ST. MARY'S UNIVERSITY COLLEGE

FACULTY OF LAW

LL.B THESIS

CRITICAL ANALYSIS OF LAWS, DIRECTIVES AND MEASURES TO MINIMIZE TRAFFIC ACCIDENT IN ADDIS ABABA

BY TESFAHUN TADEGE

JULY 2010
SMUC
ADDIS ABABA, ETHIOPIA

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Introduction

- The construction of roads goes back to emperor Thewodros and;
- Road traffic started in Ethiopia since 1907 when emperor Menelik II imported two vehicles;
- More roads were constructed by emperor Haileselassie;
- The road network and the number of vehicles increased during emperor Hailesellase and consequently the traffic flow increased;
- Issuing of regulation for traffic safety started since 1964;
- Since then various regulations have been issued to regulate transport and manage traffic accident;
- There are about 571 traffic police men in Addis Ababa traffic police department which is inadequate for a city of about 90,000 vehicle population;
- These traffic police have to control about 320kms of main roads and also on duty on most of the major intersections in the city.

Acknowledgments

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CHAPTER ONE

1.1 Backgrounds of the Study

An accident is defined as a traffic accident if it occurs on a road or in a place to which the public have access. This can include footpaths and bridleways. As number of factors contributes to the risk of collision include: vehicle design, speed of operation, road design, and driver impairment. Worldwide, motor vehicle collisions lead to significant death and disability as well as significant financial costs to both society and the individual.

Road traffic accident is a major cause of deaths and property damages around the globe off course, it will be worse when we see the countries in Africa. This problem is common in underdeveloped countries like Ethiopia. For instance, the fatalities per 10,000 populations in 1989 were 3 and 36 in Ethiopia and South Africa respect lively. Where as in Sweden and Great Britain, the fatalities were 9 each in similar year (Berhanu: 2000:24).

Road traffic accident of Ethiopia is expected to be higher in Addis Ababa as most vehicles are found in the city. Thus, the annual road traffic accident report indicated that the problem was not minimized as expected. For instance, the traffic controlling and investigation department accident record of the year 2007-2010 indicated that more than 1273 people died, more than 2315 heavily injured, more than 2428 slightly injured and more than 19760 cars were crashed with only property damage which is estimated more than 80 million birr in four years.

Realizing the existence of this road traffic accident, the Addis Ababa city administration has been regularly establishing controlling mechanisms by Traffic Controlling and Investigation department which is authorized

Source: From A.A police commission traffic controlling & investigation manual report of 2001-2002

to undertake this task. Many researchers have been conducted aboard and in Ethiopia to traffic accident. Of the studies conducted aboard, Nilson (1996) can be taken as one example. This study is aimed at analyzing traffic safeties for 25 years which is undertaken in Swedish national Road Traffic research Institute. Besides, the Ministry of Transport and Communications of Norway conducted a research to assess road safety by setting a strategy (2002-2011).

On the other hand, Girma (2000) conducted a research that aimed to assess the effect of road and traffic factors on road safety in Ethiopia.

1.2 Statement of the Problem

Rules and regulations were being enacted to control and traffic accidents in the country. For instance, the city government of Addis Ababa enacted a regulation in 2009. Thus, "recognizing that day to day the extent of loss of life, property and economy of the city due to road traffic accident has reached critical level, it is necessary to come up with a legal framework to control circumstances that expose to accident which are related to the technology and due to drivers" (Regulation No 27/2009 Road Traffic safety Regulations of the Addis Ababa City Government).

However, the mere enacting laws and regulations cannot be guarantee for the practicability or execution unless there are controlling and follow up mechanisms.

Hence, to minimize the road traffic accidents and to assess the controlling measures or mechanisms, the present research focuses on analyzing the enacted directives and the measures to minimize the traffic accidents in Addis Ababa.

Source: Regulations No. 27/2009 road traffic safety regulations of the Addis Ababa City government

Thus, the following research questions are designed which will be followed in the course of this study:

1. Are the enacted directives being practiced effectively?
2. To what extent the measures are appropriate in minimizing the traffic accidents in Addis Ababa?
3. What are the problems that hinder the execution of regulations to minimize traffic accidents?

1.3 Objectives of the Study

The general objective of this research is to analyze critically the laws, directives and measures to minimize traffic accident in Addis Ababa. This major objective can be operational by employing the following specific objectives:

1. To analyze the laws and directives of controlling road traffic accident and their practice in Addis Ababa.
2. To analyze the measures that is set to minimize traffic accident in the city.
3. To indicate the prevailing problems those hinder the execution of the regulations that are enacted to minimize traffic accidents.
4. To give relevant recommendations on how to minimize the traffic accidents.
5. To fulfill the requirements of degree in LLB.

1.4 Significance of the Study

First of all, this research helps the traffic office by indicating the solutions on how to minimize traffic accidents in Addis Ababa.

It can also be used as a basis for further related study on this topic in the future.

Source: Regulations No. 27/2009 road traffic safety regulations of the Addis Ababa City government

1.5 Scope of the Study

The study focuses on the critical analysis of the laws, directives or regulations and measures or controlling mechanisms to minimize traffic accidents in Addis Ababa City Administration by assessing the newly enacted directive. The researcher limits the scope only on the traffic controlling and investigation department that has a local jurisdiction to investigate case of human deaths, badly injured, light injured and property damage from every corner of Addis Ababa City.

It would have been better if the study was conducted in large scale. However, due to time and financial constraints the research was limited on analyzing the directives and measures to minimize traffic accident only in Addis Ababa City Administration.

1.6 Definition of Key Terms

Traffic:- means one or more pedestrians, animals or Vehicles that are travel on a road (Proclamation No. 7/2003, article 2/4, 2003).

Road:- Shall mean any road or high way which is commonly used by vehicles and pedestrians (Proclamation no. 7/2003 article 2/5, 2003).

Vehicle:- Means carriage chariot, bicycle, motor vehicle, semi trailer that is operated on the road (Proclamation no. 1/1998 article 2/3, 1998).

Traffic control:- means a member of the traffic police force in uniform (Proclamation no. 5/1998 article 2/2, 1998).

Road safety:- Shall mean the movement of road user with out accident or to safeguarded them from grater damage if there is any activity related to it (Proclamation no. 7/2003 article 2/2, 2003).

Accident:- means any road traffic accident.

Source: Development of Transport and Traffic Accident in Ethiopia course No. PPICG 324 by Tenager Yisemaw

1.7 Organization of the Study

The study was organized in four chapters. The first chapter included the background, statement of the problem, objectives or the study, scope and limitation of the study and definition of key terms.

In chapter two, the encountered or theoretical aspects of traffic accidents, laws, regulations and intended measures that can minimize the traffic accidents were incorporated.

Chapter three dealt with the research methodology and data collection and also chapter four data analysis recommendations of the findings of the study were discussed in chapter four.

Source: Development of Transport and Traffic Accident in Ethiopia course No. PPICG 324 by Tenager Yisemaw

CHAPTER TWO
LITERATURE REVIEW

2.2. Traffic Laws, Rules and Regulations

Traffic Laws are laws which govern traffic and regulate vehicles, while rules of the road are both the laws and the informal rules that may have developed over time to facilitate the orderly and timely flow of traffic.

Traffic is formally organized in many jurisdictions, with marked laws, junctions, intersection, interchanges, traffic singular, or signs.[1]

Traffic is often classified by type: heavy motor vehicle (e.g. car, truck); other vehicle (e.g. Moped, bicycle); and pedestrian. Different classes may share speed limits and easement, or may be segregated. Some jurisdictions may have detailed and complex rules of the road while others rely more on drives' common sense and willingness to cooperate.[2]

2.2.1. Rules of the Road

Rules of the road are the general practices and procedures that road users are required to follow. These rules usually apply to all roads users, though they are of special importance to motorists and cyclists. These rules govern interactions between vehicles and with pedestrians. The basic traffic rules are defined by an international treaty under the authority of the United Nations, the 1968 Vienna convention on Road Traffic. Not all counties are signatory to the convention and., even among signatories, local variations in practice may be found. There are also unwritten local rules of the road, which are generally understood by local drivers.

[1] WWW.Wikipedia.com

As a general rules, drivers are expected to avoid a collision with another vehicle and pedestrians, regardless of whether or not the applicable rules of the road allow them to be where they happen to be.

In addition to the rules applicable by default, traffic signs and traffic lights must be obeyed, and instructions may be given by a police officer, either routinely (on a busy crossing instead of traffic lights) or as road traffic control around a construction zone, accident, or other road disruption. These rules should be distinguished from the mechanical procedures requited to operate one's vehicle.[3]

2.1.2 The History of Traffic Accidents in Ethiopia

Road building was intensified and modernized during the reign of Teferi Mekonnen and his subsequent reign as employer Haile sillassie.

