" is defined as "an accident that occurs on the road or roads accessible to commuters that results in the loss or damage of one or more victims, and also the exchange of at least one moving car." As a result, the RTA is also an accident involving cars, pedestrians, and animals, between any vehicle and current impediments, and also, between every vehicle and an even more existing multinational social problem (Bong & Jinhua, 2013). Anything other than that, these individuals are still a large global public health issue. Every year, more than 19.5 million people die as a direct result of more than 1.3 million deaths caused by damage (Frank, 2017). Road accidents account for approximately 85 percent of all accidents involving regular road traffic. road traffic fatalities were projected to take pole position in prevalence and incidence classifications by 2020. A conflict involving at least two or maybe more driven vehicles amounts to just "numerous" traffic road accidents. Not even all the drivers involved in some kinds of vehicle accidents are accountable for the development of the incidents, including separate accidents. Relevant factors such as the length of roads, speed limitations, and the number of vehicles included in accidents are

also permitted to play very much higher roles in the correlation of damage seriousness from a wide range of compounds (Getu, 2017).

According to the World Health Organization (WHO), road traffic accidents claim the lives of 1.17 million people worldwide each year. Conversely, a breakdown of the statistics revealed that 70 per-cent of accidents happen in developed countries. And indeed, population growth and increased traffic congestion have been linked to an increase in the risk of catastrophic road traffic injuries around the world. Steadily increasing jurisdictions differ, especially in developed countries. They can all be simply described as the "aerospace explosion," which is also the porous surface of urban communities.

2.3 Global Road Accident and Safety Report

Road traffic accidents are quite a global problem. By 2020, the World Health Organization (WHO) expects traffic accidents to be the third most common cancer.

Table 1.

Improvements as in estimates of a top 10 consequences of global disease.

1990	2020
1. Lower Respiratory infections	1. ischemic heart disease
2. Diarrheal diseases	2. Unipolar major depression
3. Conditions during the Perinatal period	3. Road traffic injuries
4. Unipolar major depression	4. Cerebrovascular disease
5. ischemic heart disease	5. Chronic obstructive pulmonary disease
6. Cerebrovascular disease	6. Lower respiratory infections
7. Tuberculosis	7. Tuberculosis
8. Measles	8. War
9. Road traffic injuries	9. Diarrheal diseases
10. Congenital abnormalities	10. HIV

Source: (WHO, 2004). World Report on Road Traffic Injury Prevention, Geneva.

The problem of accidents is not only limited to the occurrence and destruction of valuable property; it also affects the most economically active and productive age groups, especially those aged between 15 and 45 years old, who are the most heavily affected by traffic accidents, which implies that accidents are globally challenging to the earning and active population groups. This will have an impact on monetary development, while a lack

of valuable employees and creative participants will make economic builders unhappy. Consequently, visually disabled people with low-income efficiency were disproportionately targeted, although these individuals "quite obviously depend on resistance training" (WHO, 1996). Victims still reside in the facility longer than normal individuals, putting excessive pressure on patients and practitioners. So here are the global features of road accidents, including their implications:

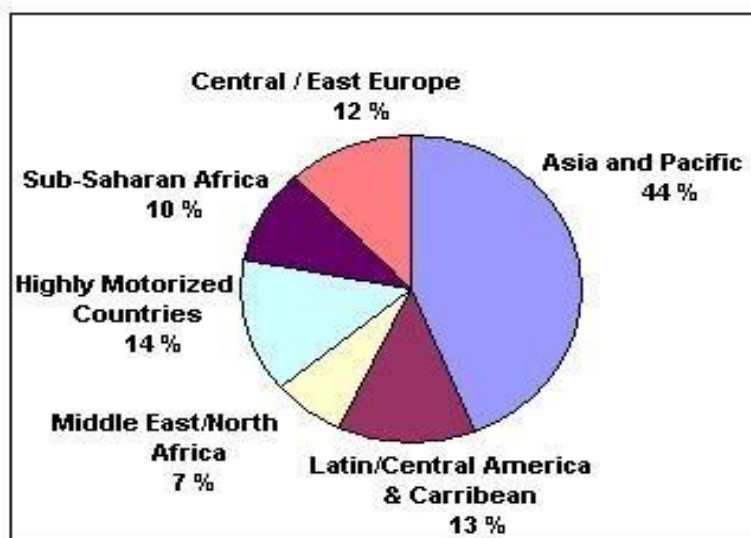
1. Annually, traffic accidents are predicted to kill 1.2 million people and disable 20-50 million others. (Daily road tolls of more than 3200, i.e., nearly 140 deaths Per day) one hour.
2. Accident rates in advanced countries are roughly 50% higher than in developing countries. In developed economies,
3. Around 88% of deaths occur in advanced nations.
4. Low- and middle-income states are encouraged to achieve a rate of around 90%. Although high-income countries will see a 30% increase in road traffic accidents, low-income countries will also see a 30% increase. Decrease

2.4 African Road Accidents and Fatalities

In a sentence, its Global Road Safety Initiative discusses heightened appreciation of the influence of road traffic accidents as little more than a major cause of death or damage for developed economies from the cross and gender-fluid assisting organizations. It was built as a region of the World Issuer's Business Relationships for Development Project, which would include coordination between some of the government-industry, social order, and government entities that strengthen crime prevention management in determining with revamped nations (Geta & Sengi, 2017). Then the Vehicle Manufacturing Activities (VRL) of the United States were assigned to assist in the

Figure 1.

Expenditures of road deaths across the countries



Source: (WHO report 1999)

However, as can be seen, Africa accounted for nearly 10% of total global deaths, which was higher than the majority of developing countries as a whole or anywhere in Central America, Latin America, and the Caribbean (Get & Sengi, 2017). In Asia and the Pacific, the highest national death rate is 44 percent. These GRSP reports can also be used to demonstrate the provincial numbers of deaths, populations, and automobiles in this same country.

Table 2.

Estimated Road deaths, vehicle, including population density

Region	Deaths	Motor Vehicle	Population
Sub-Sahara Africa	10 %	4 %	10 %
Developed World	14 %	60 %	15 %
Asia Pacific	44 %	16 %	54 %
Central & Eastern Europe	12 %	6 %	7 %
Latin America & Caribbean	13 %	14 %	8 %
Middle East & North Africa	7 %	2 %	5 %

In 1999, Sub-Saharan Africa accounted for 10% of all global traffic road accidents, with countries accounting for only 4% of all affected vehicles. In comparison, 14 percent of traffic accidents occurred primarily in the developed world (Western Europe, North America, Australia, and even Japan), and this country accounted for 60 percent of all nationally and internationally registered vehicles (Getu & Sengi, 2017).

2.5 Common Causes of Road Traffic Accidents

Road traffic accidents are determined for a variety of reasons. These conditions would improve the frequency of road traffic accidents and could also have a significant impact on these accidents. Those latter significant parameters, due to the very high frequency, including the problems encountered also by the final main factors, make a significant contribution to huge traffic road accidents or even injuries to people's lives or structures. Because the results indicate that traffic road accidents have also been continuing to increase on the world's landmasses, the risk factors that directly lead to all of the factors therein, countries are not working to reduce them but rather grow. These are the main factors:

1. Social Causes (Users for the Streets) Street Malfunction Vehicle Fracture 3

2.5.1 Human Factors

A. Pedestrians

Transport infrastructure and its construction contribute significantly to everyday society and therefore have formed an integral component of enlightenment. Mobility problems are already being constantly reported to result from vehicle accidents, including sudden losses and other behavioral and emotional problems. Commuters have become more involved in road accidents, however, according to traffic time management. Commuters, coming from the other direction, might just be the cause of all these deaths. On the other hand, academics, officers, experts, and even road accident death investigation analysts, simply try to find reasons why pedestrians would be active in accidents (Török, et al., 2017).

B. Drivers

1. Driving after being depressed

Impaired driving refers to driving while influenced by many actions that redirect the vehicle's spotlight away from the street. Every year, reckless driving becomes a significant

problem. Edge has become the contributing cause of accidents for generations, while district activity is affected. Something like a cell phone has just become a rising matter of concern regarding traffic safety. For passengers who are not using their smartphones while crossing the road, vehicles that would use their cellphones while driving if crossing roads were nearly three times less likely to be involved in road accidents. Even before texting while driving enhances reaction speed or makes it almost impossible to maintain an adequate distance, while good phones aren't that different than disposable mobile packages, texting substantially reduces the probability of road traffic collisions.

2. Being careless, reckless, or in a hurry

Careful driving is not only about managing your speed but also being considered by other road users. Careless driving is indeed a very dangerous factor that usually causes accidents. Because if you do not drive carefully, you may end up in a needless road accident. And that is happening to reckless drivers who suddenly drive at high speeds or too quickly through road rage and tailgating. However, changing lanes too quickly and erratically on a dual carriageway or motorway can cause another driver to brake quickly, which may cause a road traffic accident with the vehicle behind. However, driving too closely to the vehicle in front of your vehicle is also known as tailgating, which is also a very dangerous factor in road traffic accidents. Changing lanes very soon, moving well above legal speed, including performing dangerously on the road, could result in significant road accidents. As either a function, another vehicle must take its chances or maneuver safely to prevent potential road traffic accidents due to negligence (Kumela, et al., 2017).

3. Driving While Under the Influence of a Drug

Due to the elevated majority of road traffic accidents, driving while impaired by substances has been among the many important adverse outcomes. Driving while impaired by medication increases the chance of severe to substantial damage in traffic accidents. For the reason that when everyone is under the influence of drugs, his/her senses are not as effective as when they are sober, that is why driving under the influence of drugs is highly discouraged. Even as statistics indicate that such amounts of driving under the influence have also been reduced so much over the last three decades, it always appears (Rollason, et al., 2018). It was discovered that driving at excessive speeds while under the influence of alcohol and without regard to other road users is one of the leading causes of

traffic accidents (Pawlowski, et al., 2016). It is being investigated that the use of alcohol while driving has a significant proportion to the attribution of road traffic accidents in the world (Razzak, et al., 2012).

4. Over Speeding

In terms of road traffic accidents, speed becomes the first and most attributed factor, and careless driving becomes the second and most contributing factor. of the behavior that is associated with road traffic accidents, over-speeding is now the main cause of traffic accidents (Akhtar, et al., 2018). Over-speeding is dangerous when the vehicle exceeds the speed limit. Inaccurate speed refers to speeding at even a level that is hazardous considering the current traffic conditions and increased flow. Risky driving might cause accidents, cause serious injury to vehicles, including users, and damage to certain other drivers on the road. The possibility of a traffic accident occurring, as well as the magnitude of the consequences of a road traffic accident, is explicitly attributed to increasing speeds just above the standard. It shows that for every 1% increase in speed, the rate of severe traffic accidents grows by about 4%, and the risk of deadly accidents rises by 3%. Its risk of injury by vehicles affected by traffic increases sharply (4.5 times from 50 miles per hour to 65 kilometers per hour). At 65 kilometers per hour, for example, the death rate for vehicle drivers was 85 percent. It's also common to see many vehicles exceed the speed of traffic, moving 10, 20, or 30 mph just above the average limit. The speed limit for conditions such as this is 60 miles per hour. Breaking the speed limit is an effective way to provoke road traffic accidents. It explains why if you try and avoid some accidents, the harder you operate, the quicker your rate of reaction will be (Fenget, et al., 2019). The following facts indicate that speeding would result in

1. If a car traveling at 50 kilometers per hour crashes, 50% of the people inside die.

Anyone can get rashes.

2. When vehicles travel at 30 km/h, 10% of the population may perish.
3. An accident at 50 km/h is the same as crashing from multiple angles.

frameworks

4. A collision at 100 km/h increases the risk of crashing into 12-story structures.

5 Night Driving

Oncoming cars Speed should be kept under control at night to avoid road traffic accidents. However, it is suggested that you avoid night driving on these routes as much as possible (Zhao, 2019).

6 Teenage Driving

When teenage drivers encounter road traffic accidents, they always do not know what to do, which relates to their lack of experience in driving accidents as well. According to the research, some teenagers lack sufficient understanding to recognize what to do in risky conditions, and so this product is amongst the major causes of road accidents. Due to the lack of risk assessment, the rest of the younger drivers are regarded as having dangerous impulsive driving and speeding to the maximum (Zhao, 2019). However, over-limit speeding and disobeying traffic laws are major things in terms of road traffic accidents, and they are responsible for approximately 80% of all road traffic accidents worldwide. Although young males who drive by seeing sports competitions are most often interested in those incidents, the availability of appropriate knowledge for defensive drivers, a disregard of concern for these other road users, or defiance of traffic rules would result in one of the most common observed numbers of crashes. Teenage drivers, on the other hand, are a major contributing factor to vehicle collisions due to a complete lack of appropriate justification, including insufficient driver skills. While the main concern is also that youngsters have very little chance to coordinate regularly approved extracurricular activities, the study showed that the city layout contributes to traffic confusion and accidents (Alabaman, et al., 2016).

2.5.2 Road and Environmental factor for road traffic accidents

There are several road and environmental factors that cause and contribute to road traffic accidents worldwide. A plurality of environmental impact factors contributes to roads, including local roads, damaged roads, damaged road junction configurations, inadequate ventilation, bad implementation, and poor transport layout (Shanta & Azharuddin, 2018). However, traffic control devices such as signal conditions, street lighting, and weather conditions are also considered environmental factors that commonly contribute to road traffic accidents (Zhang & Li, 2016).

A. Road condition

According to a study, many of the most important determinants of road traffic accidents were poor driving safety. The high equivalence as relations across pollution levels either paused delays to roads and also the rate of traffic problems has been described. Even though traffic volume does indeed have a real impact on the incident level aspects of road traffic accidents, countless studies have already shown that road morphology does imply incident ratios. Aggressive driving was associated with either a probability of magnitude for accidents or inexperience. Its geometry for roads or paths, on the other hand, has both a significant effect on the incidence and the extent of traffic accidents (Hasan & Assad, 2017). While the locations of crashes concerning the junctions influence the traffic density, road alignments, traffic flow, light conditions, weather conditions, and surface condition of the roads are all of these road and environmental factors related to road traffic accidents (Arvin & Khattak, 2019). In addition, the unplanned expansion of roads causes variations in traffic, while a sudden change of lanes causes the narrowing of roads, which adds to the poor condition of roads. However, delays in some related road projects significantly increase the number of road traffic accidents (K-B & Syed, 2017).

