

**Risk Factors and Implications of Road Traffic Accident in
Oromia Special Zone Surrounding Finfine**

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**June 2016
Jimma Ethiopia**

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Oromia Special Zone Surrounding Finfine**

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**A Thesis Submitted to the Department of Sociology in Partial Fulfillment
for the Requirements of the Degree of Master of Arts in
Sociology and Social Policy**

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Declaration

I, Yetimgeta Shiferaw, hereby declare that; this thesis entitled, *Risk Factors and Implication of Road Traffic Accident in Oromia Special Zone Surrounding Finfine* is my original work. It has not submitted, in full or part, for the attainment of any academic degree elsewhere. This work has also accredited the views of the research participants. I have fully acknowledged the materials and pieces of information used in the study. The reporting procedures comply with a regulation of the University.

Declared by Yetimgeta Shiferaw

Signature _____

Date of Submission _____

This thesis has been submitted for examination with my approval as university advisor

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Place: Jimma University School of graduate studies and department of Sociology.

Date of Submission _____

Dedication

This research is dedicated to

My late father

ATO SHIFERAW WOLDEAMANUEL TULLU

Unfortunate to see the fruits of your son

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List of Acronyms and Abbreviations

AU	African Union
CSA	Central Statistical Agency
ERA	Ethiopian Road Authority
<i>etal</i>	and others (from Latin <i>et alii</i>)
Etc.	Etcetera
FDRE	Federal Democratic Republic of Ethiopia
FGD	Focus Group Discussion
G.C	Gregorian Calendar
GO	Governmental Organization
i.e.	That is
ICT	Information Communication Technology
IRTAD	International Road Traffic Accident Database
NGO	Non-Governmental Organization
No.	Number
OSZSF	Oromia Special Zone Surrounding Finfine
RTA	Road Traffic Accident
RTL	Road Traffic Injury
UNECA	United Nations Economic Commission For Africa
WB	World Bank
WHO	World Health Organization

Acknowledgment

I wish to express my sincere gratitude to my supervisors, Dejene Gemechu (PhD, Associate professor) and Nega Jibat (Assistant Professor) for their patience, encouragement and support in shaping and reshaping the structure of this thesis. They provided invaluable insights that have guided my thinking and understanding starting from title selection till the final report.

Above all, I would like to express my gratitude to the thesis supervisors: Dr. Dejene Gemechu I remained so grateful to the pleasant assistances and academic insights shown by Dr. Dejene. His contributions had continued in editing and re-structuring the thesis full commitment of taking the study to its end. His academic guidance and intellectual support have been with me since course of advanced research method.

I remained so appreciate to the cordial assistances and educational insights shown by Assistant Professor Nega Jibat. The friendly approaches and sympathetic understanding of Nega Jibat has been unforgettable. His academic guidance, intellectual support and moral encouragement have been with me since program registration.

My special gratitude is to all other member of staff at the department sociology for encouragement, facilitation with in-kind support.

I would also like to thank all the key informants, interviewees and focus-group discussants for answering my questions and enabling me to complete this study.

Abstract

This study was conducted to identify the trend, pattern, risk factors and implications of road traffic accidents in Oromya special zone, surrounding Finfine. It employed mixed method, with cross-sectional descriptive design. Interview with pedestrians, drivers, accident victims, traffic police and health expert was done. The sample of the study comprises 24 interviewee participants and 1 FGD with 7 participants. All RTAs aggregated statistical record data of five year was collected. The trend of RTAs from 2011-2015 indicates the alarming rate of problem. The increment of economic cost within the trend has significant and it extremely increased at the end of the study year. The study has confirmed that not giving priority to pedestrians, over spending and not keeping the distance between the vehicles were major behavioral risk factors. Further, road quality and black spot areas were the major identified road and environmental factors. Tyres, steering and brake problems were the major identified vehicle related factors. Besides, one of the core findings of the study was the socio-economic implication of RTAs on the victims. In this regard, Health effect, family disorganization and divorce, joblessness, economic dependency and difficulties to develop coping strategies were the identified socio economic implications associated with RTAs. Results on rule and regulation gaps of road safety indicate that system of offering driving licenses, poor medical diagnosis and night time driving has poor law enforcement. The result underlined the significance of the policy enforcement. Based on the findings of the study, it was recommended that, road safety education should be provided in schools, at work areas and mass medium in towns should strengthen the future plan of government road safety education by health extension workers.