As a result of increased road network, number of vehicles increased during emperor Haile Sellassie, the traffic flow increased but no traffic accidents were recorded before 1968.[4]

However, now a days traffic accidents are well recorded. For instance, the road the accidents and causalities 1996-2005 National Data indicated as follows:

Out of the total number of accidents and causalities (143513), the five-year average records of total accident and casualties occurrences were 68% pedestrian strikes (out of which 30% are children), 13% overturn, 6% fall from vehicle, 3% animal and cart strike and 10% for all other remaining crash types.[5]

Recently, road traffic accident rate has reached at critical stage in our country with the annual fatality per 10,000 vehicles is 128 and 8,000 are injured or disabled in 2004/2005 in particular. Basis, 81% of road

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[2] Ibid
[3] Introduction to Road Traffic Safety, Lecture for Ethiopian Police College by Tenager Yismaw, April 2008.
[4] Ibid P. 18

accidents are caused by driver error; the studies further show that the professional drivers are involved in 88% of fatal accidents.[6]

2.1.3. Traffic Regulations World Wide

In many countries, the rules of the road are codified, setting out the legal requirements and punishments for breaking them. In the United Kingdom, the rules are set out is the High way code, which includes obligations but also advice on how to drive sensibly and safety.

In the United States, traffic lows are regulated by the states and municipalities through their respective traffic codes. Most of these are based at least in part on the uniform vehicle code, but there are variations from state to state. In states such as Florida, traffic Law and criminal law are separate; therefore, unless someone flees a scene of an accident, commits vehicular homicide organs laughter, they are only quilt of a minor traffic offense. However, states such as South Carolina have completely criminalized their traffic law, so, for example, you are guilty of a misdemeanor simply for traveling 5 miles over the speed limit.[7]

2.1.4. Traffic Regulations in Addis Ababa

Art. 53 of regulation 279/63 empower the traffic police to stop a vehicle violating the regulations and not to let proceed until the regulations being violated are complied with.[8]

At present, there are about 571 traffic police in Addis Ababa City traffic Police department which is, of course, inadequate for a city of about 148, 617 vehicle population.[9]

An existence of only about 59 traffic police with motor bicycles in Addis Ababa under the Traffic policy which work in a two shift basis, which are

[6] Ibid P. 28
[7] WWW.Wikipedia.com
[8] Road Traffic Safety Regulations No. 27/2009
[9] Addis Ababa city Traffic Police department

rarely equipped with radios for communication among themselves and with their (head quarter in a way has much negative contribution on the general safety conditions of road traffic in the capital, which could be a good indicator to the general situation in the country.[10]

Besides regulation 279/63, regulations 5/1999, 23/1999 and 4/2004 were previously issued road Traffic Safety regulations in Addis Ababa City Government.

Recently, by considering that day after day the extent of loss of life, property and economy of the city due to road traffic accident has reached critical level, and the necessity to coming up with a legal frame work to control circumstances that expose to accident which are related to the technology and due to the drivers and new types of traffic offences that are not sanctioned by the previous traffic regulations have emerged, as a result of which it is found necessary to enact a regulation that goes in line with the current level of development and modern traffic systems. Now, therefore, in accordance with Article 14(2) (i) and Article 23(2)(f) of the Addis Ababa City Government Revised charter proclamation 361/2003, regulation 27/2009 Road Traffic safety regulation of the Addis Ababa City Government is issued.[11]

2.2 Priority (right of way)

Vehicles often come into conflict with other vehicles and pedestrians because their intended courses of travel intersect, and thus interfere with each other's routes. The general principle that establishes who has the right to go first is called 'right of way", or "priority". It establishes who has the right to use the conflicting part of the road and who has to wait until the other does so.

Signs, signals, markings and other features are often used to make priority explicit. Some signs, such as the stop sign, are nearly universal.

[10] Ibid
[11] Proclamation 27/2009, Road Traffic Safety Regulation of Addis Ababa City Government

When there are no signs or markings, different rules are observed depending on the location. These default priority rules differ between countries, and may even vary within countries. Trends toward uniformity are exemplified at an international level by the Vienna convention on Road signs and Signals, which prescribes standardized traffic control devices (signs, signals, and markings) for establishing the right of way where necessary.[12]

2.3 Intersections

A roundabout is a type of road junction, or traffic claiming device, at which traffic streams circularly around a central island after first yielding to the circulating traffic. Unlike with traffic circles, vehicles on a roundabout have priority over the entering vehicles, parking is not allowed and pedestrians are usually prohibited from the central island.

In the United Kingdom, priority is always indicated by signs or markings, so that every junction between public roads (except those governed by traffic signals) has a concept of a major road and minor road. The default give-way-to-right rule used in continental Europe causes problems for many British and Irish drivers who are accustomed to having right of way by default unless they are specifically told to give way. Other countries use various methods similar to the above examples to establish the right of way at intersections.[13]

2.4 Perpendicular Intersections

Also known as a 'four-way" intersection, this intersection is the most common configuration for roads that cross each other, and the most basic type. If signals do not control a 4-way intersection, signs or other features are typically used to control movements and make clear priorities. The most common arrangement is to indicate that one road

[12] America bar Association and Traffic Institution (1951): Judge and prosecutors in Traffic court
[13] The Chareles a Williams and charelse C. Tomasa (1965) Traffic Accident Springing field Illinois USA.

has priority over the other, but there are complex cases where all traffic approaching an intersection must yield and may be required to stop. [14]

In the United States, South Africa, and Canada, there are four-way intersections with a stop sign at every entrance, called four-way stops. A failed signal or a flashing red light is equivalent to a four-way stop, or all-way stop. Special rules for all-way stops may include: [15]

1. In the countries that use four-way stops, pedestrians always have priority at crosswalks-even at unmarked ones, which exist as the logical continuations of the sidewalks at every intersection with approximately right angles-unless signed or painted otherwise.
2. Whichever vehicle first stops at the stop line- or before the crosswalk, if there is no stop-line have priority.
3. If two vehicles stop at the same time, priority is given to the vehicle on the right.
4. If three vehicles stop at the same time, priority is given to the two vehicles going in opposite directions, if possible.
5. If your vehicles stop, drivers usually use gestures and other communication to establish right-of way. [16]

In Europe and other places, there are similar intersections. These may be marked by special signs according to the Vienna Convention on road signs and signals, a danger sign with a black X representation a crossroads. This sign informs drivers that the intersection is uncontrolled and that default rules apply. In Europe and in many areas of North America the default rules that apply at uncontrolled four-way intersections are almost identical: [17]

1. Rules for pedestrians differ by country, in the United States and Canada pedestrians generally have priority at such an intersection.

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[14] America bar Association and Traffic Institution (1951): Judge and prosecutors in Traffic court
[15] The Chareles a Williams and charelse C. Tomasa (1965) Traffic Accident Springing field Illinois USA.
[16] Road Traffic Regulations and the controlling mechanisms in Ethiopia by Eshetu chambo.
[17] Road Traffic Regulations and the controlling mechanisms in Ethiopia by Eshetu chambo

2. All vehicles must give priority to any traffic approaching from their right.
3. Then, if the vehicles are turning right or continuing on the same road it may proceed.
4. Vehicles turning left must also give priority to traffic approaching from the opposite's direction, unless that traffic is also turning left.
5. If the intersection is congested, vehicles must alternate directions and/or circulate priority to the right one vehicle at a time. [18]

2.5 Overtaking

Overtaking (or passing) refers to a maneuver by which one or more vehicles traveling in the same direction are passed by another vehicle. On two-lane roads, when there is a split line or a dashed line on the side of the over taker, drivers may overtake when it is safe. On multilane roads in most jurisdictions, overtaking is permitted in the 'slower" lanes, through many require a special circumstance. [19]

In the United Kingdom, United States, and Canada, notably on extra-urban roads, a solid white or yellow line closer to the driver is used to indicate that no overtaking is allowed in that lane. A double white or yellow line means that neither side may overtake. [20]

2.6 Lanes

When a street is wide enough to accommodate several vehicles traveling side-by-side, it is usual for traffic to organize itself into lanes, that is, parallel corridors of traffic. Some roads have one lane for each direction of travel and other have multiple have multiple lanes for each direction. Most countries apply payment markings to clearly indicate the limits of each lane and the direction of travel that it must be used for. In other

[18] Development of Transport and Traffic Accident in Ethiopia Lecture for in Ethiopia police college by Tenager yesmaw

[19] The American bar Association the Traffic institution Northern University

countries lanes have no markings at all and drivers follow them mostly by intuition rather than visual stimulus.[21]

On roads that have multiple lanes going in the same direction, drivers may usually shift inconveniences to other drivers. Drivers cultures vary greatly on the issue of "lane ownership": in some countries, drivers traveling in a lane will be very protective of their right to travel in it while in others drivers will routinely expect other drivers to shift back and forth. [22]

The usual designation for lanes on divided highways is the fastest lane the one closest to the center of the road, and the slowest to the edge of the road. Drivers are usually expected to keep in the slowest lane unless overtaking; through with more traffic congestion all lanes are often used. When driving on the right: [23]

- The lane designated for faster traffic is on the left
- The lane designated for slower traffic is on the right
- Most freeway exists are on the right.