B. Road design

Roads with an incorrect geometric form, like curves or extreme slopes, should be removed. Curving residential streets will be a fact. Road accidents are caused by inadequate railings on a road with a closed side, a lack of facilities, a heavenly shoulder mostly on the street, or bad lighting (Shahbaz, et al., 2018). It is also identified that driver errors, road defectiveness, inadequate road width, insufficient sight distance, and narrow bridges, specifically at the sag curves as well as improper intersections (Emer & Kumela, 2017).

C. Bad Planning and Poor Construction of Roads

The road's geometric layout factors were crucial in understanding the organizational road traffic of almost any road. A height, including its road, its existence, the spacing along the shoulder or road speed limits, and also the expressway's vertical and horizontal composition also were the main design factors that impacted road traffic (Hasan & Assad, 2017). Conversely, certain specific road patterns, such as the existence of curves or extreme grades, may be incorrect. There must be a circular mountainous road that exists. Road accidents are caused by inadequate precautions. The road is a closed surface, and there is limited space, such as earth sidewalks on the roadway or low lighting (Shahbaz &

Hashemi, 2018). Road defects with inadequate road width, insufficient sight distances, and narrow bridges, specifically at the sags and curves, as well as improper intersections, can be causal factors that contribute to road traffic accidents. However, poor detectives of road surfaces as well as inadequate masked road signs can contribute to road traffic accidents. According to Nuruddeen and Siyan (2016), this study showed that badly planned roads usually lead to road traffic. This in turn results in injuries, permanent disability, and sometimes the death of human beings. The study also revealed that the bad and poor state of highways, as well as the neglect by the state government with a lack of repair and maintenance, can be other leading causes of accidents in that area (Rolison, 2020). However, the layout of road networks plays a significant role in accidents, while the road lanes influence the occurrence of road traffic accidents. Some lanes are immediately merged into three lanes after one intersection or closure of a highway entrance or exit, especially in the rush hours, which makes accidents easier for more vehicles (Sharma, 2008). Fortunately, in maintaining roads, regular geometric consistency becomes demanded, particularly for mountains and hills, where many people drive to their deaths on poor roads due to poor infrastructure and conservation. Even though weak local roads are mostly the function of their district's budget constraints, or indeed the developers' as well as representatives' lack of conviction, In Somalia, particularly in the city of Mogadishu, we do not have any obstacles from the mountains in terms of road traffic accidents, but there are holes in which the water comes together in the streets. This requires redesigning and maintenance as well (Zhao, 2009).

D. Poor Road Lighting

Poor road conditions, especially during the night, result from a road traffic accident. Nowadays, the number of road traffic accidents has increased, especially at night time, when the environment is naturally dark, and that is the main reason that street lights are very important on both highways and roads, especially at night. However, visibility is a very important factor that usually affects your driving route even with the presence of street lights and headlights. The majority of drivers are highly encouraged to continue their daily routines. However, the visibility of the road during the daytime mostly differs from the visibility of the road during the night, whereas the visibility of the road during the day is more effective than the visibility of the road during the night. If the street lights

are insufficient, drivers should ensure that they have a clear view of the road by turning on their full lights (Zhao, 2009).

2.5.3 Weather Condition

The number of accidents decreased while the weather became transparent and, indeed, the environment became decreased, implying that climate doesn't quite play a significant role in causing road traffic accidents within developing countries. And there's been no decision on the connection involving particular concentration and environmental factors. Although the investigators affirmed the effects of rain, fog, water, and even warmer temperatures on accident outcomes, they still indicated that environmental effects would affect their risk of injuries. It is interesting to note that now the nights in Somalia are often clear. No one can be involved in accidents except in the rainy season (Hasan & Asiad, 2017). However, extreme heating is an environmental factor in road traffic accidents. While the pre-season of improperly maintained tires cannot stand these very extreme heat conditions, the heat also causes mental capacity problems for the drivers, as well as a heightened level of stress. This study also described rain and dense fog as other causal factors for accidents, while dust does not play a significant role in traffic accidents (Sharma, 2018).

2.5.4 Vehicle Factor

According to Kumar et al. (2018), the condition of the vehicle driving on the road plays a significant role in terms of road traffic accidents, while poorly maintained vehicles, as well as a large number of vehicles with low driving standards and overloading vehicles, are always associated with road traffic accidents. According to Zhang and Lie (2016), it has also been established that obtaining a defective vehicle causes major injuries because all those assets are hard to analyze once active in accidents. On the other hand, the very poor quality of cars indicates their riders' lack of security consciousness. Nevertheless, in conformity with it (Rolison, 2020). According to the study, most accidents involved poorly overloaded vehicles or travelers with illegal defective masters, defective mirrors, defective lights or indicators, or defective breaks and steering or suspensions. According to K-B (2017), It has often been revealed that damaged vehicles with suspension components are two of the most important factors in road traffic crashes. But even though a lot of car owners forget to maintain their vehicles, from the research, it has been observed

that commercial vehicles are involved in such a high percentage of accidents that over 50% of incidents affect commercial vehicles.

2.6 Characteristics of Road

A major element to all this analysis has been that road system data for the study has been used to provide the traffic flow impacts, leading to the increased overall road characteristics. Statistical methods also have distinct advantages for way or cross-section analysis. Descriptive statistics, for example, enable the monitoring of single temporal to morning differences, and this includes relatively useful analytics to better evaluate that nuance in evolution (Li, 2017). The specific description of the on-road system was compiled for this review from its Ammunition Surveyed (AS) Ridge Two for the period from 2001 until 2010, with perhaps the exception of 2005. Several measurements are also used to show how its district road system is different from other roads in the area.

2.6.1 Design of Speed

The design of speeds becomes important for suggesting the most reasonable speeds for when, under standard conditions, a driver can work. Reposed development of speeds can be focused on certain conditions where infrastructure is built, such as those of the design specifications of road features, estimated operating frequency, constitutional traffic rules, potential travel times, or effective descriptions of the road (Hammoudi, 2014). The average altitude of a road was evaluated for this kind of safer speed and rounded away to the next several 5mph to design the lanes for highway construction companies. Updated analyses further reflected that using the description of the steps could drive vehicles at optimal speeds in the areas of the city. Each value is designated as "entry speeds," which is coordination and collaboration to just the limit of speeds (Ivan, et al., 2009). However, the importance of speed limits on traffic fatalities and the number of crashes is not known. However, as the design speeds rise from 50 to 90 kilometers per hour, the number of accidents reduces. Fortunately, the risk of injuries did not decrease as in cases of project parameters greater than 90 kilometers per hour. On the other hand, as production time decreases all across the scale, the accident rate has increased. That was obvious, implying that the most reasonable traffic road configurations capable of accommodating driving speeds are now in operation at higher production speeds (Maubies, 2012).

2.6.2 Road Length

Changing the operation of a lane without the encouragement of actual approaching to two-lane rural roads, challenging road traveling duty is now the streets' getting the area and situation ability, and now a short stretch of road is also allowed to support your operation (significant capacity that enables for such a massive sufficient space to opposing traffic, then it's the distance covered only by the driver, with the safety buffer). An incidence of changing lanes and accidents indicates that they are compatible not only with the allocation and functional arrangement of passing lanes. There's still a tremendous rate of hazardous and mistimed swerving maneuvers while passing, and the lanes are still not offered to large chunks of rural road length. In particular, the sight distance is short.

2.6.3 Elements of Side Road

The roadsides, as mentioned in the AAHSTO Roadside Concept Plan in 1989, are the areas between the slope and the extent, including the right to drive. This description of the protected roadside is also navigable along with its existence. It does not have any hazard in relative motion where there is efficient classification. Fencing can be used to break in time with dangerous creatures. According to the AASHTO Road-side Designed Guide, visual effects activities should also be used for the relationship of So instead of establishing a "natural" distance from the surface of the sidewalk, avoid any danger. The AASHTO Road-side Development Roadmap provides dangerous road treatments under the appropriate column as shown in **Reduce the barrier and modify it.**

- Consider moving a shield.
- Reduce the perception of effects by using a sufficient fast brake system.
- Cars should be directed away from each other by revealing any space traffic road barriers and cushions for crashes.
- Separate the barriers.

Even with that specification, including its growth inhibition, it is still the most major aspect of its streetside plans. It may depend on the signalized intersection, access road slopes, and how the AASHTO road-side design process determines the porous structure's width. A road railing arrangement as established mostly by AASHTO The road design guide also serves as an observational roadblock for whom the greatest purpose is to detect events involving irresponsible traffic vehicles crossing the sides of the same road structures. Most

road traffic curtain designs, traffic ledges, and combined fences should be able to be seen from behind (Eshetu, 2011).

2.6.4 Vertical and Horizontal Curvatures

A possible cause of accident risk on the current road is the vertical curve. The slopes' vertical curves could seriously decrease road capacity in residential areas, but there are no such things as increasing accident rates in those regions. Richardson, Cambro, and Bazan assessed the effects of accidents on vertical curvatures for narrow stop-sight distances. They reasoned that only the shortest stopping distance is the greatest hazard for accidents, including when there is a severe danger even beyond the vertex (as in an intersection or elimination vertical curve). They also identified that the overall challenges were not the reduced range of motion (Maubies, 2012). Conversely, it proved to be a major concern in stopping traffic on a roadside to change either into just a street or an internal road and also to reverse at an intersection.

The horizontal road curves were some of the most hazardous components of the local road networks, and now the conservation literature has garnered considerable potential. It is projected that even the traffic congestion in the curve range is about 112 to four times faster than irrelevancies, with the much higher point in road accidents at 412, except for Germany (Steyer, et al., 2018). It was also established that around half of the injuries on unassembled regional roads appeared in inclined traffic conditions. This was also observed in the United Kingdom, where, of most accidents on two-lane residential roads, 18% appeared in the curve. Rising rates of 20% among all product liability injuries and 13% of most all accidents developing in rural areas with the horizontal curve were reported in Denmark.

Failure to compensate the road's explanatory parameters, which include traffic conditions, lane number, speed design, horizontal curvatures, and roadside hazards, would indeed be reasonable for other essential associations to be included on the IHSDM, with assumed percentages for crashing nature to the occurrence (Maubies, 2012).

2.6.5 Side Distance

In in-vehicle protection, their viewing distance, which focuses on both vertical and horizontal orientations, is still of major importance. "Herschel stated out one of the most

relevant considerations in planning in road conformations: its distance durations," according to their overview for road design and road safety. Krebs of Contains Low didn't completely approve of that assumption, though he said most of the deaths were considered an indication of knowing the risk (Mehaibes, 2012).

He informed Maneuvers that the majority of local injuries were caused by swerving, even though there were sufficient eligible candidate lengths. Significant findings were confirmed for everyone in Germany, who claimed that almost 21% of all road traffic accidents were linked to past interventions. Such an examination through Rosenberg or Klockner concerning crashes on two-lane local roads in Germany is as follows:

- The danger of many accidents reduces as the distance between them increases.
- A damage risk factor was linked to a diffraction limit of a few more than 100 meters.
- Injury rates were found to be more than 25% lower for sight distances ranging from 100 m to 200 m than for sight lengths of less than 100 m.
- There is an important decrease in traffic accident rates when observing intervals higher than 200m.

2.6.6 Traffic Congestion and Volume

Traffic congestion is often a vehicle situation caused by faster speeds, greater travel time, or intensified standing in the line of traffic. If the road traffic market is saturated and the movement of cars affects the speed of the vehicle, the packet losses will increase. Effective weekend control of road traffic vehicles is the main justification for extended durations of traffic congestion around the country. According to Texas Permits, to produce some part of all this functionality in multimedia or digital clones Since representations were provided, private educational use can be granted against payment. for financial or income reasons, as well as which backups Redacting the advertising of platforms by disbursing through rankings provides strategic forewarning. provisions and a penalty. While progress mitigated the effects, the phenomenon of traffic congestion influenced both developing economies to varying degrees. Prevalence in important congestion areas is frequently a standard occurrence through road systems in so many regional regions around the world; some respond to even a dangerous traffic congestion field with one in which a range of roads comply, and even a significant amount of traffic congestion is required to be managed by that standard practice in traffic congestion (Vipin & Sharma, 2012). Traffic

average tag volume (TATV) is the ideal value for items that always, across a period, flow around a research institute. The difference will be a microsecond, with 10 minute or hourly guests dictating everything. Increasing the level of traffic has consistently adversely affected road traffic accidents. When the number of accidents on an interstate is reduced, it increases the likelihood of issues within that traffic stream (Maubies, 2012). Considering significant annual traffic average volume (ATAV) estimates as the template, suggested that as the number of vehicles improves around a segment, so should the number of traffic accidents. People who said that the segment makes cars more likely to be damaged, more likely to be damaged in the future, and more likely to have fights said that.

2.7 Social-Economic and Impacts of Traffic Road Accidents

2.7.1 Social Impacts of Traffic Road Accidents

A. Brain damage for psychology

Any traffic accident generates that bitter sentiment of indignation from both the casualties and the rescue workers, specifically once the collisions occur as a consequence of something like the vehicle's irresponsibility. In general, the victim(s) develops several panic disorders as a result of the damage done or by accident after only a few decades of that incident. Such offenders may indeed be worried about losing either their workplace or livelihood as a result of any damage. While other victims attempt driving suicide while reading about the short-term consequences of traffic accidents, such as debilitating disabilities or hand caps, certain victims attempt riding suicide because they are aware of both the long-term consequences of such collisions.