Key terms: Road traffic accident, death, injury

Chapter One

Introduction

1.1 Background of the Study

In the history of road traffic accident the first accident was recorded in 1896 with in this accident two death was recorded in Great Britain from this small beginnings terrible stream of death and injury has followed (Norman 1962). It is estimated that road crashes killed over 1.2 million peoples worldwide and injured a further 20-50 million (World Health Organization 2009). Road traffic injuries are a major but neglected global public health problem, requiring concerted efforts for effective and sustainable prevention (Peden Margie; Richard Scurfield; David Sleet; Dinesh Mohan; Adnan Hyder; Eva Jarawan and Colin Mathers 2004).

Road Traffic Accident (RTA) is defined as a collision or incident involving at least one road vehicle in motion that can be on a public or private road to which the public have the right of access (WHO 2009). The road traffic accidents (RTAs) are projected to become the third largest contributor to global disease burden by 2020 (Penden *et.al* 2004). Road traffic accidents contribute to poverty by causing deaths, injuries, disabilities, grief and loss of productivity and material damages (Damian 2006:1). An estimated average of 3,242 peoples die daily by road accidents (WHO 2009). The direct economic costs of global road crashes have been estimated at US\$ 518 billion so far, with the costs in low-income countries estimated at US\$ 65 billion exceeding the total annual amount received in development assistance.”(Penden *et.al* 2004:5).

The highest burden of injuries and fatalities in developing countries are shared among pedestrians and passengers of buses and minibuses (IRTAD 2007). Likewise, Kwdso (2011:4) stated that, every day thousands of people are killed and injured on our roads. Men, women or children walking, biking or riding to school or work, playing in the streets or setting out on long trips, will never return home, leaving behind shattered families and communities. Road traffic accidents (RTAs) constitute major health, economic, and developmental challenges of African countries, especially adversely affecting sub Saharan African Countries (Chen 2009). Similarly, UNECA (2009) report stated that 90% of the

traffic crashes occurred in low and middle income countries of which Sub-Saharan countries had faced the highest fatality rate (28.3 per 100,000 population), which is substantially higher than any continent in the world.

Likewise, more than one in four deaths in the African region occur on Nigeria and South African roads and with five other countries, Democratic Republic of Congo; Ethiopia; Kenya; Tanzania; and Uganda are responsible for 64% of all road deaths in the region. These seven countries must reduce their road deaths considerably if the region is to realize a significant reduction in deaths (WHO 2013).

In financial terms Ethiopia is one of the poorest countries in the world, loses at least 400 million birr each year due to road accidents (Ferede 2013:112). Likewise according to UNECA (2009), the rate of traffic accident death in 2007/08 was 95 per 10,000 motor vehicles which put Ethiopia on the extreme high side of the international road safety division. Similarly, in Ethiopia death in traffic accident by road user category indicates that 55% pedestrians, 37% passengers 6% drivers and motor riders were 2% (WHO 2009). This indicated that the pedestrians are the most susceptible to traffic accident.

1.2 Statement of the Problem

Ethiopia Road Authority report indicates that, in 2007/8 G.C a total of 15,082 accidents occurred in the country, out of these the numbers of peoples killed were 2,161 while 7,140 experienced non-fatal injuries (ERA 2007).

While the researcher reviews empirical study conducted in the study area, no research has been conducted in study area on road traffic accident. However, few studies on road traffic accident which were done in Addis Ababa and Amhara National Regional State showed that the level will be increasing rapidly and it will becoming more serious in the primary, secondary and territory towns of Ethiopia (Mekonen 2007). Likewise, Persson (2008) conducted his reserch in Ethiopia and the result shows that 91.1 % of accident caused by male drivers, 55 % of accident was caused by age of drivers and 42.2% of accident caused by vehicle that give long service. Similarly Sileshi (2014) in his finding show that errors committed by drivers are the main causes of the accidents and these factors accounted for 83.8% of all traffic accidents. Lakew (2014) in his result shows that drivers

giving priority, pedestrian's manner while crossing the road and drivers usage of seat belt have statistically significant impact for the occurrence of traffic accidents. Studies by Gebremeskel (2014) and Said *et al.* (2015) show that male drivers, pedestrians and passengers were the most affected compared to female counter part.