- Overtaking is permitted to the left, and sometimes to the right. [24]

Countries parties to the Vienna Convention on Road traffic have uniform rules about overtaking and lane designation. The convention details among other things that 'Every driver shall keep to the edge of the carriageway appropriate to the direction of traffic," notwithstanding the presence or absence of oncoming traffic.

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[21] Development of Transport and Traffic Accident in Ethiopia Lecture for in Ethiopia police college by Tenager yesmaw

[22] The American bar Association the Traffic institution Northern University.

[23] Road Traffic Regulations and the controlling mechanisms in Ethiopia by Eshetu chambo

[24] Development of Transport and Traffic Accident in Ethiopia Lecture for in Ethiopia police college by Tenager yesmaw

Allowed expectations to these rules include turning or heavy traffic; traffic in lines or strictly adhered to on roads with oncoming traffic, but still apply on multi-lane and divided highways. Many countries in Europe are party to the Vienna conventions on traffic and roads. In Australia 9which is not a contracting party), traveling in any lane other than the "slow" lane with a speed limit at or above 80 kh/h is a criminal offence, unless signage is posted to the contrary or the driver is overtaking. [25]

2.7 One-Way Streets

In more sophisticated systems such as large cities, this concept is further extended; some streets are marked as being one-way, and on those streets all traffic must flow in only one direction, but pedestrians on the sidewalks are generally not limited to one-way movement. A driver wishing to reach a destination he already passed must use other streets in order to return. Usage of one-way streets, despite the inconveniences it can bring to individual drivers, can greatly improve traffic flow since they usually allow traffic to move faster and tend to simplify intersections. [26]

2.8 Rush Hour Policies

Some cities adopt policies to reduce rush-hour traffic and pollution and encourage the use of public transportation. For example, in Sao Paulo, Manila and Mexico City, each vehicle has a specific day of the week in which it is forbidden from traveling the roads during rush hour. The day for each vehicle is taken from the license plate number, and this rule is enforced by traffic police and also by hundreds of strategically positioned traffic cameras backed by computerized image-recognition systems that issue tickets to offending drivers.[27]

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[25] Road Traffic Regulations and the controlling mechanisms in Ethiopia by Eshetu chambo
[26] The American bar Association the Traffic institution Northern University.
[27] Road Traffic Regulations and the controlling mechanisms in Ethiopia by Eshetu chambo
[27] The American bar Association the Traffic institution Northern University
[28] Development of Transport and Traffic Accident in Ethiopia Lecture for in Ethiopia police college by Tenager yesmaw .

In the United States and Canada, several expressways have a special lane (called an "HOV Lane- High occupancy Vehicle lane) that can only be used by cars carrying two (some locations-three) or more people. Also, many major cities have instituted strict parking prohibitions during rush hour on major streets leading to and from the central business district. During designated weekday hours, vehicles parked on these primary routes are subject to prompt ticketing and towing at owner expense. [28]

2.9 Pre-emption

In some areas, emergency responders are provided with specialized equipment which allows emergency response vehicles, particularly fire fighting apparatus, to have high priority travel by having the lights along their route change to green. The technologies behind these methods have evolved, from panels at the fire department (which cold trigger and control green lights for certain major corridors) to optical systems (which the signal head). In other areas, public transport buses have special equipment to get green lights. During emergencies where evacuation of a heavily populated area is required, local authorities may institute contra flow lane reversal, in which all lanes of a road away from a danger zone regardless of their original flow.[29]

2.10 Pedestrian Crossings

Pedestrians must often cross from one side of a road to the other, and in doing so may come into the way of vehicles traveling on the road. In many places pedestrians are entirely left to look after themselves, that is, they must observe the road and cross when they can see that no traffic will threaten them. Busier cities usually provide pedestrian crossings, which are strips of the road where pedestrians are expected to cross. The actual appearance of pedestrian crossings varies greatly, but the two most common appearances are; (1) a series of parallel white stripes or (2)

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[29] Road Traffic Regulations and the controlling mechanisms in Ethiopia by Eshetu chambo

two long horizontal white line. The former is usually preferred, as it stands out more consepicusouly against the dark payment.

Some pedestrian crossings also accompany a traffic signal which will make vehicles stop at regular intervals so the pedestrians can cross. Pedestrian crossings without traffic signals are also common. In this case, the traffic laws usually states that the pedestrian has the right of way when crossing, and that vehicles must stop when a pedestrian uses the crossing. Countries and driving cultures very greatly as to the extent to which this is respected. [30]

Some jurisdictions forbid crossing or using the road anywhere other than at crossings, termed jaywalking. In other areas, pedestrians may have the rights to cross where they choose, and have right of way over vehicular traffic while crossing. In most areas, an intersection is considerer to have a cross walk, even if not painted, as long as the roads meet at approximate right angels. Example of locations where this rule is not in effect is the United Kingdom and Croatia. Pedestration crossings may also be located away from intersections. Pedestration crossings may be located near other traffic control devices; if they are not also regulated in some way, vehicles must give priority to them when in use. Traffic on a public road usually has priority over other traffic such as traffic emerging from private access; rail crossings and drawbridges are typical expectations.[31]

2.10.1 Anatomy of a Pedestrian Crash

Most pedestrian crashes involve a forward moving car. In such a crash, a standing or walking pedestrian is struck and accelerated to the speed of the car and then continues forward as the car brakes to a halt. Although the pedestrian is impacted twice; first by the car and then by the ground

[30] Development of Transport and Traffic Accident in Ethiopia Lecture for in Ethiopia police college by Tenager yesmaw

[31] Charles A. Williams and Charles C. Tomas (1996). Traffic accident Spring filed llinois USA

and most of the fatal injuries occur due to the interaction with the car. Thus vehicle designers usually focus their attention on understanding the car vehicles bumper first contacts the lower limbs of the pedestrian, the leading edge of the hood hits the upper thigh or pelvis, and the head and upper torso are struck by the top surface of the hood and/or windshield. [32]

2.10.2 Reducing pedestrian injuries

Most pedestrians die due to the traumatic brain injury resulting from the hard impact of the head against the staff hood or windshield. In addition, although usually non-fatal, injuries to the lower limb (usually to the knee joint and long bones) are the most common causes of disability due to pedestrian crashes. A Frontal protection System (FPS) is a device fitted to the front end of a vehicle to protect both pedestrians and cyclists who are involved in a front end collision with a vehicle. While the lower limb is the most commonly injured body region, most pedestrian fatalities are due to head injuries.[33]

[32] Traffic Rules and Regulation for Drivers of Buses, Trucks and auto rickshaws
[33] The Traffic police and the road traffic regulations

CHAPTER THREE

RESEARCH METHODOLOGY

Four groups of people are used as a source of data for this study or analysis. The first group consists of traffic police member who works different types of jobs in traffic police main sections of Addis Ababa City Police Commission currently. The second group is pedestrians from kirkos sub city. The Third group is vehicles drivers from different corners of the city. And the fourth one was higher officials of Road and Transport Authority and higher rank officers of the traffic police members.

Accordingly to ensure representation 100 traffic police members out of 571 total traffic police members in the city were selected by simple random sampling techniques. There were also as a supportive 100 pedestrians from the kirkos sub city and 100 vehicle drivers' from different parts of the city are randomly selected. Public officials from road and transport authority and higher rank officers from traffic police department were purposely selected for interview.

In addition to those documents from Addis Ababa Police traffic controlling and investigation department, Addis Ababa transport Bureau and Addis Ababa Road Authority were reviewed and used as a source of information in the study.

3.1 Tools for data Collection

The data collection instruments by used were questionnaire, interview and document analysis. Questionnaires both open and close ended items that cover a wide range of themes designed and administered by Traffic Police members, Pedestrians and Drivers. In the attempt to increase the reliability of the data interviews were conducted in different public organization.