B. Pains and stress of the body

Often, patients who are already suffering from major injuries enjoy extreme suffering, realizing that they could have died in the explosion. According to some of the victims who were consulted, who related to developing peripheral neuropathy that was becoming very overwhelming, another admitted, "I believed it was similar to continuing to pay my same breath more than ever before the point in the previous two years." In terms of innovation damage, the adverse social impact isn't constrained to the families of the victims, but also workmates within desks, schools, companies, even at the global level.

C. Exhaustion of the popular character

Existences are destroyed whenever a severe traffic accident happens. Contact members such as parents, siblings, and brothers, as well as siblings who were expected to experience the significant death of a friend member, carried the victim(s) from their homes. Each hazard was treated with kindness or affection, though learners knew that they were either confused or damaged even before forever. Even then, it's also important to base a decision on all of those injuries. Consequently, no amount of cash might be strong enough to lift any dead person to their graves. That explains why road incidents are quite a significant risk in people's lives or thoughts.

D. Damage of offender's care and devotion

This type of social effect is closely related to the depuration of loved life or of a very active member of that family. When a victim(s) of a traffic accident is hospitalized or dies, all the friends, family, and admirers who loved those victims are shocked and deeply saddened by the events. In general, once the community of its traffic accident victim(s) has recovered from the pain of the incident as well as the death of a close relative, the crushing defeat of existence, which reflected comfort and excitement, appears irreparable.

2.7.2 Economic Impacts of Traffic Road Accidents

The actual level of road traffic accidents is having a significant impact on several nations' monetary backing. According to the World Health Organization (WHO), the cost of road traffic accidents is expected to be close to 1% of GNP due to dramatic reductions in barriers, 1.5 percent in intermediate regions, and 2% in elevated parts of the world (WHO, 2004). Total economic impacts of major road traffic accidents have been reported to be US \$520 billion, including impacts for low-income countries projected to be US 65 billion, well above the average annual amounts of foreign assistance obtained. Moreover, expense discrepancies vary depending on the location (Naci, et al., 2010). Those main risk aspects for road traffic accidents may differ from one study to another, but by using a people management system, the value from traffic accidents may well be composed of three main parts: human effects, property damage expenses, and cumulative accident charges. It's a living creature. Casualties Expenses through reduction with product deaths, the risk of performance loss, loss of product disability, health care costs, expenses associated with damage to individuals and society, but also service expenses. The risk associated with properties, traffic management, trucks, especially to the exclusion, and even risks to nonvehicle properties, are factors that can only be recognized. Expenses incurred as a

result of major collisions, law enforcement, journey time penalties, or compensation enforcement (Ghadi & Török, 2018).

Table 3.

The Human Resource Plan to Overcome Traffic Accident Damages.

Human cost	Property cost of	Cost of administrative Damages
Hospital and cost	Property damage costs	Cost administrative
Lost output	Vehicle damage	Insurance administrative costs
Absence from the market	Surrounding property damage	Police administrative costs
Lost output due to the disability	Administrative	Emergency medical costs Permanent

A. Human expenditure

Most road traffic accident victims suffer mainly from insufficient funding and often a lack of work opportunities. The failure to seek happiness and hobbies such as recreation and even entertainment is also included in the impact (Tánczos, et al., 2018). In addition, there are enormous costs and risks in the disciplined processes of traffic accident patients in the form of a decline in infant mortality and potential lost income. Furthermore, the defendant has a cost burden, specifically when casualties lose or decrease their income (Ghadi & Tánczos, 2018). There will be indirect damage due to road traffic incidents. Although its individuals struggle with post-traumatic stress disorder (PTSD), as opposed to the other individuals through PTDS, they have a problem with their jobs. Extended working declines are also common among victims (Gorea, 2016). Some studies, however, attempt to estimate these costs by surveying people based on their knowledge of the subject (Ghadi & Török, 2018).

1: Hospitalization and medical expenses

The cost of care is different in each country. Because men and younger people are intimately concerned about road traffic accidents, the cost of hospitalization has also been measured at 1,300 dollars on average. The economic impact of road traffic accidents in Bangladesh accounted for 1 to 2 percent of the region's total GDP. For the explanation that almost all of the Bangladesh perpetrators don't have medical insurance, In India, even some abusers spend more than Rs. 5,000, though the majority of spending is 10 to 11 times the monthly income, and only 3.5 percent of victims have medical insurance. Therefore, the loss is approximately 20 billion dollars each year. In 2010, it was announced that every state in the USA paid \$836 for injuries, which is nearly 1.72 percent of the GDP of the state. In the European Union, there will be 1.3 million injuries and 40,000 deaths per year, resulting in 200 billion losses equal to just 2% of GDP (Gorea, 2016).

The estimated cost of healthcare hospitalization and burying accidents for traffic accidents is colossal. The consistence of expenditures on medical services, hospitalization, and burial of the deceased in road traffic accidents suggests an economic impact on the sample population (Orowhigo, 2017). The complete and total care of casualties is referred to as the medical cost. The sum of studies is split into decent salaries, middle-income, and lowincome hospitals, which also rely on the charges of each individual. Such expenditures can be calculated as the average of a different number of communities. The cost of each accident can also be established by evaluating and interviewing hospitals. Except for the evacuation and first aid costs as well as the death burial, the unit health cost of each casualty is estimated to be almost 1155 dollars by picking random samples (Tánczos, et al., 2018).

2: lost production costs

Traffic accidents and collisions impact the community in the most effective manner possible. The active working-age population engages in travel more often than the elderly (above 70 years). The Organization for Economic Cooperation and Development (OECD) identified vehicle riders as being compensated for the majority of traffic accident victims (damage and deaths) in developing countries in 1993, while passengers and non-other motor vehicle occupants of the same age are included. While these are the most engaged and efficient community members, silt is recognized in the creation of productivity or employment as an element of the economic consequences of road traffic accidents on the

population. Once vehicle accidents arise, domestic and international infrastructure are very often seriously damaged, and people get bored with stable occupations. As a result, the defendants destroy any employees, including racial equality (Orowhigo, 2017). However, the maximum subscription-based performance of the victims had been determined according to their routine work before they were injured. The volume of revenue varies in each case, depending upon the occupation of the offender and the severity of the accident. According to Chaudhry and Iqbal (2018), the lost output could be estimated by looking at the victim's wage and how long they lost information in the accident, as well as how long they learned about their injuries and how long they had been training. Loss of output means the loss of productivity of someone who has been injured in a road crash accident. Loss performances are the results of lost work hours as a result of accidents that occur during the year, or as a result of the prospect of deaths and income support injury. Even though it is an indication of the economic reduction of competitive resources, it may well be permanent or persistent (Ghadi & Táncoz, 2018).

B. Costs on economic losses

Traffic accidents, vehicle-on-roadside structure collisions, and vehicle-to-driver involvement can all be classified into three major categories based on the type of road traffic collision. The damage to the property involved the first two forms of property damage and the surrounding area. Vehicle damage, however, involves damage to the vehicle suffered in a traffic accident. While damage to roadside furniture includes roadside items, which could include road barriers or curbstones, footpaths, bridges, adjacent road walls, power lines, and checkpoints. Only by estimating the necessary value to restore each one of these affected properties will the exact price of these substances be evaluated (Chaudhry & Iqbal, 2018).

1: Vehicles colliding with others

Vehicles involved in a traffic accident are hit by three main cost items: the cost of rebuilding the vehicle, the cost of holding the vehicle, and also the overall cost of an accident. And although the cost of cleaning the car is significantly connected to the damage to the property, it mostly depends on the quality of cars involved in the collisions, the seriousness of the damage, and the locations of the repair facilities. And though vehicle suspension would be the most effort involved due to traffic limitations, the other most

influential forms of loss are commercial and social vehicles, including buses, taxis, and trucks (Chaudhry & Iqbal, 2018).

2: Collisions of cars for roadside furniture

The car to just the collision of roadside furniture primarily included the relevant products to just the crash site, along with cars, products, residences, roads, economic trees, and farms centered at the collision position. And according to the economic dimension, this accident form is still the most damaging, though it routinely causes productivity losses in goods and facilities (Chaudhry & Iqbal, 2018). It is established that road and cultivation damage are probably involved in road traffic accidents. This is because, except for damage to the property affected by accidents, the Vehicles often knock off the road and into houses, stores, and many other roadside properties, but the vehicles involved in numerous accidents in many other situations often compete off another road into the roadside area, destroying farms and other economic resources along the road. It is normal to cause the loss of costly items like this risky form of accident, and similarly, loss of cash, including precious certificates such as records. Even so, it's been found that causing problems with roadside resources will now be bad for the people who live there (Orowhigo & Planning, 2017).

3. Offender Collision Vehicles

Which sort of incident has been popular specifically in Mogadishu when vehicle loads distributing seeds of flower ingredients from either the middle of the state in Mogadishu became entangled in such an RTA on Mogadishu Lane, causing the deaths of very many crop packets with garden products. Huge vehicles containing sugary beverages are often included in all these road traffic accidents, and both the product substance and the plastic bags are shattered. Bad roads and the RTA have added unnecessary costs to the region, which has led to more vehicle maintenance costs (Chaudhry, 2018).

C. Cost of administrative

Such health costs resulting from an accident involving just about any type of crash, including all the equipment, such as people and property. As shown in the below table, operating expenses can be subdivided into three major components (Iqbal, et al., 2018).

Figure 2.

Administrative Cost of Traffic Road Accidents. (Iqbal, 2018)



1. Administrative overhead by Police

These are associated traffic accident events that are covered by the police department. Since the operating income of the police service is also a very quickly increasing process, it can be assessed by measuring the time the organization costs on a specific crime in comparison to the additional accidents. For any crash of any magnitude, the time spent by the enforcement departments is expected to do the same. The administration cost is evaluated by promoting the overvalued by the personnel when resolving the case, as it's the function of the institution to follow up on a few situations. The time is accumulated by evaluating the individual's annual income and assessing it for the given timeframe spent in various scenarios, independently of the complexity of the situation. As always, police cost insurance is especially relevant to police conduct for any alleged incidents and has an expense in all areas. There are a lot of things that can be done to figure out how much it will cost to do things like talk to traffic cops, law enforcement officers, and look at annual injury reports throughout the year.

2. Insurance and Emergency costs

In particular, the amount of compensation involved insurance for accidents received by the police insurance information. Safety protection providers that document he accused's insurance documents reveal their settlement with the company's complaint departments

for that important observation against several particular natures of the accident, considering the impacts of emergency care and the effect of reconstruction if the offender is always in existence (Chaudhry & Iqbal, 2018). The mitigation of charges is normally provided with both the operational activities as well as the purposefulness of the injury providers. In the years 2011 and 2012, it was observed that between 185 and 275 dollars, respectively, the units of insurance costs were distributed. It doesn't stop there, though. All the other secondary aspects of administration, like court costs, are also taken into account (Ghadi & Tanzu, 2018).

Effectively, the expenditure of emergency medication and education is assumed to be in two parts. The services are monetized by the passing of time consumed by this, and the service providers, when struggling with the transaction, spend quality time performing the situations. In certain cases, the casualties don't just go to the ambulance, where first aid can be given and the paramedics, or indeed, the emergency services, can be called eventually. In instances such as all these marginal incidents, the cost of ambulances and paramedic staff care is expected to be reduced, with the suspect's monthly paycheck being cut in half. The value of its reduction is also estimated by the total number of situations that could result from the shift (Chaudhry & Iqbal, 2018).

CHAPTER 3

Research Methodology

3.1 Design of Study

This chapter focuses on details and the descriptions of the same methodology that was utilized in the research. which provides information regarding the method of data collection, and the data gathering procedure, including the date predictive analytics of traffic road accidents. So many concerns or indications involving driver behaviors and attitudes have been contained mostly in the purpose of the study, considering different data sets struggling only with the accident situations in Somalia and around the world, which will need to be properly determined to provide necessary measures to minimize road accidents. The focus of this chapter is, therefore, to explain the research technique of collecting information for the development of attention to the research methodology, survey and sampling techniques, data analysis, and gathering procedures required.

Figure 3.

Diagram of Methodology

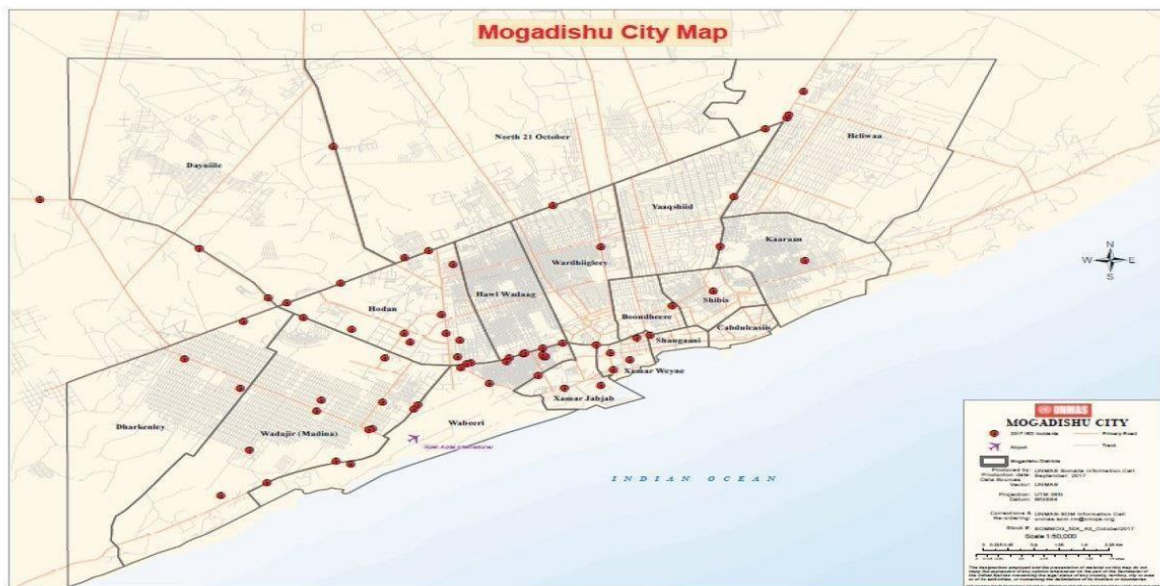


3.2 Study Area

This study was funded in Mogadishu. This area was chosen deliberately, primarily for three reasons. Firstly, in previous seasons, Mogadishu City was also estimated to always have a higher number of traffic accidents than in every Somali region. Second, Mogadishu's residential and manufacturing city is business-wise, indicating that it has attracted a large number of people from all over the world. And thirdly, the researcher knows much about the roads of the city.