Nevertheless, most researchers studied road traffic accident in Ethiopia used pure quantitative survey. However, their researches findings indicate that traffic accidents were occurred significantly by driver's behaviors with few contribution of pedestrians. Still to describe the behavior of human being instead of using only pure quantitative survey, it is appropriate to use mixed method. Human behavior factors need in-depth understanding through qualitative approach in addition to quantitative survey. Thus, mixed approach is appropriate method. The second gap was the former researchers didn't investigate the socio-economic implications of RTAs from the sociological point of view. Besides, the third gap the researchers didn't uses theories to support their findings. However, using different theories create the possibility to find different road traffic accident perspectives, variables and also implications. Finally, the fourth gap was the geographical locations where the researchers had conducted there researches. As the researcher best knowledge, all of the studies were conducted in Addis Ababa and Amhara National Regional State not in Oromia Special Zone Surrounding Finfine.

Generally, the research intended to fill the stated gaps by identifying and describing the trend, patterns, risk factors and socio-economic implication of road traffic accidents in the study area.

Basic Research Questions

1. What are the trends and patterns of road traffic accident in Oromia Special Zone Surrounding Finfine with in a period of 2011- 2015?
2. What are the major risk factors of road traffic accidents?
3. What are the socio-economic implications of road traffic accidents?
4. What are the major rules and regulations of road traffic accident management in Oromia Special Zone Surrounding Finfine?

1.3. Objectives

1.3.1 General Objective

To identify the trend, pattern, risk factors and implication of road traffic accidents in Oromia special zone, surrounding Finfine.

1.3.2 Specific Objectives

The specific objectives of the study are to:

1. Describe the trend and patterns of road traffic accident
2. Identify the major risk factors for road traffic accident
3. Assess the socio-economic implication of road traffic accident, and
4. Discuss the rules and regulations gaps of road traffic management

Operational Definitions

Risk Factors: Factors contribute to the occurrence of collision and aggravates the effect of the effect of collision.

Socio-economic implication: socio – economic problems faced the victims after RTAs.

Legal gaps: laws not implemented and not included in the proclamation, rule and regulation of road safety.

Serious injury matched to a police report: A person identified in the Police crash data (casualty or traffic unit controller) who is matched to a hospital admission record on the same day or on the day after a crash and did not die within 30 days of the crash.

Slight injury: An injury of a minor character such as a sprain (including neck whiplash injury), bruise or cut which are not judged to be severe, or slight shock requiring roadside attention.

1.4 Significance of the Study

Currently road traffic accident is a major concern of the government, institutions working on road safety and the society at large. Therefore, this study has contributed by adding knowledge on understanding the trend, pattern, risk factors and implication of traffic accidents. The study will also help to stimulate further investigation by the study area bureau for further actions. Will be an important resource and reference material for someone who will be interested in undertaking similar research and it can be used for academic purpose as well. Lastly, the discussions advocate and raise the level of concern and the development of road safety in this context, the research advocates and suggestions on the policy and strategic procedures adopted in the makeover of the transport sector.

1.5. Scope and Limitation

1.5.1. Scope of the Study

In concise terms, delimitations by themes, the research identifies and describes trend, pattern, risk factors and implications of RTAs. The second dimension of the delimitation of the thesis was delimitation by the unit of observation, in terms of the target groups as the primary sources of data. The target groups were the host society and government offices. Geographic delimitation of the thesis entails the selection of the study participant or the study area of Oromia special zone surrounding Finfine of three towns (Dukem, Sebeta and Sululta). The other five towns (Burayu, lege-Tafo, Holeta, Gelan and sendafa- Beke) were not included in the study.

1.5.2. Limitations of the Study

Several limiting settings present dares to the level of progresses required in this study. Major ones involve unavailability of relevant information, time (it was difficult to manage the time because of additional DTTP program of the University which has great impact on the quality of research by make me busier), finance, and lack of research out puts on the themes. The scantiness of empirical research, unavailability of forums and scientific papers exclusively dedicated to the sociology of medicine created challenges to the research endeavor. The research use report of traffic accident record for trend and pattern analysis of the study didn't include 2016 it only includes 2011-2015. There could be unreported cases solved through negotiation. Several limiting contexts present challenges to the level of progresses required in this study.

Chapter Two

Literature Review

2.1 Theoretical and Empirical Review

According to Creswell (2009), a theory is an interrelated set of constructs or variables formed into propositions or hypotheses. Theoretical perspective is a foundation in sociological research, theories summarize and organize a great deal of information and often broad in scope, connect individual facts and give them meaning and try to explain facts (Parson 1938 2007), because of its necessity this study applies two theories in social and behavioral science, mainly lay emphasis on system theory and risk theory including empirical literature review. In addition to this, the decision of using these approaches is due to the understanding that, Theories are vital in testifying research problems and also in choosing the right methodologies that help in carrying the empirical study (Gilbert 2015).