Review of recorded data was employed to gather necessary data such as the numbers of accident, the numbers of vehicles and the length of road

in Addis Ababa City. The instruments were prepared based on the objective of the study and the literature.

3.1.2. Questionnaire

Traffic police members' questionnaire has close ended and open ended questionnaires, in the attempt to assess traffic polices members' opinion about the traffic accidents, cause of accident, challenges of traffic control and tasks performed by traffic police members. (See Appendix: A for a complete version).

Pedestrian's questionnaire sensationally focused on the cause also consists of 12 items and sensationally focused on the cause of traffic accident and the use of roads as a pedestrians and it is used as supportive ideas to compare the opinion of the pedestrians' in relation to the drivers. The driver's questionnaire was similarly conducted to know the opinion of the derivers about the use of road, cause of traffic accident and opinion about the task performed by the traffic police members. (For the pedestrians and drivers questionnaire (See Appendix: B and C respectively).

3.1.2 Interview

Interview was one of the instruments used to gather additional information to supplement the questionnaire and document review results. For this study, basically structured interview question consisting of items were prepared and conducted for the higher rank officers of traffic police members, public officials of Addis Ababa road Authority and Addis Ababa transport bureau and national road safety. In addition, some unstructured interview was held with traffic police higher rank officials to obtain relevant information. Since the researcher conduct interview, it was conducted in Amharic but prepared in English. (For interview question see Appendix: D).

3.1.3 Document Review

For this study, review of documents was conducted in Addis Ababa traffic police department. These were annual plans and execution reports to identify the number of accidents. From the transport bureau; the number of vehicles and from road authority the length of roads in Addis Ababa City were found. These data's are very essential to evaluate the main objective of the study which was assessing of efforts and measures to minimize the traffic accident and evaluate the consequence.

3.2 Pilot Test

The draft of questionnaire was prepared and distributed to traffic police members in the traffic controlling and investigation department, for pedestrians and drivers around Addis Ababa city and hence, minor corrections and misdirection to ambiguities were made according to the feed back collected.

3.3 Data Collection Procedure

By obtaining adequate and relevant information of the study questionnaire were prepared for the traffic police members, pedestrians' and drivers' respondents and distributed and collected. Interview of higher officials of road and transport authority also employed, besides document review also conducted.

As it is mentioned above, four groups of respondents were involved in this study. These group were traffic police members, pedestrians, drivers and selected higher officials.

Review of document was made in Addis Ababa Traffic police controlling and Investigation department, Addis Ababa transport Bureau and Addis Ababa road authority.

3.4 Method of Data Analysis

Since the study explored multiple methods of data collections, the producers followed for analyzing the data depend on the instruments

employed. Thus the present investigation employed both quantitative and qualitative methods of data analysis procedures because, the study intended to evaluate the match and mismatch between the intent and the document reviewed shows, about the effort and measures to minimize the traffic accident.

Quantitative data analysis method is used for analysis of these data obtained through questionnaires and review of documents that readily lead themselves to numerical presentation.

In parallel with quantitative techniques of data analysis, qualitative data analysis also employed for analysis those data gather from interview, and open-ended questionnaire, which are less easily summarized in numerical form but can be analyzed through narrative descriptions.

CHAPTER FOUR

DATA ANALYSIS

In this chapter the data collected by using different devices will be critically analyzed.

4.1 Respondent's profile

The collected data are summarized in the form of table so as to give a clear picture of the result.

Table I. Characteristics of respondents

No	Item	Respondents					
		Traffic police members		Pedestrians		Vehicle drivers	
1	Sex	**No**	**%**	**No**	**%**	**No**	**%**
	Male	68	86	61	74.3	72	94.7
	Female	11	14	21	25.7	4	5.3
	Total	79	100	82	100	76	100
2	Age	**No**	**%**	**No**	**%**	**No**	**%**
	15-25	1	1.4	33	40	16	21
	26-35	33	41.8	35	44	36	47.4
	36-45	42	53	11	12.2	16	21
	46 and above	3	3.8	3	3.8	8	10.5
	Total	**79**	**100**	**82**	**100**	**76**	**100**
3	Educational states	**No**	**%**	**No**	**%**	**No**	**%**
	1-10	8	10	13	15.8	18	23.6
	11-12	58	73.5	11	13.4	40	52.6
	Diploma	13	16.5	37	15.2	9	12
	Degree	-	-	21	25.6	9	12
	Total	**79**	**100**	**82**	**100**	**76**	**100**
4	Year of service (For drivers and traffic police's only)	**No**	**%**	**No**	**%**	**No**	**%**
	0-5	28	35.5	-	-	36	47.3
	6-10	12	15	-	-	17	22.3
	11-15	10	12.5	-	-	23	30.2
	16 and above	29	37	-	-	-	-
	Total	**79**	**100**	**-**	**-**	**76**	**100**
5	Class of operator license (for drivers only)	**No**	**%**	**No**	**%**	**No**	**%**
	1st	-	-	-	-	-	-
	2nd	-	-	-	-	16	21
	3rd	-	-	-	-	38	50
	4th	-	-	-	-	17	22.5
	5th	-	-	-	-	5	6.5
	6th or special operator license	-	-	-	-	-	-
	Total		**-**	**-**	**-**	**76**	**100**

According to the analysis of table I. above item one indicates among the respondents of traffic police members 68 or 86% of them were males and

11 or 14 % were females this may be indicator to the fact that the participant of the research paper were most of them males. Concerning the pedestrian 61 or 74.3% of the respondents was male and 21 or 25.6% were female. Respondents of drivers also 72 or 94.7% are male and 4 or 5.3% are females. This clearly shows that the target groups were most of them ware males.

Item two of this table shows the age range of the respondents and among these the highest number of traffic police members which is 36 or 53% were in the age group range of 36-45 years and the rest 33 or 41% were in age group 26-35 years, 3 or 3.7% were in age group 46 and above years and the rest 1 or 1.2 % were at the category of 15-25 years. Among the pedestrians also 36 or 4339 % were in the age group of 26-36 years, 33 or 40.2% were in the age group 15-25 years, 11 or 13.4% were in the age group of 36-45 and the rest 3 r 3.6 % were ages of 46 and above years. From the vehicle drivers 3 or 47.4% pf them were in the rang of 36-45 years group and the rest 8 or 103.5% were that the range or 46 and above years group.

And from this we can understand that among the traffic police members the highest number 53% of them were ranging group of age at the 36-45 years. And among the respondents of the pedestrians the highest number which 43.9% were ranging group of 26-35 years. And among the respondent of drivers he highest number of ranging group of 26-35 year.

Item 3 of the above the table indicates educational qualification and regarding their educational qualification. Among the respondents of the traffic police members the largest proportion which is 58 or 73/.4% of them were at the category of grade 11-12, the other 13 or 16% of them were diploma holders and the 8 or 10.1 % were at the category of 1-10 grades. From the pedestrians' respondents also 37 or 45% were diploma holders, 21, 25.6% were degree holders, 13 or 15.8% of them were at the category of 1-10 and the rest 11 or 13.4% were grade 11-12 group, 18 or

23.6% of them were in the category of grade 1-10 grip, 9 or 12% of them were in the category of diploma holders group and the rest 9 or 12% of then were in the category of degree holders.

This shows us majority of the respondents of traffic police members were at the category of 11-12 grads. Among the respondent of the pedestrians also the first highest number were diploma holders and the second highest number of respondents was also degree holders. From this we can understand among the pedestrians most of them were with a better knowledge. And from among the derivers the highest numbers of respondents were 11-12 category educational background.

Item 4 of the above table provides information about the years of services as a member of a traffic police and as a driver the traffic police members and drivers respectively. And among the respondents of traffic police members 29 or 36.7% of them were serving 16 and above years, 28 or 35.4% of them were serving at the range of 1-5 years 12 or 15% of them also serve in the range of 6-10 years and the rest 10 or 12.6% are served for the range of 11-15 years as a traffic police members. Among the driver respondents also none of them were serving 16 and above years, 36 or 47.3 % of them were serving at the range of 1-5 years , 17 or 22.3% of them also serve in the range of 6-10 years and the rest 23 or 30.2% are served for the range of 11-15 years.

And from this it is easy to understand that the highest number of respondents of traffic police members have 16 and above years work experience on traffic police sections. Also it is the indicator of th fact that the highest numbers of the respondents drivers were having 1-5 year's experience.

And from this it is easy to understand that the highest number of respondents of traffic police members have 16 and above years work experience on traffic police sections. Also it is the indicator of the fact

that the highest numbers of the respondents' drivers were having 1-5 year's experience.