Figure 4.

Mogadishu Google Map



3.3 Research Design

The design of the study is defined by the number of aspects that vaguely allude to the change procedure that examines exclusively producing a specific piece of information and providing methods and systems that could also be incorporated. It provides excellent guidelines for aggregation of the material again. For design, the analysis structure includes unlimited specifications, again for a simple statement of facts. As a precursor to collecting and analyzing data, research design becomes generally the process or expectations for work at this stage. In terms of the fact that estimation progressed into other futures to display a reasonable understanding and specific consideration for road traffic accidents in

Mogadishu, qualitative approaches have been used to properly determine the targets. The research project even used quantitative and qualitative guidelines to receive all the required information. The qualitative research approach was also used to give supporting information on what would be extracted by the detailed interviews that adapted to concretely reaching conclusions by using tables and volumes to express them. A comprehensive interview was conducted that requires you to collect data from accepted residence establishments in the city of Mogadishu. A review of other information and an explanation of how controlled experiments on something else led to a well-documented road traffic accident have been used to add to the information that has already been gathered.

3.4 Target Population and Area

A researcher formulated a collection for analysis from either a population, which is a wide-ranging collection with several events, an investigator would like to make generalizations about research based on a survey collected from the population on a range of alternative land uses, items, or experiences. The target population was drivers, pedestrians, and road accident victims in Mogadishu, as well as business owners and experts. Those categories were selected because they were rich in information about road traffic accidents in Mogadishu city. The categories will be selected from both the public and private sectors. After the sampling method was used in the analysis, each category of respondents was allocated a specific number of respondents from the study population.

3.5 Sampling and sample size procedures

This concept for analyzing data from a lot of different people is called a sample. The sampling procedure is now the approach to obtaining data from the respondents. The sampling element collection points to either the study framework. There are many methodologies used for sampling. This analysis utilizes the cluster method of sampling. This indicates that within a given area, the individuals involved have similar characteristics. The procedure was used to produce a representative sample of the heterogeneous population. It means that the population was grouped into several groups of heterogeneous to allow the researcher to increase the pressure and provide the best adjustment for sample generalization. There are common characteristics among the people who fall into these heterogeneous categories, but they have different professions and backgrounds. As it is known that the sampling technique was used, the sampling frame

was the population living and working in the city of Mogadishu. A few institutions were chosen for this reason, in which their workers were given copies of this report. Different categories were chosen from the population, such as drivers, pedestrians, and road accident victims in Mogadishu, as well as business owners and experts, with the same sampling. Because of their rich knowledge of categories based on road traffic accidents in Mogadishu town, these categories were chosen. And that is demonstrated by the sampling methods used in studies. See Table 4.

Table 4.

Respondent's Category & Sampling Method

No	Respondent's category	No of respondents	Sampling method	Data collection method
1	Drivers	95	Purposive sampling	Questionnaire & interview
2	Pedestrians	125	Purposive sampling	Questionnaire & interview
3	Victims	70	Purposive sampling	Questionnaire & interview
4	Business owners	64	Purposive sampling	Questionnaire & interview
5	Experts	30	Purposive sampling	Interview
	Total	384		

3.6 Data Collection and Methods

To collect knowledge and information, various methods are also used. To allow for conditions such as those of the study's costs and resources on one hand, or the respondents' time, on the other hand, provided by data analysis procedures with interviews, questionnaires, and word processing, individuals accept various types of information, including records in the study, basic information, and secondary sources, in several contexts. Then follow the method properties and even the different levels of information.

3.6.1 Primary Data

A variety of approaches are already used to obtain a survey method. These are just the kinds of facts obtained from the field of evaluation to respond to the research questions. In an attempt to meet a research goal, analysis specialists once again gathered community information. Inference, indirect communication with informants, and even individual questionnaires were used to collect data. Questionnaires and interviews, among some other techniques, can also be used to procure details. After all, existing evaluation measures along with assessment, questionnaire, and interview are now used to find out the results. Survey questionnaires were being used to find out the results of this study.

3.6.2 Secondary Data

The concept of "secondary data" refers to information that has already been publicly revealed. The secondary data from this analysis was therefore collected in the field from the relevant papers, journals, and books. In addition, related review literature was consulted from various books, proceedings, papers, publications by international organizations, and Internet waves. While the secondary data is mainly focused on the reading and analysis of relevant papers and books, some receive information about this research subject from websites and other accessible data sources. The literature would include a great number of secondary papers and books as well as other library resources, such as photographs, maps, and publications of some case studies. Both governments and non-governmental organizations create the necessity. Furthermore, administrators may be included.

3.7 Date Collection and Techniques

The common research methods used to collect data were direct observation, the questionnaire method, and individual interviews, and those are unique when collecting primary data. Interviews and questionnaires were also used in this research.

3.7.1 Reliability

Reliability analysis was conducted using SPSS to evaluate the reliability of the questionnaire's findings. The Cronbach alpha reliabilities of every aspect have been examined, and the findings have been: primary contributory elements of accidents 0.869, economic repercussions 0.914, and eliminating the problem of traffic accidents 0.891, ranked from highest to lowest. The Cronbach Alpha was 0.891 for the original

questionnaire, which included 30 items. According to (George & Mallery, 2003), their findings on Cronbach alpha were exceptional if it is .90 or higher; good if it is .80 or higher; acceptable if it is between .70 and .80; doubtful if it is between .60 and .70; poor if it is between .50 and .60; and unsatisfactory if it is below .50. My dimensions' Cronbach's alpha reliability is within acceptable levels for data analysis. These questions were adopted in a diversity of ways and are included in Table 5.

Table 5.

Questionnaire Constructs and Reliability Test

Constructs	Number Items	Cronbach Alpha:
factors of the accidents	15	.891
Economic impacts	8	.914
Eliminate of Traffic	7	.891
Total	30	.891

3.7.2 Personal Interview

This procedure is included in this research to collect data on the respondent's opinions on either the subject or something I immediately thought of some follow-up questions. Cars, visitors, and road accident practitioners were evaluated in Mogadishu. Each interaction was planned and semi-structured during the research. Which participant's requests, words, or directions were set or related in the survey method? The developed interviewer provided issues that had been developed long in advance and to which the respondent would intend to relate correctly. Within that analysis, the respondent has been offered a bunch of references to fill out. There is no harm in asking more about the faces of various employees, particularly pedestrians, commuters, and several other analysts. These methods were being used, and we encouraged the researcher to collect content and communicate thoughts about both the problems caused by traffic accidents and how they affect Mogadishu's economic growth.

3.7.3 Questionnaire

During the evaluation, the investigator distributed questionnaires and the subjects were allowed to answer them freely under its observation. Restricted and tightly closed

questionnaire surveys were just the two most common ways. The intention of someone using structured questionnaires should be to get a quick, succinct, often black-and-white response or response. Above anything else, this approach was also said to be effective and productive of analysis, even though it was accessible and independent of response bias, and respondents were accountable for providing detailed responses. The aim of someone using tightly closed questioning would have been to empower respondents to answer themselves completely. In that same case, the investigator is now in a position to select another accurate and valid approach for both the primary and secondary analyses.

3.8 Planning of Data Analysis

Data analysis entails the measurement of such factors as well as the analysis of only relationship trends that always occur in some documentation organizations. The details collected by the researcher were also used. The questionnaire survey was again placed into incredible analysis technique and, afterward, as explained previously, this analysis included descriptive and inferential statistics. The use of percentages to present the information of the respondents was involved. A method of qualitative research is also used to present the data and support some of the survey results here requested.

CHAPTER 4

Results Discussion

4.1 Introduction

The findings are also studied in this chapter from the graphs and tables to come up with recommendations and conclusions, which are further explored in the final chapter. So, when COVID-19 was put into the SBSS software, the field data was used to answer online surveys.

4.2 Demographic data of research participants

The factors were used to collect the demographic information for the study. The aim was to include all the respondents with consideration of gender, who were asked to classify themselves as either females or males. Out of 384 respondents, 92, or 24%, were female, compared to 292 males, or 76% of the total sample size. The age of respondents in this research could be classified into six groups. Out of 384 respondents, 12 (3.1%) were less than 18 years old; 138 (35.9%) were between 18-25 years old; 118 (30.7%) were between 26-35; 75 (19.5%) were between 36-40 years old; 30 (7.8%) were between 41-50 years old, and 2 (0.5%) were over 50 years old. The research findings showed that out of 384 respondents, 7 (1.8%) of the respondents were non-educational background; 10 (2.6%) of the respondents had a diploma; 88 (22.9%) of the respondents were bachelor; 183 (47.7%) were master's degree; and the last respondents (25%). According to the research findings, 81 (21.1%) of the 384 respondents were employed; 87 (22.7%) were self-employed; 88 (22.9%) were unemployed; and the remaining 128 (33.3%) were students, as shown in Table 6.

Table 6.
Demographic Data of Research Participants

Demographic Variable	Point A	Number	Percentage
Gender	Male	292	76
	Female	92	24
	Total	384	100
Age	Less than 18	12	31.1
	19-25	138	35.9
	26-35	118	30.7
	36-40	75	19.5
	41-50	39	10.2
Level of study	More than 51	2	5
	Total	384	100
Type of employment	Never	7	1.8
	Diploma	10	2.6
	Undergraduate	88	22.9
	Master	183	47.7
	PhD	96	25
	Total	384	100
	Employed	81	21.1
	Self-Employee	87	22.7
	Employed	88	22.9
	Student	128	33.3
	Total	384	100

4.3 level of road traffic accidents in Mogadishu

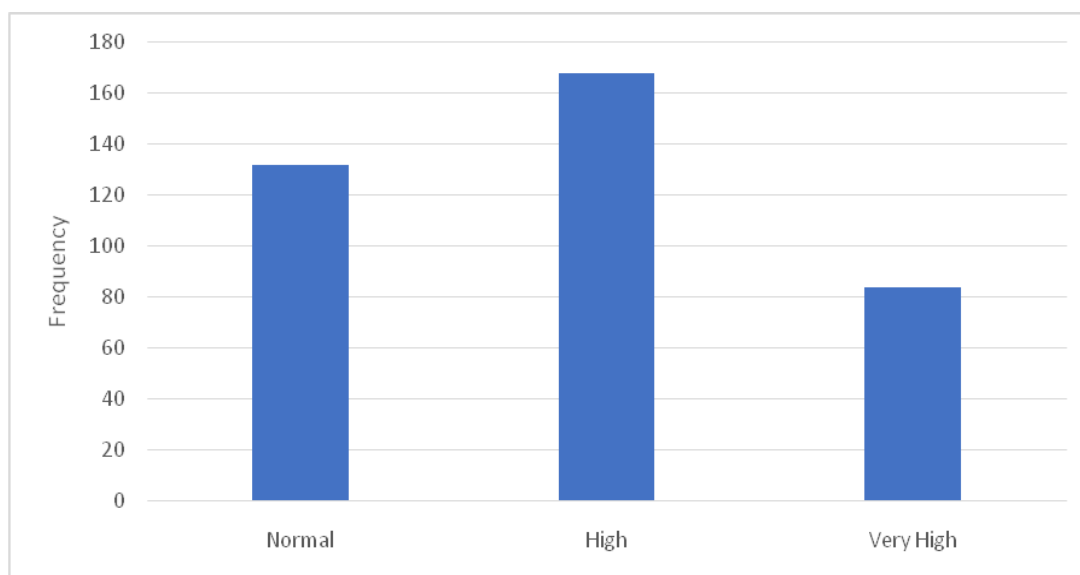
The research findings showed that out of 384, 132 (34.4%) of these respondents said that the level of road traffic accidents is normal; 168 (43.8%) of these respondents said that the level of accidents is high, and 84 (21.9%) of these respondents said that the level of road traffic accidents is very high. See Table 7 and Figure 5.

Table 7.

Level of Road Traffic Accidents in Mogadishu.

Level of accidents	Frequency	Percent (%)
Normal	132	34.4
High	168	43.8
Very High	84	21.9
Total	384	100

Figure 5.

Level of road traffic accidents in Mogadishu.**4.4 Kind of accidents which is always happening in Mogadishu**

The research findings showed that, out of 384, 100 (26%) of the respondents said head on collision type of accident happens in Mogadishu and that is the majority; 99 (25.8%) of the respondents said that single car accident; 89 (23.2%) of the respondents said that multiple accidents; 60 (15.6%) of the respondents said vehicle rollover type of accident always happens in Mogadishu; and 36 (9.4%) of the respondents said that all of these kinds of accidents always happen in Mogadishu. See Table 8 and Figure 6.