The above table indicates that among the respondents of the driver 16 or 21% of them have a 2nd class or operating license, 38 or 50% of them have a 3rd class of operating license, 17 22.5% of them have a 4th of operating license. And this indicates that among the respondent drivers the highest numbers of operating incense are with 3rd class of operating license.

4.2 Overview of Traffic Accident in the Last Five Years

Table II opinion about number of traffic accident in relation with the number of vehicle for the past five years

No	Item	Respondents	
		Traffic policies'	
1	The number of traffic accident for the last five years in relation to the number of vehicles	**No**	**%**
	Increased	47	59.5
	Decreased	23	29
	Unknown	9	11.5
	Total	**79**	**100**

Source: Primary data, June 2009-2010

This table show that, for the questionnaire that number of accident for the last five year in relation to the number of vehicles. And among the respondent 47 or 59.4% of them were respond as it is increasing, and 23 or 29% of them were respond as it was decreasing, and the rest 9 or 11.35 respond as it was unknown.

And this analysis indicates that concerning the accident in relation to the number of vehicles the traffic police members respond show that its increasing and the interview respond by the National Road Safety officials indicates that it was decreasing.

And these leads the researcher to conclude that majority of the traffic police members have no proper information about the accident in relation to the number of the vehicles. They may have no any access to know information about the number of the accident in relation to vehicle numbers. Because the traffic police members always provided orientations about the accident and its effect.

4.3 Assessment of Measures Taken

Table III. Opinion about conducting research and providing orientation

No	Item	Respondents	
		Traffic police members	
1	Was the orientation provide concerning the traffic accidents?	**No**	**%**
	Yes	58	73.5
	No	2	2.5
	Not enough	19	24
Total		**79**	**100**
2	Were the measures performed to minimize the traffic accident supported by research?	**No**	**%**
	Yes	27	34
	No	41	52
	Unknown	11	14
Total		**79**	**100**

Source: Primary data, June 2010

The respondents of questionnaires on table III item 1; which is asked to the traffic police members concerning the orientation provided them was responded; yes by 58 or 73.5%, responded no by 2 or 2.5% and responded as such not enough by 19 or 24%. Item two of this table was about the measures performed to minimize the traffic accident and it was asking weather it was supported by research or not? And the respond

was yes by 27 or 34%, no by 41 or 51% and it was not unknown by 11 or 14%.

And these analyses indicate that there is an orientation provided to the traffic police members every day to minimize the traffic accident, but it is not supported by research, even if the literature indicate to have a research. So it is obvious to know that; Because of no research about the cause of accidents, it may be difficult to know the exact and real causes. And if the real cause of an accident is not identified exactly, the task performed to minimize the accident may not be easy.

4.4 Causes for Traffic Accident

Table IV. Factors that high contribution for the cause of accidents

No	Item	Respondent's					
		Traffic police		Pedestrians		Drivers	
1	What is your opinion about the main leading factor for the cause of accident in the city?	No	%	No	%	No	%
	Roads problem	3	3.7	17	20.7	14	18.4
	Vehicles Problem	3	3.7	6	7.3	4	5.2
	Driver's behavior problem	47	59.4	36	43.9	26	34.2
	Pedestrian's problem	5	6.3	7	8.5	8	10.5
	Problems on providing driving license	11	13.9	13	15.8	12	15.7
	Unknown problems	10	12.6	3	3.6	12	15.7
Total		**79**	**100**	**82**	**100**	**76**	**100**

Source: Primary data, June 2010

As it is shown in the table IV among the respondent's of the questionnaire that what was your opinion about the main contributing factor for the cause of accident in the city? Among the traffic police members responded that it was drivers behavioral problem, 11 or 13.9% of them responded it was a license providing problem, 10 or 12.6% of them responded that it is the contribution of all; and all have the same

and equal contribution, and the rest 5 or 6.3% responded and again 3 or 3.7%, for the pedestrians problem, road problem and vehicle problem respectively.

Among the pedestrians respondents also 36 or 439% responded drivers behaviors as the main leading factor, 17 or 20.7% of them responded road as the main leading factor, 13 or 15.8% them were responded the driving license providing problem as the main factor and the rest pedestrians problem by 7 or 8.5%, vehicles problem by 6 or 7.3% and 3 or 3.6% of them were responded as it was unknown and had other problems.

From the drivers respondents also 26 or 34.2% responded drivers behaviors as the main leading factor, 14 or 18.4% of them responded road as the main leading factor, 12 or 15.7% of them were responded the driving license providing problem as the main factor and the rest pedestrians problem by 8 or 10.5%, vehicles problem by 4 or 5.2% and 12 or 15.7% of them were responded all have the same and equal contribution. The interview question about the cause of accident were also responded by the traffic police higher rank officers in Addis Ababa Traffic Controlling and investigation department said.

> *"… The driver behavioral problem is the main factor for the cause of accident. This is concluded after the following practices.*
> *Most of the accident occurred on the roads which have no problem and these indicates the contribution of roads were less. Most of the accidents participants' vehicles are also with out any technical problem; this shows the contribution of vehicles problem is not that mach. Most of the drivers who commit accident were experienced drivers with more than 2 year experience of operating a vehicle.*
> *From this we can understand also the contribution of providing license is not as such.. So the drivers behavioral problem is the most one factor, in addition to this the pedestrians' uses of road also have contribution for the cause accident beside negligent drivers…"*

From the above data analysis it can be seen that the drivers' behavioral problem is the main factor responded by the highest number of respondents of the all target groups. So this idea is also similar with the literature review that says the most leading factor among others. On the other factors for the cause accidents, there is disparity of opinion on the respondents. According to the traffic police members; providing

operating license had a great problem was taken as a second factor for the accident but as the respondents of pedestrians and drivers roads were the second major factor for the cause of accident.

By adding all the three respondents groups; the researcher identifies the following order of factors:

1. Driver's behavioral problem
2. Problem of providing driving license
3. Roads problem
4. Pedestrian's road use problem
5. Vehicle problem

Therefore, it is possible to deduce that the major factors that have higher contribution for the cause of accident were drivers' behavioral problem. And it is expressed by mere negligence, over confidence, internationally violating the transport rules and others. Problem of providing operating license's also the one factor selected by the respondents of the traffic police members. The reason about the disparity of the respondents were because of the traffic police members have opportunity to look the problem in relation to the providing the license better than others respondents. And from the driver and pedestrians view road problem was the second main factor, but for the time being it is clear to understood from the analysis of table that problem of providing license is the second main factor for the cause of accident contrary to this the interviewee responds the respond of that said pedestrians problem is the second factor.

4.5 Reference of the Measures Taken

Table V. Appropriateness of measures taken to minimize the traffic accidents

No	Item	Respondents	
		Traffic police members	
1	What does the task performed by he	No	%

	traffic police to minimize the traffic accidents seem?		
	Effective	35	44.5
	Difficult to know	22	27.8
	Not effective	22	27.8
Total		**79**	**100**

Source: Primary data, May 2009-June 2010

According to table V, among the respondents of traffic police members 35 or 44.5% responded that the task performed by the traffic police to minimize traffic accidents was effective, 22 or 27% of them responded as it was difficult to know and 22 or 27.8% of them responded as it was not effective.

From the analysis of the above data the researcher stand with the traffic police members that the tasks performed by the traffic police department to minimize the traffic accident were effective as the members of the traffic police opinion.

Table VI. Opinion about the effectiveness of traffic police measures

No	Item	Respondents			
		Pedestrians		Drivers	
1	What is your opinion about the task performed by the traffic police department to minimize the traffic accident?	**No**	**%**	**No**	**%**
	It is good	32	39	41	54
	It is enough	23	28	17	22.3
	It is lower than expected	27	33	18	23.7
Total		**82**	**100**	**76**	**100**
2	Do you believe that the controlling measure of traffic polices on the transport rule violators had positive impact to minimize the traffic accident?	**No**	**%**	**No**	**%**
	Yes	-	-	46	60.5
	No	-	-	30	39.5
Total		**-**	**-**	**76**	**100**

Source: Primary data, May 2009-June 2010

From Table VI, we can see that the opinion about the task performed by the traffic police department to minimize the traffic accident, that 32 or 39% of the pedestrians responded that it was good; 23 or 28% of them responded as it was enough and the rest 27 or 33% of them responded as it was lower than expected. The same question responded by the drivers also shows that, 41 or 54% of them responded as it was good, 17 or 22.3% them responded as it was enough and the rest 18 or 23.7% responded as it was lower than expected.

Question 2 of the table VI is about weather measures of traffic police on transport rule violators had positive impact to minimize the traffic accident or not. Among the respondents, 46 or 60.5% of them responded yes and, 30 or 39.5% of them respond no.

The respondents believed that the task performed by traffic police department to minimize the accident was effective both by the pedestrian and driver with the highest number, and this indicates that the measures taken to minimize the traffic accident were perceived as effective by the pedestrians and drivers; even if it is difficult to decide about some one effectiveness by personal opinions with out practical evidence.

Item 2 questionnaire also responded by the majority of drivers as they believed that the controlling measures of traffic police on transport rule and regulation violators has positive impact to minimize the traffic accident. From these concepts it is easy to understand that the drivers also have positive attitude toward the controlling measure of the traffic police department on rule violators, and also practice helps to minimize traffic accidents.

4.6. Cooperation between Police and others Stakeholders

Table VII the relationship with other stakeholder

No	Item	Respondents	
		Traffic police members	
1	What is the relationship of the police department with other stakeholders?	**No**	**%**
	Very nice	16	20.2
	Medium	31	39.2
	Less	32	40.5
Total		**79**	**100**

Source: Primary data, May 2009-June 2010

Table VII is the questionnaire about the relationship of the police department to other stakeholders who have responsibility to minimize the traffic accident and 16 or 20.2% of them responded as it was very nice, 31 or 39.2% responded it was medium and 32 or 40.5% of them responded as it was less.

The interview respondent from Addis Ababa Road Authority and Addis Ababa Transport Bureau similarly said.

> *"…. There were a good coordination and cooperative relationship between the traffic police and other stakeholder before two years but gradually the communication become weak and currently it is almost not…" more than 40% of them in line to the respondent's point of view responded that there was very less coordination.*

The interviewee response also indicates the same result. From these analysis and interview respondents, these researcher understands that before two years there was a good coordination and corporation by the Traffic Police department and other stockholder like National Road Safety, Addis Ababa Road Authority and Addis Ababa Transport Bureau but currently the coordination is very week. It is believed that coordination of stakeholders is necessary but the current practice

ignores this principle. Because of this the measures taken to minimize the accident show some limitation or gap.

4.7. Pedestrians Situation

Tale VIII pedestrian's use of roads

No	Item	Respondents	
		Traffic police members	
1	What is your opinion about the pedestrian's use of roads?	**No**	**%**
	It is good	3	3.6
	It is fair	26	31.7
	Improperly	53	64.6
Total		**79**	**100**

Source: Primary data, May 2009-June 2010

As shown in table VIII above 3 or 3.6% of respondents for questionnaire that was their opinion about the pedestrian's use of roads believed that it was good, 26 or 31.7% of them responded as it was fair and 53 or 64.6% responded as it is improper.

As it is shown from the table majority of the pedestrian respondents witnessed that the pedestrian use of road was improper, and this improper use of road by pedestrian may be one of the factors contributing for the causes of accident.

4.8. Percentage of Injured People

Table X condition of the victim during the accident

Relation ship	1998E.C	1999E.C	2000E.C	2001 E.C	2002 E.C	Total	%
Driver	20	14	16	15	20	85	4.7
Pedestrian	289	296	326	321	345	1577	86.5
Passenger	29	35	38	28	30	160	8.8
Total	338	245	380	364	395	1822	100

Source: Accident report May 2009-June 2010

As shown in table X among the total 1822 death accidents occurred in the last five years; 85 or 4.7% of the victim were drives, 1577 or 86.5% them were pedestrians and the rest 160 or 8.8% were passengers. This clearly shows that most of the victims were pedestrians. Among the common problems of pedestrians.

Crossing the road with out all due conscious and reasonable speed, crossing a road not in a straight and short line, crossing an intersection diagonally, crossing a road out of the marked crossing (Zebra crossing) even if there is a zebra crossing, walk on a road by neglecting the side walk, playing on a road, not walking on the extreme left edge and crossing a road with out considering the amount and condition of traffic are some of the common problems.

The reason why pedestrians make such fault may be lack of awareness, problem of roads such as not suitable or no side walk for pedestrians or occupied by goods sellers and no mechanism that enforce the pedestrians to govern according the transport rule and regulations.

4.9 Assessment of Accident Types over the Last Five Years

Table XI Accidents data recorded for the last five years

Year	Accident						
	Death	Heavily injured	Slightly injured	Property damage	Total no accident	Estimated cost of damaged property	No. of people died
1998E.C	305	563	1482	7839	10189	22,436,120	338
1999E.C	320	731	1381	8111	10543	26,268,564	345
2000E.C	374	823	1259	8558	11014	27,300,115	380
2001E.C	347	640	850	7112	8949	23,049,667	364
2002E.C	381	594	735	6459	8169	29,603,014	395
Total	**1727**	**3351**	**5707**	**38079**	**48864**	**128,657,480**	**1822**

Source: Accident report, May 2009-June 2010

Table XI indicates that from the 2005/06 (1998 E.C) to 2009/10 (2002 E.C) 48,864 car accidents were recorded in Addis Ababa city; among these accidents 10,785 or 22.07 percent were injury which were

happened on the humans injury and the rest 38, 079 or 77.93 percent were only car damages. The costs of damaged property were estimated around Birr 128,657,480.00 According to the above table 1,727 accidents were death accidents; 3,351 were heavily injury accident and the rest 5,707 were an accident of slightly injured. Even if the number of accident of death were 1,727; persons died on this number of accident were 1,822. This means that in some of the one accident more than one person died. When we see the trend of the accidents it was increasing in 2005/06 and 2007/08, but after that for the consecutive two years it was decreasing; even if the number of death accident were increasing except in 2008/09.

This analysis indicates that the number of accident has a tendency to decrease for the last two years. The number of slightly injured also decreased consecutively for the last five years, the number of accident which was heavily injured recorded data shows that it was decreasing for the last two years, but the number of fatality increased form time to time except 2008/2009 (2001E.C) which was decreased by 7.2%. Even if the number of fatality accident were increased for the last five year, numbers of fatality per 10000 vehicles were decreased.

4.10. Accidents on People

Table XII. Accidents record that show only personal injury

Year	Injured persons			
	Death	**Heavily injured**	**Slightly injured**	**Total**
1998E.C	338	563	1482	2383
1999E.C	345	731	1381	2457
2000E.C	380	823	1259	2462
2001E.C	364	640	850	1854
2002E.C	395	594	735	1724
Total	**1822**	**3351**	**5707**	**10880**
Percentage (%)	**16.7**	**30.8**	**52.5**	**100**
Accident per day	**0.99**	**1.8**	**3.1**	**5.9**

Source: Accident report, May 2009-June 2010

Table XII indicates that the number of accident which were only personal injury by excluding the property damage, and from these table we can understand 10,880 persons were injured in the last five year by different level of injury. Among these number of injured persons 1,822 or 16.7 percent of them were died, 3351 or 30.8 persons were heavily injured and the rest 5707 or 52.5 percent of them were slightly injured.

The number of accident analyzed per days also show that almost one fatality recorded per day and 18 peoples are heavily injured per 10 days and more than 3 peoples are slightly injured per day. And totally almost 6 persons are injured per day in different type of accidents. The researcher conclusion from these data analysis was that the number of personal injury decreased more for the last two years and with the number of vehicles increasing and expansion of roads. This is also an indicator of the traffic police organization effectiveness.

4.11 Gender Situation of Drivers Committing Accident

Table XIII. Sex of drivers who commit traffic accident

Sex	Year						
	1998E.C	1999 E.C	2000E.C	2001E.C	2002E.C	Total	%
Male	7907	8415	9125	7843	7452	40742	83.3
Female	182	224	288	253	214	1161	2.4
Unknown	2100	1904	1601	853	503	6961	14.2
Total	**10189**	**10543**	**11014**	**8949**	**8169**	**48864**	**100**

Source: Accident report, May 2009-June 2010

The above table shows that among the drivers who commit an accident recorded totally 48,864 for the last five year 40,742 or 83.3 percent of them were male and 1161 or 2.4 percent of them were female and the rest 6961 or 14.2 percent of them were unknown which means heat and run cases.

From the above data analysis we can observe that most of the accidents were committed by male drivers. The accident committed by female drivers is very less. The accident committed by male or female drivers

decreased for the last two years like that of the total number of accidents.