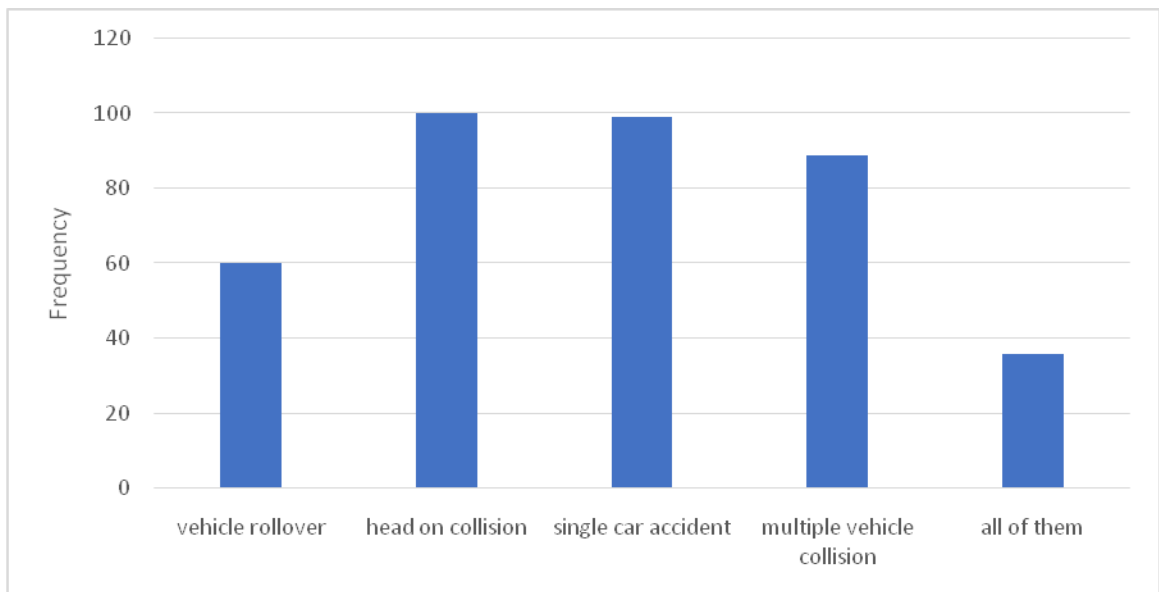
Table 8.

Kind of accidents which is always happening in Mogadishu.

Kind of accidents	Frequency	Percent (%)
vehicle rollover	60	15.6
head-on collision	100	26.0
single-car accident	99	25.8
multiple vehicle collision	89	23.2
all of them	36	9.4
Total	384	100

Figure 6.

Kind of Accidents Which is Always Happening in Mogadishu



4.5 Type of vehicle has always involved the accidents in Mogadishu

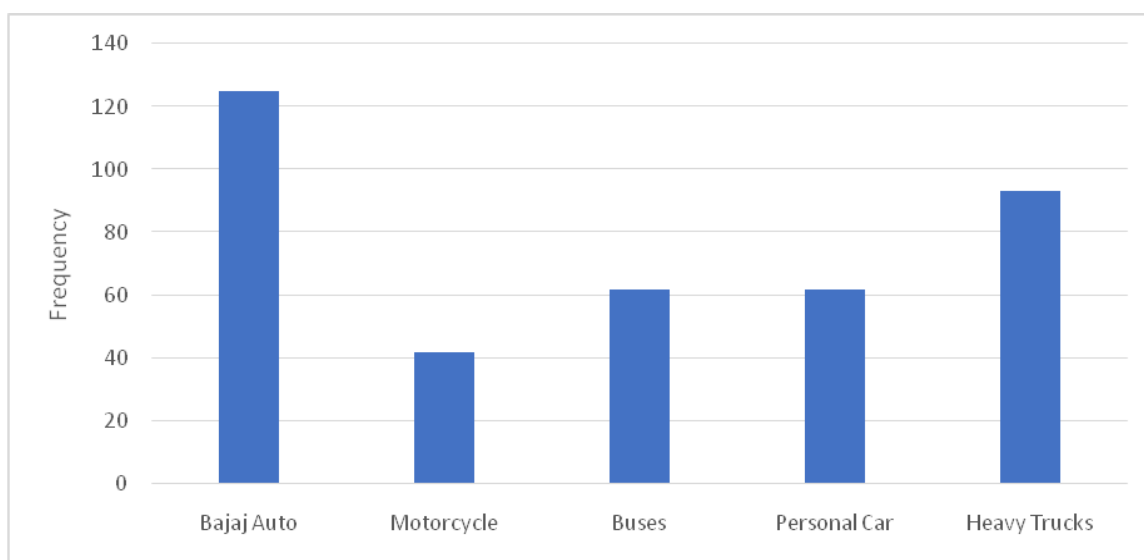
The research findings showed that out of 384, 125 (32.6%) of these respondents said that the type of vehicle which is always involved in accidents is a Bajaj Auto, and that is the majority; 42 (10.9%) of these respondents said that the type of vehicle is motorcycles; 62 (16.1%) of these respondents said that the type of vehicle which is always involved is buses; 62 (16.1%) of these respondents said that personal cars; 93 (24.4%) of these respondents said that heavy trucks. See Table 9 and Figure 7.

Table 9.

Type of Vehicle has Always Involved the Accidents in Mogadishu

Type of vehicle	Frequency	Percent (%)
Bajaj Auto	125	32.6
Motorcycle	42	10.9
Buses	62	16.1
Personal Car	62	16.1
Heavy Trucks	93	24.2
Total	384	100

Figure 7.

Type of Vehicle has Always Involved the Accidents in Mogadishu

4.6 Responsible members of accidents in Mogadishu

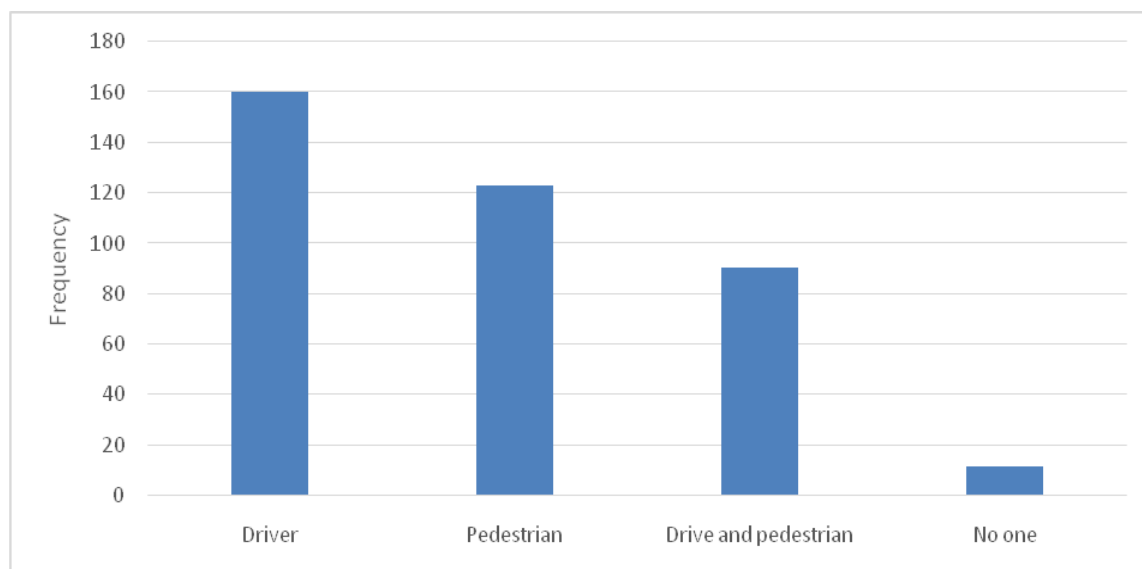
The research findings showed that out of 384,160 (41.7%) of these respondents said that the drivers are responsible for the road traffic accidents in Mogadishu that are the majority; 123 (32%) said that the pedestrians are responsible for the road traffic accidents in Mogadishu, Somalia; 90 (23.4%) of these respondents said that the drivers and pedestrians are responsible for the road traffic accidents in Mogadishu, Somalia; 11 (2.9%) of these respondents said that none of them. See Table 10 and Figure 8.

Table 10.

Responsible Members of Accidents in Mogadishu.

Responsible	Frequency	Percent (%)
Driver	160	41.7
Pedestrian	123	32.0
Drive and pedestrian	90	23.4
No one	11	2.9
Total	384	100

Figure 8.

Responsible Members of Accidents in Mogadishu.**4.7 Time which most traffic accidents take place in Mogadishu**

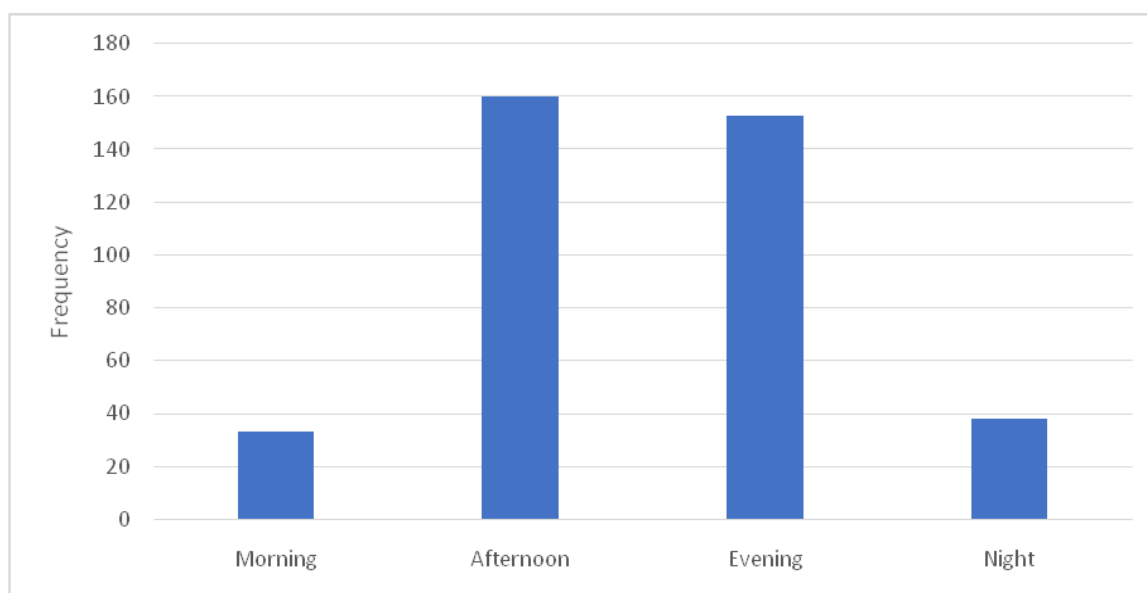
The research findings showed that out of 384,33 (8.6%) of these respondents, the time at which most accidents take place in Mogadishu is the morning and that is the majority; 160 (41.7%) of these respondents said it was the afternoon; 153 (39.8%) of these respondents said it was the evening; 38 (9.9%) of these respondents said that it was night time. See Table 11 and Figure 9.

Table 11.

Time which Most Traffic Accidents Take Place in Mogadishu

City or Town	Frequency	Percent (%)
Morning	33	8.6
Afternoon	160	41.7
Evening	153	39.8
Night	38	9.9
Total	384	100

Figure 9.

Time which Most Traffic Accidents Take Place in Mogadishu

4.8 Locations where traffic accidents are high in Mogadishu

The research findings showed that out of 384 respondents, 43 (11.2%) of these respondents said that Dabka-Taleex junctions are locations where road traffic accidents happen; Based on their experience, 92 (24%) of these respondents said that BakaroHowl wading junctions are locations where road traffic accidents are common. Based on their experience, 108 (28.1%) of these respondents said that Zoobe–KM4 junctions are locations where road traffic accidents are common. 114 (29.7%) of these respondents said that Dabka and Tar

Buunka-Taleex are the locations where road traffic accidents are high based on their experience, and that is the majority; 13 (3.4%) of these respondents said that SancaJarjiino junction junctions are the locations where road traffic accidents are high based on their experience; 14 (3.6%) of these respondents said that Km4Taleexjunction junctions are the locations where road traffic accidents are highest based on their experience. See Table 12 and Figures 10.

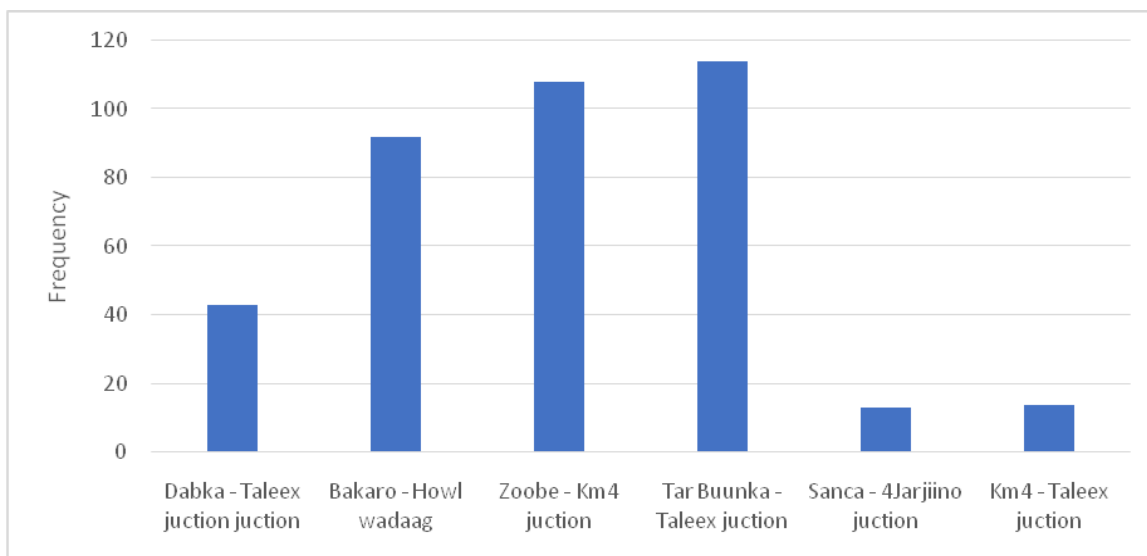
Table 12.

Locations Where Traffic Accidents are High in Mogadishu

Locations	Frequency	Percent (%)
Dabka - Taleexjunction junction	43	11.2
Bakaro - Howl wadaag	92	24.0
Zoobe - Km4 junction	108	28.1
Tar Buunka – Taleexjunction	114	29.7
Sanca - 4Jarjiino junction	13	3.4
Km4 – Taleexjunction	14	3.6
Total	384	100

Figure 10.