4.12 Gender of Drivers Who Lead People to Death

Table XIV sex of the drivers who commit death accident

Sex	Year						
	1998E.C	**1999 E.C**	**2000E.C**	**2001E.C**	**2002E.C**	**Total**	**%**
Male	265	272	324	296	328	1485	85.9
Female	-	1	3	3	1	8	0.46
Unknown	40	47	47	48	52	234	13.5
Total	**305**	**320**	**374**	**347**	**381**	**1727**	**100**

Source Accident report, May 2009-June 2010

Table XIV shows the sex of drivers who a committed only fatale injury. According the table among recorded 1727 death accidents 1485 or 83.3 were committed by male drivers, only 8 or 0.46 percent of the accidents were committed by the female drivers. And the rest 234 or 13.5 were not known. From this we can understand that fatal accident committed by female drivers is almost nothing because it is less than 0.5 percent. Even if the number of female drivers in relation to the number of male drivers is not exactly identified, it is clear that the number of male drivers is too much greater than female drivers. The number of fatality accident committed by the female drivers in relation with the total accident committed by females were also very less.

From this analysis it is clear to understand that the accident committed by female were become less because of the female drivers are not involved in commercial vehicles driving, the driving system of females being safe, and females are mostly careful and with limited speed, again most of the female drivers may not drive after drinking alcohol.

4.13 Assessment of License Types for Drivers Who Committed Traffic Accident

Table XV. Class of operating license who committed traffic accident

No	Class of operating license	Year						
		1998E.C	1999 E.C	2000E.C	2001E.C	2002E.C	Total	%
1	1st class	38	49	43	35	35	200	0.4
2	2nd class	1650	1895	2160	1840	1779	9324	19
3	3rd class	3341	3942	4271	3222	3091	17867	36.6
4	4th class	1553	1443	1570	1657	1444	7667	15.7
5	5th class	1404	1203	1229	1192	1102	6130	12.5
6	Special license	28	33	45	31	43	180	0.4
7	With out license	75	74	95	119	172	535	1
8	Unknown	2100	1904	1601	853	503	6951	14.2
	Total	**10189**	**10543**	**11014**	**8949**	**8169**	**48864**	**100**

Source: Accident report, May 2009-June 2010

Table XV also concerning the class of operating license and it shows that among those who commit the traffic accident 200 or 04 percent of them were with 1st class operating license which means license of cycle, 9324 or 19 percent of them with 2nd class operating license, 17867 or 36.6 percent of them were with 3rd class operating license, 7667 or 15.7 percent of them were with 4th class operating license, 6130 or 12.5 percent of them were with 5th class of operating license, 180 or 0.4 percent of them were with special operating license like grader, Loader, Excavator etc operators. 535 or 1 percent of them were with out driving license, and the rest 6961 or 14.2 were unknown like that of other information.

Most of the accidents were committed by those who have 3rd class operating license for the last five year; and also those who have 2nd class operating license drivers are also the next after the 3rd class operating license drives. Among the total accident recorded for the last 5 years more than 60% of the accident was committed by the drivers who have 3rd and 2nd class operating license.

From the above analysis it can be concluded that drivers who have 2nd and 3rd class operating license may drive mostly private cars and commercial cars (including taxi) respectively. This was also an indicator that most of the cars in the city are driven by these two class of cars are relatively the highest number in the city. These may be because of the taxi movement (even if the number is not that much like that of private and other commercial cars) on the road is for long time per day and this lead the exposure of the taxi to commit the accident very high.

In addition to their; they are also intended to maximize their profit. Because of these they compete each other and these also leads them drive faster. And this may have an effect of committing accident. Taxi driver's drive for long time with out rest every day and it makes them more confidential about driving and it also makes them negligent or lead to fatigue.

4.14. Drivers Who Violate Traffic Rules

Table XVI drivers charged for violation of transport rules categorized by the code of vehicles

Year	Vehicles (Categorized by plate number/code)						
	Taxi (1)	**Private vehicle (2)**	**Commercial (3)**	**Gov.Orga. (4)**	**Non.Gov org (5)**	**Others**	**Total**
(1998 E.C)	3452	34004	48361	15070	3570	4367	108824
(1999 E.C)	55515	24102	9013	1164	577	986	91357
(2000 E.C)	82429	24469	21016	864	159	789	129726
(2001 E.C)	115565	60449	62341	21645	4252	3770	268022
(2002 E.C)	113142	96413	98154	20434	9988	11335	349466
Total	**370103**	**239437**	**238885**	**59177**	**18546**	**21247**	**947395**
Percents	**39**	**25.3**	**25.2**	**6.2**	**2**	**2.2**	**100**

Sources: Accident Report, May 2009- June 2010

According to the table XVI, analysis 947,395 drivers were charged for the violation of different type of transport rules and regulations. Among those violators 370,103 or 39% of them were code (1) private vehicles drivers, 238,885 or 25.2% of them were commercial vehicles driver 59177 or 6.2 of them were government organization vehicles driver

18546 or 2% of them were red cross and non governmental associations vehicles driver and the rest 21,247 or 2.2 of them were other than those stated above like cars of Diplomatic, Non governmental organization, police, defense force vehicles drivers. In addition to these the table also indicates that the numbers of drivers charged were increased every year; except in 2004/05 (1998 E.C).

From these we can understand that most of the rule violators were taxi drivers. The drivers of private and commercial cars also follow with almost similar percentage rule and regulation violators following the taxi drivers. The reasons for these analysis acceding to the research decision were that most of the taxi were on duty with out considerable rest in the city again as it is stated above on the analysis of table XIV the number of private and commercial cars are much in number when they are compared with the other type of cars. Because of this there movement on the road and their number had contribution to be the measure rule and regulation violators.

And the measures taken on these major accident participants also very high and as it is indicated in the table these increasing measures taken to rule violators has an impact on the number of accident. Even the numbers of traffic police members have no considerable change for the last 5 years, the number of charged rule violators increase form time to time. And this may be another effective measure performed by the traffic police department and it may have a great contribution to minimize the accident number.

4.15 Reasons for Accident over the last Five Years

Table. XVII Cause of the fatal accident

No	Cause of accident	1998E.C	1999 E.C	2000E.C	2001	2002	Total	%
1	Driving while dinking alcohol	2	1	-	-	-	3	0.17
2	Driving without following the right side of the road	25	11	28	30	23	117	6.7
3	Not coding other vehicles	2	2	7	14	8	33	1.9
4	Not coding pedestrians	230	268	302	256	280	1338	77.5
5	Violating the rule about the distance of two vehicle	-	1	3	6	16	26	1.5
6	Suddenly turnover after overtaking	-	2	1	-	-	3	0.17
7	Drive by exceeding legally determined speed	10	2	5	8	-	25	1.44
8	Improperly overtaking a vehicle	11	12	3	2	7	35	2
9	Improperly turnover	1	2	4	12	22	41	2.3
10	Violating order of police	-	1	1	-	-	2	0.11
11	Improperly operating a vehicle	3	3	7	4	9	26	1.5
12	Improperly operating a passenger	4	3	11	5	13	36	2
13	Vehicles break problem	1	1	-	1	1	24	0.23
14	Pedestrian problem	1	1	-	2	-	24	0.23
15	Other	1	-	-	1	-	2	0.11
16	Unknown	14	10	2	4	2	32	1.8
	Total	350	320	374	347	381	1727	100

Source: accident report, May 2009- June 2010

According tale XVI, the cause of the accident were analyzed by the investigators and recorded by statistic recorders in Addis Ababa Police Traffic Controlling and investigation department. And as it is shown in the table for the last five years among the totally occurred 1727 fatal

accidents 1338 or 77.5% were caused by not coding pedestrian. Driving with out following right side of the road is also stated as a cause for 117 or 6.8%. Improper turnover also caused for 41 or 2.3% of the accidents. Improperly over taking a vehicle and improperly loading a passenger were caused for 35 or 2% and 36 or 2% of the total fatal accidents the rest causes had contribution less than 2% for each.

This implies that the major causes of accident for the last five year were not coding for pedestrians and the second major cause were driving without following the right side of the road, the third major cause was improper turnover. The other cause of accidents like not coding other vehicle, improperly operating a vehicle, violating the rule about the distance between two vehicles and driving by exceeding legally determined speed are among the common cause of accidents.

Beside the above information the measure taken on those transport rule and regulation violators, specially on those stated above as a major cause of accident were show some progress for the last two years. From this it is easy to understand that because of the measure taken on those taken as main causes of accident rule and regulation violators increased the number of accident decreased. And this is also an indicator of traffic police performance effectiveness. Even if the enforcement mechanism were not supported by research the controlling systems for the last two years were effective. (See appendix –H to understand about the measure on rule violators).

4.16. Summary, Conclusion and Recommendation

4.16.1. Summary

The main purpose of this study was to assess, investigate and examine the effort laws directives and measures to minimize the traffic accident in the case of Addis Ababa police. Moreover, the study was carried out in sub-city Police Traffic Controlling and investigating main sectors and other stakeholders. At the Addis Ababa City police traffic controlling and Investigation department the current recorded accident data documents were reviewed and members of the department were taken as a sample population. On the other hand other sub-city traffic main section members were also taken as sample population.