Locations Where Traffic Accidents are High in Mogadishu

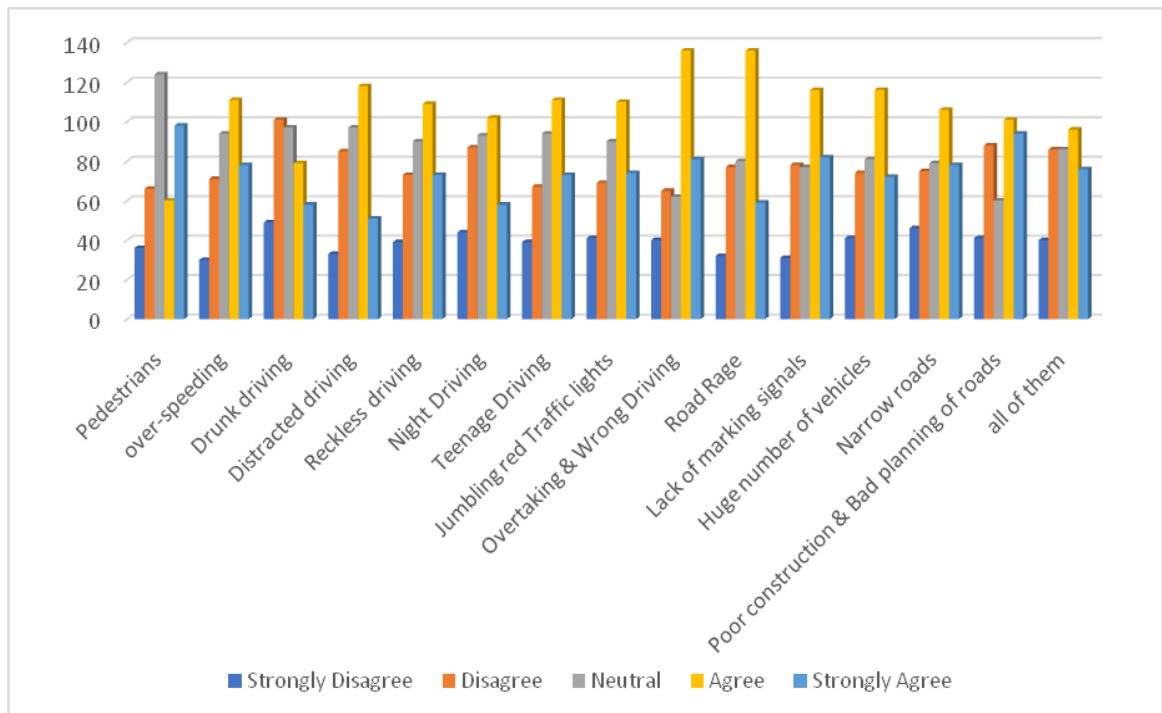


4.9 Contributory factors of road traffic accidents in Mogadishu Somalia

When respondents were asked about the contributing factors to road traffic accidents, the research findings revealed Out of 384 respondents, 98 (25.5%) of these respondents strongly agree that pedestrians are one of the most important elements contributing to road traffic accidents in Mogadishu. 94 (24.5%) of these respondents strongly agree that poor construction and bad planning are contributor factors of road traffic accidents in Mogadishu; 82 (21.3%) of these respondents strongly agree that lack of marking signals is one of the main factors of road traffic accidents in Mogadishu; and this is the majority, indicating that the majority of accidents occur in Mogadishu due to poor road construction and bad road planning. See Figure 11.

Figure 11.

Contributory Factors of Road Traffic Accidents in Mogadishu.



4.10 A mount of police enforcement of traffic laws on the roads

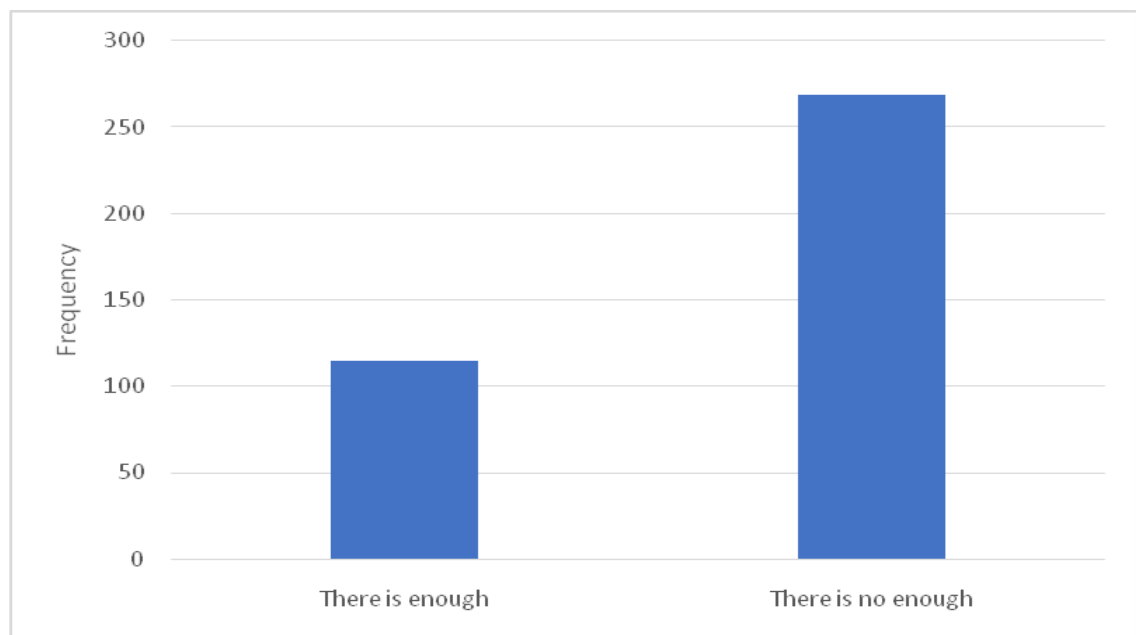
The research findings showed that out of these 384, 115 (29.9%) of these respondents said that there is an adequate number of traffic police on Mogadishu roads, while 269 (70.1%) of these respondents said there is not enough traffic police. Roads are the majority in Mogadishu, and they will always be the majority. See Table 13 and Figure 12.

Table 13.

The Amount of Police Enforcement of Traffic Laws on the Roads

	Frequency	Percent (%)
There is enough	115	29.9
There is not enough	269	70.7
Total	384	100

Figure 12.

The Amount of Police Enforcement of Traffic Laws on the Roads**4.11 Visible improvements made by the police in Mogadishu's road traffic**

The research findings showed that out of 384 respondents, 194 (50.5%) of these respondents said "Yes," which means the police made tangible developments toward the traffic accidents in Mogadishu city, while 190 (49.5%) of these respondents said "No," which means that the police didn't make any tangible developments towards the road traffic accidents in Mogadishu, Somalia. See Table 14 and Figure 13.

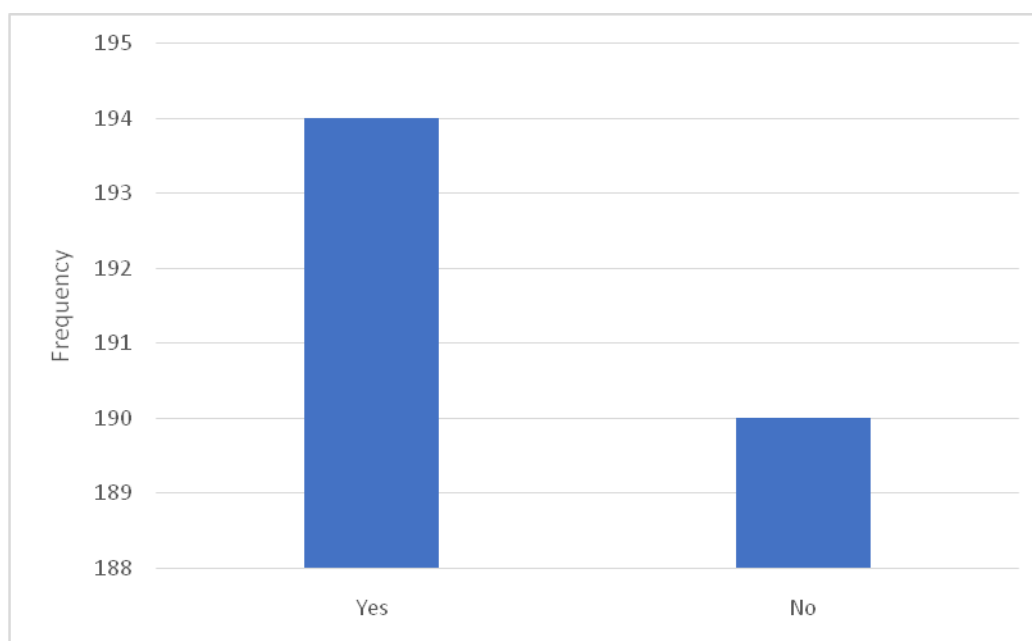
Table 14.

The Developments that the Police Department Made Towards the Road Traffic Accidents

	Frequency	Percentage (%)
Yes	194	50.5
No	190	49.5
Total	384	100.0

Figure 13.

The Developments that the Police Department Made Towards the Road Traffic Accidents



4.12 The accident involved in traffic road accidents in Mogadishu

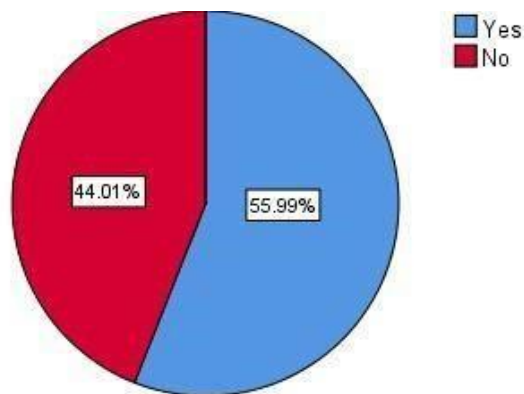
The research findings showed that out of 384 respondents, 215 (56%) of the respondents were involved in road traffic accidents in Mogadishu over the last year, and this is the majority, while only 169 (44% of the respondents were not involved in road traffic accidents in Mogadishu. This shows how being involved in accidents is common in Mogadishu city. See Table 15 and Figure 14.

Table 15.

Accident Involved in Traffic Road Accidents in Mogadishu

	Frequency	Percent (%)
Yes	215	56
No	169	44
Total	384	100

Figure 14.

Accident Involved in Traffic Road Accidents in Mogadishu**4.13 The number that has been involved in the accidents in Mogadishu**

This showed that out of 384 of the respondents who were involved in the road traffic accidents in Mogadishu, 170 (44.3%) of these respondents were involved in the accidents at one time, and that is the majority; 99 (25.8%) of these respondents were involved in the accidents two times; 86 (22.4%) of these respondents were involved in the accidents three times, while 29 (7.6%) of these respondents were involved in the accidents more than three times. See Table 16 and Figure 15.

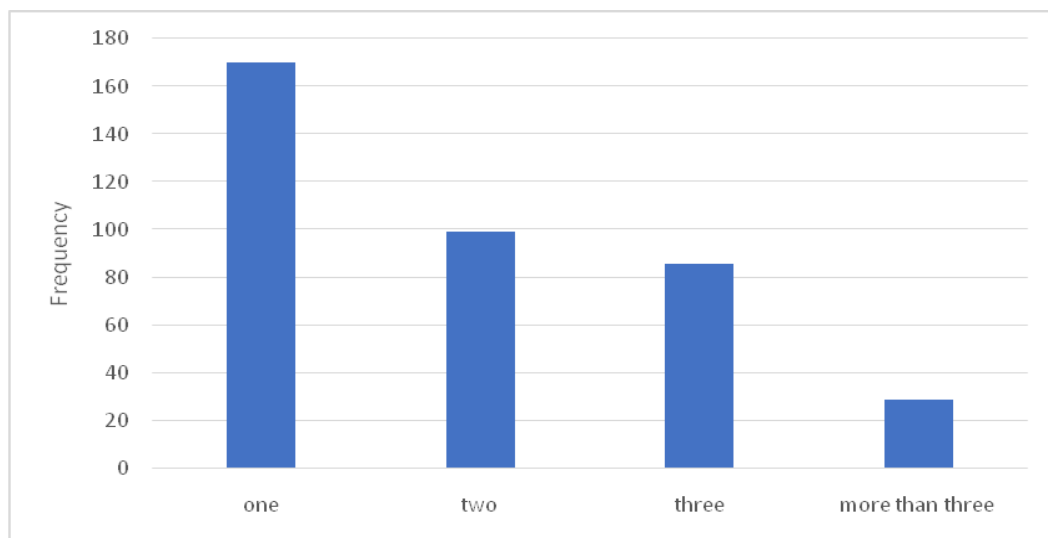
Table 16.

Number that has Been Involved the Accidents in Mogadishu

Number of involved	Frequency	Percent (%)
One	170	44.3
Two	99	25.8
Three	86	22.4
More than three	29	7.6
Total	384	100

Figure 15.

Number that has Been Involved the Accidents in Mogadishu



4.14 Take time off work due to a road traffic accident in Mogadishu.

The findings imply that showed that out of 384 respondents, 261 (68%) of these respondents selected "Yes" and that the majority, 123 (32%), of the respondents selected "No". See Table 17 and Figure 16.

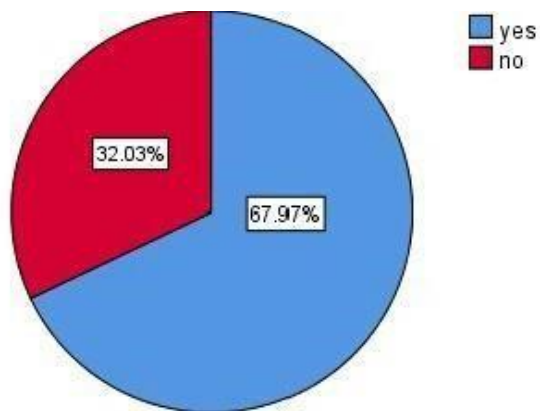
Table 17.

Take off Work Because of a Road Traffic Accident you have been involved in Mogadishu

	Frequency	Percent (%)
Yes	261	68.0
No	123	32.0
Total	384	100

Figure 16.

Take off Work Because of a Road Traffic Accident you have been involved in Mogadishu.



4.15 Vehicle damages of road traffic accidents in Mogadishu

The research showed that 384 (56%) of the respondents selected "Yes" and that is the majority, while 169 (44% of these respondents selected "No". This also implies how vehicle damage is common in Mogadishu, which always affects society socially and economically. Refer Table 18 and Figure 17.

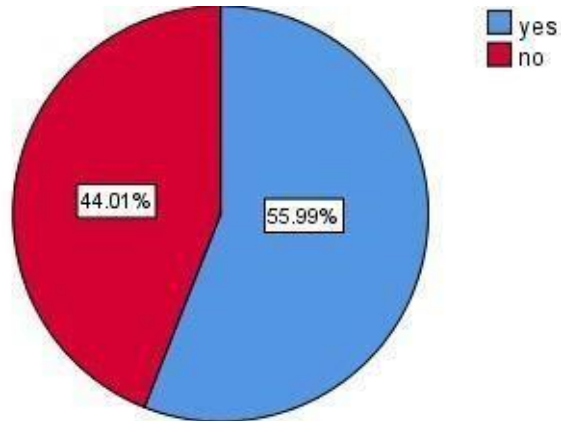
Table 18.

Vehicle Damages of Road Traffic Accidents in Mogadishu.

	Frequency	Percent
Yes	215	56.0
No	169	44
Total	384	100

Figure 17.

Vehicle Damages of Road Traffic Accidents in Mogadishu.



4.16 Vehicle Reparability of road traffic accidents in Mogadishu

This showed that out of 384 of these respondents, 221 (56.7%) of their vehicles were reparable and 163 (42.4%) of their vehicles were unrepeatable. See Table 19 and Figure18.

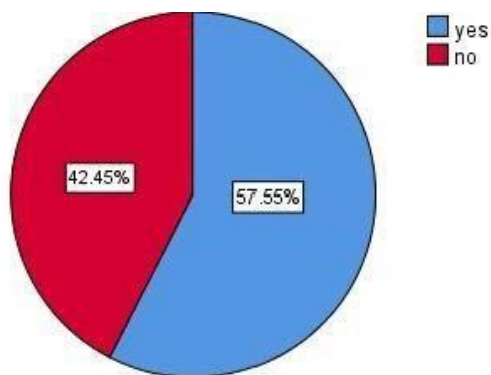
Table 19

Vehicle Reparability of road traffic accidents in Mogadishu

City or Town	Frequency	Percent (%)
Yes	221	57.6
No	163	42.4
Total	384	100

Figure 18.

Vehicle Reparability of road traffic accidents in Mogadishu



4.17 Estimated repair costs for vehicles damaged in a traffic accident

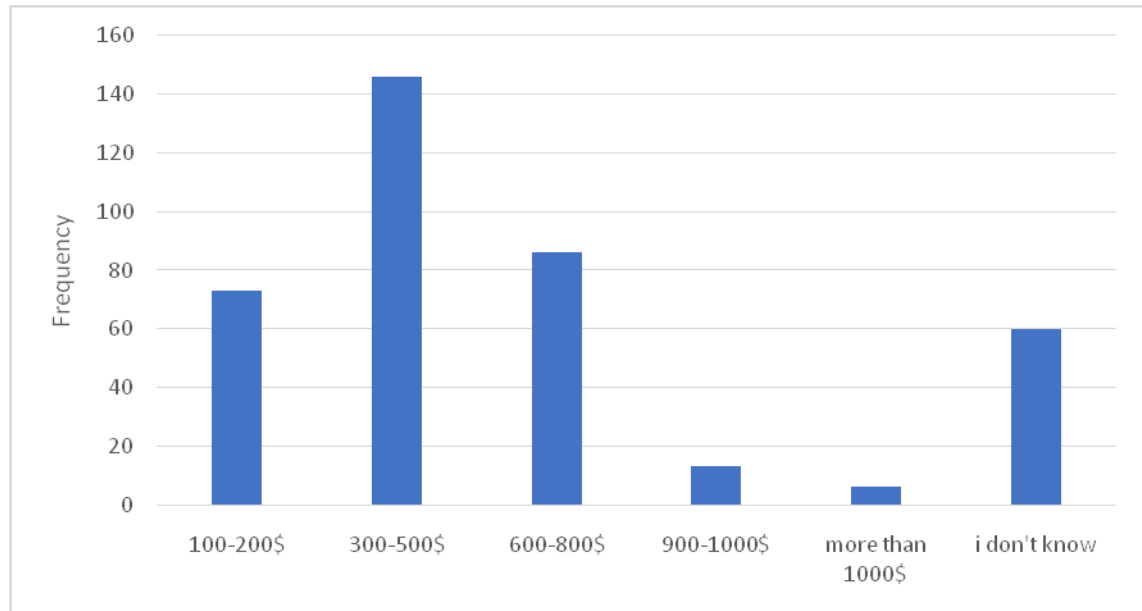
The research findings showed that out of 384, 72 (19%) of these respondents said between 100-200 USD; 146 (38%) of these respondents said between 300-500 USD; 86 (22.34%) of these respondents said that between 600-800 USD; 13 (3.4%) of these respondents said that 900-1000 USD, while 6 (1.6%) of these respondents said that more than 1000 USD, and 60 (15.6%) said we don't know. See Table 20 and Figure 19.

Table 20.

Estimation to Repair the Damaged Vehicle from Road Traffic Accidents in Mogadishu

A mount	Frequency	Percent (%)
100-200\$	73	19.0
300-500\$	146	38
600-800\$	86	22.4
900-1000\$	13	3.4
more than 1000\$	6	1.6
I don't know	60	15.6
Total	384	100

Figure 19.

Estimation to Repair the Damaged Vehicles from Road Traffic Accidents in Mogadishu**4.18 kind of effects which always results in road traffic accidents in Mogadishu**

The research findings showed that out of 384, 119 (31%) of these respondents said that the kinds of impacts that always result from the road traffic accidents in Mogadishu are economic effects; 49 (12.8%) of these respondents said that social effects; 37 (9.5%) of these respondents said property damage; 168 (43.8%) of these respondents said that all of them and that is the majority; while 11 (2.8%) of these respondents said other factors.

See Table 21 and Figure 20.

Table 21.

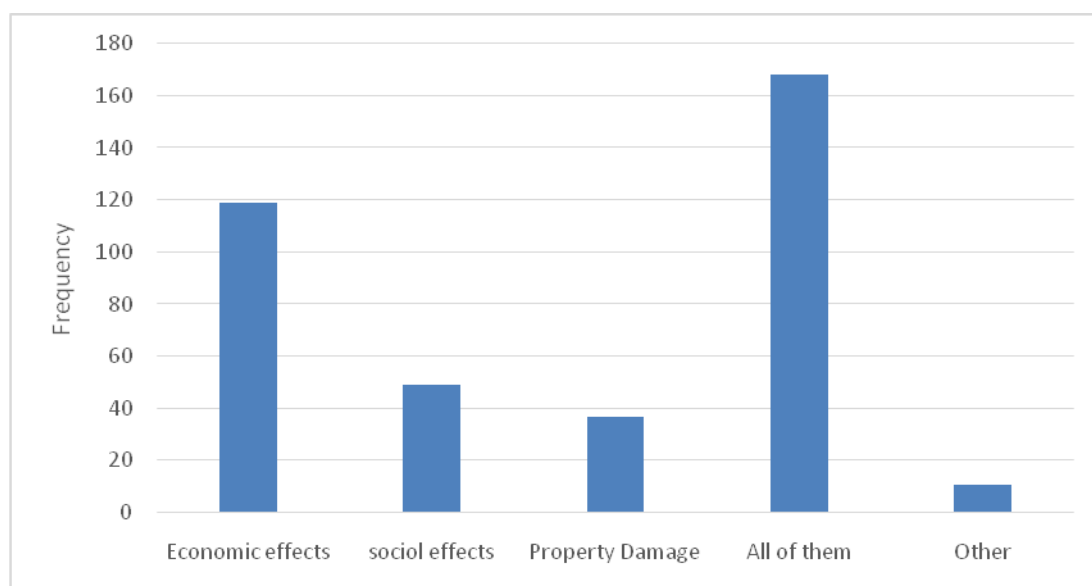
Kind of Effects which Always Result in Road Traffic Accidents in Mogadishu.

Factors	Frequency	Percent (%)
Economic effects	119	31.0
Social effects	49	12.8
Property Damage	37	9.6
All of them	168	43.8
Other	11	2.9

Total 384 100

Figure 20.

Kind of Effects which Always Result in Road Traffic Accidents in Mogadishu.



4.19 Effects of road traffic accidents on Economic growth in Mogadishu

The research findings showed that out of 384 respondents, 114 (29.7%) of these respondents said that the road traffic accidents that are happening in Mogadishu affect the economic growth in a normal way; 181 (47.1%) of these respondents said that the accidents have high effects on the economic growth in Mogadishu, Somalia, and that is the majority; while 89 (23.2%) of these respondents said that the road traffic accidents have very affected the economic growth in Mogadishu. See Table 22 and Figure 21.

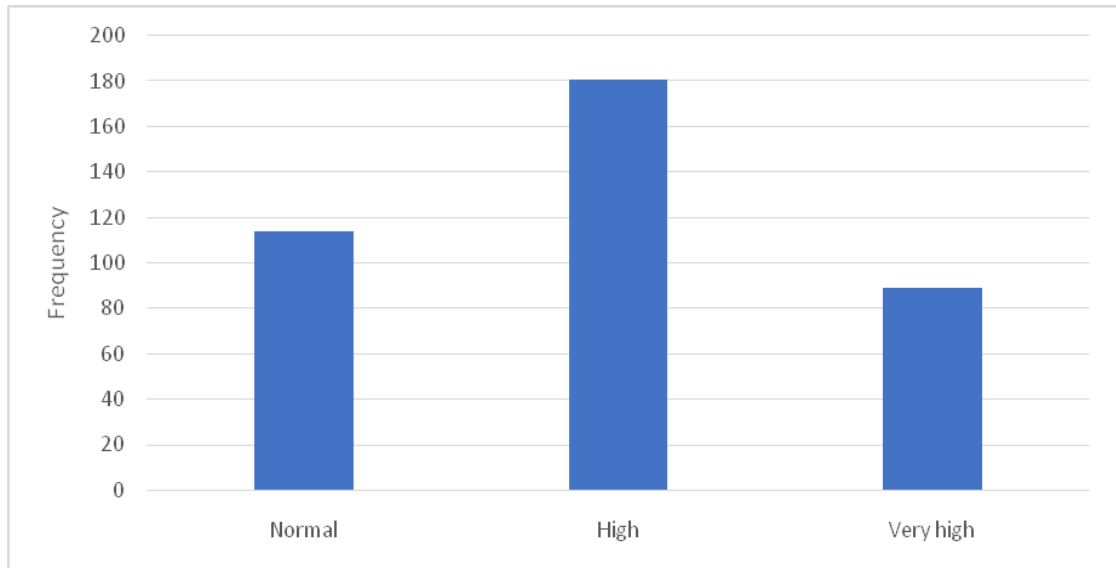
Table 22.

The Effects of Road Traffic Accidents on Economic Growth in Mogadishu.

Level	Frequency	Percent (%)
Normal	114	29.7
High	181	47.1
Very high	89	23.2
Total	384	100

Figure 21.

The Effects of Road Traffic Accidents on Economic Growth in Mogadishu.



4.20 The relationship between economic impacts and the elimination

The economy has a favorable impact on the reduction of traffic collisions.

A Pearson correlation coefficient was calculated to examine the association between the study variables (economic and elimination). The results are given in Table 22. With $r = .649$, $n = 384$, and $p = .000$, this represents an improved correlation between the two variables mentioned above. Figure 21 also demonstrates a high, positive correlation between the two variables in a frequency distribution. This means that when economic pressures develop, so too will the percentage of people who have been exposed. the elimination of road traffic accidents also increases. We accepted the hypothesis and concluded that the two variables have a statistically significant correlation. There were also similar findings by (Baek, et al., 2017), who found that economic benefits have led to a decrease in road accidents. See Table

Table 23.

Showing the Pearson correlation between Economic impacts and Elimination of Road Traffic

		Economic	Eliminated
Economic Pearson Correlation		1	.649**
c	Sig. (2-tailed)		.000
	N	384	384
Eliminated Pearson Correlation		.649**	1
e	Sig. (2-tailed)	.000	
	N	384	384

** . Correlation is significant at the 0.01 level (2-tailed).

4.21 The relationship between the contributory and economic effects

Contributory has a favorable influence on the economic consequences of traffic accidents. To investigate the relationship between these variables (contributory & economic), a Pearson correlation coefficient was calculated, and indeed the values are described in Table 22 below. With $r = .245$, $n = 384$, and $p = .000$, the results reveal a positive correlation between the two variables described previously. A normal probability plot, reveals that the two variables get a substantial, positive connection. This entails that even as the contributory factor increase, so economic consequences on traffic accidents raise as well. As a result, we accept the hypothesis, claim that the two independent variables own a statistically significant correlation. (Baek, et al., 2017) revealed comparable results, establishing those economic consequences have just a beneficial impact on the economic repercussions of road traffic accidents. See Table 24.

Table 24.