The study employed three basic instruments for data collection method; these are questionnaire and document review. In addition to these, interview was conducted with public organization officials to get addition information and to stabilize the study. The questionnaires were distributed to the pedestrians and motor vehicles drivers to gather the information.

In order to achieve the purpose of this study, the following basic questions were raised

- What are the current conditions of traffic accidents?
- What the main problems faced that hinder the minimization of traffic accident?
- Who are the main stakeholders in minimizing traffic accident other than the police department?
- Is there any gap between the police and stakeholders to fight against traffic accident together?
- What arte the effective measures that should follow in order to minimize the traffic accident?
- What are the challenges and required regulative measures of traffic control?

The data obtained were analyzed by using percentage and simple mathematical methods. Based on the analysis the following findings reached up on.

- Most of the respondents of traffic police member's pedestrians and driver were males only 36 or 15.2% of them among the total respondents were females.
- The majority of the respondents, 53% of the traffic police member were aged between 36-45 years. Where as the largest number 44% and 47% were the pedestrians and vehicles drivers with age group of 26-34 year respectively.
- Concerning educational qualification the largest number of percentage 45.2% of the pedestrians were Diploma holders, 52.6% of the drivers and 73.5% of the traffic police members were at the category of 1-12 grades.
- With regard to year of service on job 37% of the traffic police members had about 16 years service experience and concerning the drivers the largest number 47.3% among the respondents were 0-5 years experience. With regard level of driving license 50% of them among the drivers have 3rd class operating license.
- According to the traffic police member respond also the number of traffic accident in relation to the number of vehicles also increased for the last five years responded by 59.5% of them, which was the majority respond, but the data and the information from the NRASA indicated it is tremendously decreasing.
- Concerning providing proper orientation which is relevant to minimize the traffic accident 73.5% of the respondents respond yes it is provided. The interview respond also approved that the orientation provided to the traffic police members were aims to provide information and what kind of measures should performed by them.

- About the measures taken by the traffic members were whether supported or not by research; among the respondents 52% of them respond as it was not supported by the research.
- For the questionnaire that the main factor for the cause of accident among the respondents of traffic police member, pedestrians and vehicles drivers by highest number of respondent, 59.5%, 44% and behavioral problem; in addition to this the interview respond also approved this idea.
- Concerning the effectiveness of the task performed by the traffic police members, among the respondent of the traffic police members with the highest number 44.4% respond as it is effective, by the pedestrians and vehicles drivers also with highest number 41% and 54% respectively responded and the interview respond also support this idea even it has many constrains that restrain effectiveness of the traffic police performance.
- Concerning the relation ship of police organization with other stakeholders the respondent with the highest number 40.5% of them respond it is very low and 39.5% of them respond it is medium the interview respond also shows that before two and three years as if it has a good relation and cooperation but currently it is detached.
- Concerning Pedestrians use of road also among the respondents of pedestrian and majority use of road also among the respondents of pedestrian's majority which 64.6% of them respond as it was improper use of rood. And 86.5% of victims of fatality for the past five years were pedestrians. Beside this the interview respond indicates that; even if the improper use of road is practiced there is also shortage of pedestrians pass way payment and luck of awareness to use properly the road according the law.
- Concerning accident; every day about six people were injured; and among those people pone died on average for the last five years.

- Concerning total accident 83.35 of were committed by male drivers, only 2.4% were by females' drivers; about the fatale injury also 85.9% by male drivers and only 0.465 were by female drivers for the last five years. The rest were unknown.
- For the past five years most of the accident committed by drivers who have 3rd class operating license. Which means the car operated by this class operating license were mostly taxi and other commercial vehicles.
- The measure taken on rule and regulation violators also increased from time to time for the last five years.
- According to the document view that main causes for fatal accidents for the last five years were not coding pedestrians, driving with out following the right side of the road, improper turnover, over taking of a vehicle and improperly loading a passenger caused for more than 905 of the fatal accidents and the rest causes had contribution less than 100%. But according the open indeed questionnaire the main causes were driving above legally determined speed, driving after drinking alcohol, and not coding pedestrians are the major causes.

4.16.2. Conclusion

According the data analysis and findings the researcher concludes that majority of the traffic police members have no proper information about the accident in relation to the number of vehicles. They may have no any access to new information about the number of the accident in relation to vehicle numbers. These analysis also indicates that there is an orientation provided to the traffic police members every day to minimize the traffic accident, but it is not supported by research. So it is obvious to know that because of lack of research about the cause of accidents, it could be difficult to know the exact real cause. If the real cause of an accident is not identified properly, the task performed to minimize the accident could be a challenging task.

Concerning factors that have higher contribution for the cause of accident the literature review says the most leading factor of the traffic accident is the driver's behavioral problem. On the other hand there are also other contributory factors these are problem of providing driving license, roads problem, pedestrian's road use problem and vehicles problem. Drivers behavioral problem is expressed by were negligence, over confidence, intestinally violating the transport rules and others.

The tasks performed by the traffic police department to minimize the traffic accident was effective according the findings of the study. Besides this majority of drivers have positive attitude towards the controlling measure of the traffic police on rule violators, and also the practice helps to minimize traffic accidents.

Concerning the coordination with other stakeholders literature review indicates that coordination is one of the basic principle to minimize the accident but the practice of Addis Ababa Police commission week coordination with others stakeholders.

Concerning the pedestrians use of road also the finding of the research indicates the pedestrian use of road was improper and this leads them to be injured by the accidents. The reason why pedestrians make such a fault is because of lack of awareness, problem of roads such as not suitable or no side walk for pedestrians or occupied be goods sellers, and no mechanism that enforce the pedestrians to govern according the transport rule and regulations.

Concerning the number of accidents it has a tendency to decrease for the last two years, the number of slightly injured decreased consecutively for the last five years, the number of accident which was heavily injured recorded data shows decreasing for the last two years, but the number of fatality increased from time to time expect 2008/09 (2001 E.C). Even if the number of fatality accident were increased for the five year, numbers of fatality per 10000 vehicles were decreased. This is also an indicator of

the traffic police performance were effective. Concerning the drivers who commit accident for the last five year most of them were drivers with 3rd class operating license.

Concerning the major causes of fatal accidents for the last five year; not coding pedestrians, driving with out following the right side of the road, improper turnover, improper over taking of a vehicle, improperly loading a passenger, driving above legally determined speed and driving after drinking alcohol were the common ones.

Finally the effort and measures to minimize the accident by the traffic police members were in a good condition even if it has shortage of man power and other previously stated problems.

4.16.3. Recommendations

On the basis of the above finding and conclusion the following recommendations are forwarded:

- Addis Ababa Police commission should conduct a research within a given time internal to assess and identify the contributory factors and main cause of accidents. Because it helps to improve the job performance and to give emphasis and develop counter measures on the main cause of accidents and to evaluate their effectiveness.
- Addis Ababa Police Commission should teach children and adults about road safety and uses of road using the community policing officers or purposely assigned traffic safety teachers in the schools and around people gathering place and at any occasion that peoples found meet together. And this help to minimize the traffic accident on the pedestrians, which are the major victims among the others road users in the city.
- Addis Ababa police Commission should asses the demand and Addis Ababa city traffic police human resource and assign adequate number of man power with the necessary equipments and knowledge to enforce the transport rule and regulation efficiently.

- The enforcement mechanism should be supported by research and also focus on those drivers who are involving in accident mostly like taxi and other commercial vehicles. And have to give priority to control the major causes of accidents like not coding pedestrians, driving with out following the right side of the road, improper turnover, improper over taken of a vehicle, improperly loading a passenger, driving above legally commission should and driving after drinking alcohol.
- Addis Ababa Police Commission should use different mechanisms of promotion to aware the community and provide actual information about the situation and effects of accident and as much as possible try to enhance the community to stand with the police and support the enforcement.
- Addis Ababa Police Commission should make coordination with other stakeholder like national road Safety, Addis Ababa Road Authority, Addis Ababa Transport Bureau and Hospitals in the city. Because these organizations are also concerned parties about minimizing the road traffic accidents and the role of these organization is very high and important.

Appendices

List of Appendices

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DECLARATION

I under designed declare that this senior essay is my original work, prepared under the guidance of Ato Filipose Aynalem. All sources of materials used for the manuscript have been duly acknowledged

Name: _____

Signature: _____

Place of Submission: _____

Date of Submission: _____

This paper has been submitted for examination with my approval as the university college advisor.

Name:_____

Signature:_____

Date:_____