Pearson Correlation Between Contributory and Economic Impacts

	Contributory	Economic
Contributory Pearson Correlation or	1	.245**
Sig. (2-tailed)		.000
N	384	384
Economic Pearson Correlation	.245**	1
Sig. (2-tailed)	.000	
N	384	384

** . Correlation is significant at the 0.01 level (2-tailed).

4.22 T-test result analysis

When comparing male and female participants, there's also a significant variability for entrepreneurial orientation. An independent-sample t-test was utilized to compare the contributory for female and male respondents. Those values are significantly different. ($t(156.853) = .142, p.001$), with females having a higher mean score ($M = 19.2981, SD = 6.30810$) than males ($M = 19.1903, SD = 6.5116$). The proportion of something, such as the differences between means (mean difference = .10782, 95% CI: 1.39349 to 1.60913) was significant. See Table 25.

Table 25.

T-test Result of Gender with Eliminated

what is your gender?	N	Mean	Std. Deviation	Std. Error Mean
Eliminate Female	92	19.2981	6.30800	.65765
Male	292	19.1903	6.51162	.38106

4.23 Legal expenses insurance cover

The research findings showed that out of 384, 196 (51%) of these respondents have legal expense insurance cover, while 188 (49%) of the respondents don't have legal expense insurance cover, and that is the majority because many Somalian people do not understand the insurance. See Table 26 and Figure22.

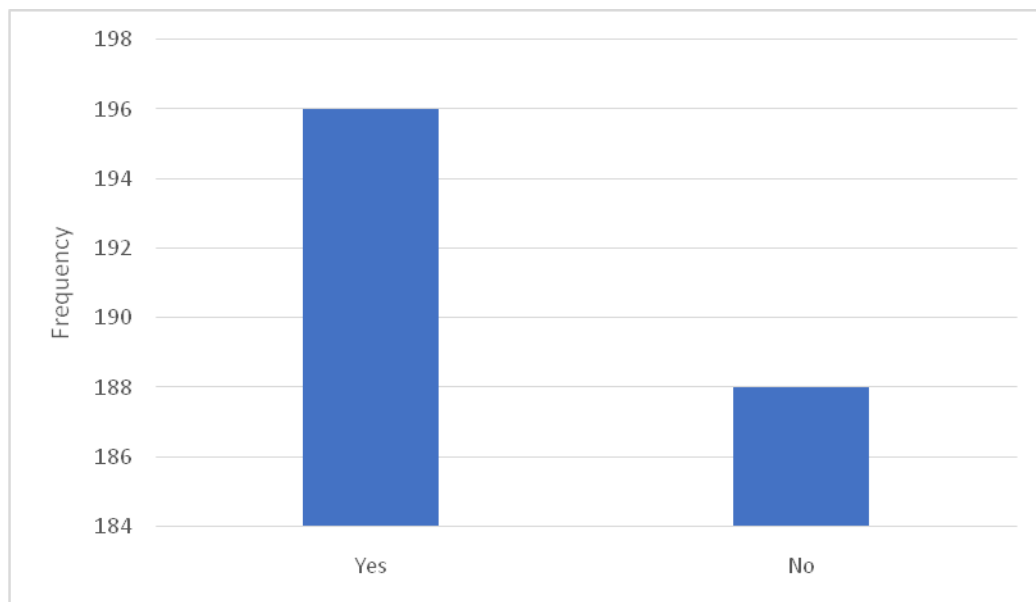
Table 26.

Legal Expenses Insurance Cover.

	Frequency	Percent (%)
Yes	196	51.0%
No	188	49.0
Total	384	100.0

Figure 22.

Legal Expenses Insurance Cover.



4.24 Result and Decision

The main objective of this study was to determine the number and characteristics of road traffic accidents in Mogadishu.

Based on these research findings, the level of accidents in Mogadishu is high (see Figure 5). While the accidents cause a great loss of lives and destruction of other socioeconomic properties, head-on collision accidents, usually happen in Mogadishu, see figure 6. While the auto Bajaj has become the most frequently included type of vehicle due to the road traffic accidents on Mogadishu roads (see Figure 7), road traffic accidents are common in Mogadishu because junctions are located at the center of the city, which means the largest number of vehicles in the city go through these junctions, which makes the level of accidents higher than other junctions in the city. Therefore, the government is required to give special attention to these junctions. See Table 10. Based on the research findings, 25.5% of these respondents strongly agree that pedestrians are one of the main factors contributing to road traffic accidents in Mogadishu, and it is the majority factor. Poor construction and bad planning of roads are one of the main factors contributing to road traffic accidents in Mogadishu, according to 24.5% of those polled, and lack of road marking signals is one of the main factors contributing to road traffic accidents in Mogadishu, according to 21.3% of those polled. See Figure 11.

The main purpose of this study is to address the effects of road traffic accidents on Mogadishu's social and economic growth.

Based on the research findings, the study showed that it is estimated that approximately 56% of the people who live in Mogadishu have been involved in road traffic accidents in Mogadishu over the last 17 years. See Figure 17. While asked by the respondents how the damage from the accident affects the economic growth in Mogadishu, 47.1% of these respondents said that road traffic accidents have high effects on the economic growth in Mogadishu, which is the majority, which shows that accidents are very difficult for the economic growth in Mogadishu. See Figure 21. Although they are related events, the road traffic accidents in Mogadishu have their special effects and require both cost and time. Furthermore, the destruction of valuable properties, damaged vehicle repair costs, as well as medical costs have the highest economic impact due to the road traffic accidents in Mogadishu, which can be explained by the fact that the health facilities in Mogadishu are

not very advanced, which is one of the biggest reasons why medical costs are very high. On the other hand, vehicle repair and property damage costs are limited to victims while the government does not provide any support to these individuals who suffer from road traffic accidents. However, 51% of the people who live in Mogadishu don't have legal expense insurance cover. See Figure 22, which makes people very vulnerable to road traffic accidents, as road traffic accidents result in significant economic losses. Because the victims are unable to receive additional assistance from the government or insurance companies to recover from the accident damages,

The third goal of the research is to make recommendations on relevant solutions based on the research findings.

Based on the research findings to eliminate the problem of road traffic accidents in Mogadishu, it is recommended that the government get qualified and well-trained drivers for the roads in Mogadishu, improve road designs such as roads and intersections, increase the number of traffic police to enforce the traffic laws and strictly apply the traffic regulations while improving the road condition and maintenance of the roads in Mogadishu. By implementing all these above points, we can significantly reduce and eliminate road traffic accidents in Mogadishu.

CHAPTER 5

Conclusion and Recommendations

5.1 Conclusion

Accidents are also the results of a complex interaction of various causes, making it very difficult to determine a single major cause. While assessing how and why the accident happened, it may also be simpler and more practical to confront the problem by applying concepts such as "accident developed in the middle of a risk-enhancing issue." This relevant set of problems can be attributed to the incidence of road traffic accidents identified for this research:

- The level of traffic accidents in Mogadishu is high at 43.8%.
- 26% of the kinds of accidents that always happen in Mogadishu city are head on collisions.
- The types of vehicle that are always involved in road traffic accidents are Bajaj Auto. 32.6% and 24.2% are heavy trucks, respectively.
- Tar Buunka & Taleex are the first locations where most accidents take place, which was 24.2%, and the second is Zoobe & KM4 with 28%.
- 31% of the economic impacts of accidents in Mogadishu are very high.
- 51% of the community living in Mogadishu does not have legal expense insurance cover.
- The main culprit behind traffic accidents in Mogadishu is poor driving knowledge.
- Lack of traffic management due to poorly trained traffic police
- Lack of road traffic signs
- Poor construction and bad planning of roads
- Poorly maintained and old vehicles break down in the streets.
- Overloaded trucks overturn or break down in the street.
- Right-hand driving vehicles contribute due to the growing number of traffic collisions.

5.2 Recommendations

It is recommended that the government implement the following issues to reduce road traffic accidents in Mogadishu:

- To improve and strengthen the road safety development program.
- Allocating human and financial resources to cause a problem solution
- To figure out what steps can be taken to reduce road traffic accidents, reduce injuries or their effects, and figure out how these actions affect people.
- To rebuild and maintain damaged roads within the city.
- Provision of adequate road traffic signs.
- Training and developing traffic police to reduce road traffic accidents properly.
- Giving financial penalties to drivers who break the rules of driving.
- The officer of the traffic police should bring the enforcement regulations that control the driver's violations. It is good to give the safety traffic police the authority to fine you during the sitting period.
- Limiting the number of licenses issued and ensuring the methods of departure
- To give the training to teach the drivers the rules and regulations of the traffic, which may reduce their mistakes,
- Reducing the number of Bajaj Autos and limiting truck-loads to their capacity to reduce vehicle overturn.
- It prohibits right-hand-drive vehicles from the country.
- The Ministry of Transport must conduct annual motor vehicle testing to reduce vehicle breakdowns.

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APPENDICES

Dear sir/madam

Appendix A: Questionnaire

Currently, I am a master's student at the Department of Civil Engineering at NEAR EAST UNIVERSITY's faculty of engineering. I am now doing Road Traffic Accidents and Their Effects on Economic Growth: A Case Study Mogadishu. Therefore, I kindly request you to respond to the statements in the following questionnaire, your involvement in facilitating this research will be gratefully received. The data will be kept confidential and will only be used for academic reasons. Please contact me at this email address if you have any questions or concerns. email address:20196055@std.neu.edu.tr

Direction: Please fill in the blanks with your response using the checkboxes given.

Section 1: Details about person

1. Sex
 - a. Male
 - b. Female
2. Age
 - a. Less than 18
 - b. 18-25 years old
 - c. 26-35
 - d. 36-40
 - e. 41-50
 - f. More than 50
3. Educational levels
 - a. Never
 - b. Primary level
 - c. Secondary level
 - d. Diploma
 - e. Bachelor
 - f. Master

- g. PHD
- 4. Type of employment
 - a. Employed
 - b. Self-employee
 - c. Unemployed
 - d. Student

Section 2: causes, level, and kind of road traffic accidents in Mogadishu

- 5. How is the level of road traffic accidents in Mogadishu?
 - a. Normal
 - b. High
 - c. Very High
- 6. Which type of vehicle is always involved in accidents in Mogadishu?
 - a. Bicycle
 - b. Motorcycle
 - c. Buses
 - d. Bajaj auto
 - e. Personal Car
 - f. heavy Trucks
- 7. From your point of view, who was responsible for that accident in Mogadishu city?
 - a. Driver
 - b. Pedestrian
 - c. Driver and Pedestrian
 - d. No one
- 8. What kind of impact always results from accidents in Mogadishu?
 - a. Economic impacts only
 - b. Social impacts
 - c. Property Damage
 - d. All of them
 - e. Other (indicate them) -----
- 9. How the damage of the accidents affects the economic Growth of Mogadishu?

- a. Normal
- b. High
- c. Very high

10. When do you think the majority of road collisions occur?

- a. Morning
- b. Afternoon
- c. Evening
- d. Night

11. What are your thoughts on the number of police officers on the highways enforcing traffic laws?

- a. There is enough
- b. There is not enough

12. Is there any tangible development in that Traffic accident made towards accidents?

- a. Yes
- b. No

If the answer is “No”

13. Please list down at least four locations (roads) where your experience the Traffic Accidents is high in Mogadishu.

- a.
- b.
- c.

14. According to your experience, what are the key contributory factors of the accidents in Mogadishu?

No	Factor name	Strongly disagree 1	Disagree 2	Neutral 3	Agree 4	Strongly Agree 5
1	Pedestrians					
2	Over-speeding					
3	Drunk driving					
4	Distracted driving					

5	Reckless driving					
6	Night Driving					
7	Teenage Driving					
8	Jumbling red Traffic lights					
9	Overtaking & Wrong Driving					
10	Road Rage					
11	Lack of marking signals					
12	Huge number of vehicles					
13	Narrow roads					
14	Poor construction & Bad planning of roads					
15	all of them					

Section 3: the consequences of road traffic accidents in Mogadishu

15. Over the last year months, have you or one of your relatives been involved in traffic accidents in Mogadishu?

- a. Yes
- b. No

If “Yes”

16. how many traffic accidents with injury have you been involved in?

- a. One
- b. Two
- c. Three times
- d. More than three times

17. What kind of accidents is always happened on Mogadishu roads?

- a. Vehicle Rollover
- b. Head-on collision

- c. Single car Accident
- d. Multiple vehicle collision
- e. All of them

18. Is the vehicle a write-off/repairable?

- a. Yes
- b. No
- c. If Yes

19. Does your vehicle get damaged because of traffic accidents in Mogadishu?

20. Is your vehicle reparable?

21. How much will it cost and is there an estimate?

- a. 100-200\$
- b. 300-500\$
- c. 600-800\$
- d. 900-1000\$
- e. More than 1000\$
- f. I don't know

22. Do your legal expenses insurance cover?

- a. Yes
- b. No

23. Have you taken any time off work as a result of your injuries from the accident?

- a. Yes
- b. No

24. Have you returned to work?

- a. Yes
- b. No

25. Which kind of Economic impact is always resulted by the Road Accidents in Mogadishu?

No	Factor	Strongly disagree 1	Disagree 2	Neutral 3	Agree 4	Strongly Agree 5
1	Medical cost					
2	Vehicle repair cost					
3	Police & administration cost					
4	Damage to valuable Property					
5	Loss of productive population					
6	Loss of man-hour					
7	All of them					

26. In your opinion what should be done to eliminate the problem of Traffic accidents in Mogadishu?

No	Factors	Strongly disagree 1	Disagree 2	Neutral 3	Agree 4	Strongly Agree 5
1	Qualified Drivers					
2	Driving regulations should be applied strictly					

3	Increasing number of Traffic policemen					
4	Improving road condition and maintenance					
5	Improving Road design					
6	To Improving vehicle design					
7	All of them					

Appendix B: Ethics Approval
BİLİMSEL ARAŞTIRMALAR ETİK KURULU

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26.09.2022

Dear Mohamed Abdullahi Abubakar

Your application titled **“Road Traffic Accidents and Their Effects on Economic Growth: Case Study Mogadishu.”** With the application number NEU/AS/2022/127 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 KİRAZ

Rapporteur of the Scientific Research Ethics Committee

Appendix C. Similarity Index















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