2.2 System Theory

The principal theoretical approach of the study is the system theory. The systems theory also known as the systems approach (Rayan 2008). It is the most leading framework employed in road safety research in recent decades (Salmon *et al.* 2010). The basic assumption of the systems theory is that road traffic crashes result from the interactional malfunctioning of the components of systems. Its main focus is on the person- environment interactional maladjustments (Muhlrad 2005). Hence, human factors and vehicle factors combine with physical and socio- environmental factors to bring about road traffic accidents.

The components of the theory are the road and environment, the means of transport (vehicles) and the behavior of man (WHO 2015). The environment component comprises of the natural and the built environments, the social and transport networks. The behavior of man element includes of demographic characteristic of road users (age, sex, education,

socio-economic status, and stage in life cycle), people's perceptions of risk and people's general behavior on the streets or pedestrians behaviors (WHO 2004).

2.3 Model for Traffic Accidents

Traffic accidents stand strong elements of man-environment adjustments and maladjustment a well-known approach in social science Muhlrad (2005) based on the logic of a modified human ecological model of a disease the approach can be transferred to studies of road traffic accident. A model for traffic accident as moved by the ecological model of a disease was developed by Jorgesen and Abane (1999) who made empirical adjustment of this basic model to outfit road traffic accident analysis.

The model is characterized by three main components:

1. The vehicle (corresponding to the vector in disease ecology) which describes vehicles into its composition, age, technical conditions and safety equipment's like seat belts in a car.
2. The environment, comprising the road system and the wider physical and built up environment. The physical environment splits further into different aspects such as; daylight and climate (weather conditions and road conditions), spatial conditions (arrangements and macro structures), settlement pattern (urban or rural / sparse or populated area), situation of areas of residence and working areas, principle of traffic separation, topography and road constructions qualities.
3. The behavior of the population, including its characteristics such as age and sex ratio as well as attitudes and general traffic behavior and it goes further into driving behavior, driving experience, driving style and risk driving (influence of alcohol and drug).

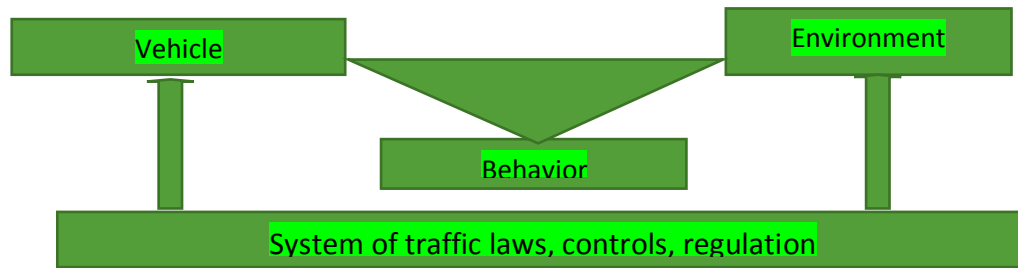


Figure 2.1 Model for traffic accidents

Source: Jorgensen and Abane (1999).

The application of systems theory in understanding the topic under consideration can be seen at three different levels. First, the theory helps to identify the system of traffic laws, regulations and mode of enforcement designed to ensure traffic safety in the study area. Second the model helps to identify the multiple causes' interaction of risk factors and prevention of traffic accidents that occur in the study area. Third, the model assist in identifying and describing the three major contributory factors of road traffic accident including human, mechanical (vehicle) and road environment factors.

2.3.1 Human Behavior Factors

A best inspection and regulatory action for the road safety on the road traffic accident studies depends very much on the behaviors (which is very complex need in depth understanding) and experience and also skill on the drive (Gueguen *et al.* 2015; Han 2015). Similarly, a research done by Odoro (1995) in Kenya reported that human factors were responsible for 85% of all cause. Whereas, in Ethiopia according to Persson (2008) studied that, the human factor were responsible for 91.1 % of all cause in Addis Ababa.

Researches done on drivers after being involved in road traffic accidents reported that although alcohol is the most prevalent source of driver's impairment, other drugs or substance abuse can also contribute to the problem (Politis *et al* 2013). Similarly, other finding stated that vulnerability increase by alcohol and other drugs. As well as, other

physiologic states such as fatigue observed that reckless driving in adolescents has been associated with increased risk of crashes (Knighta 2013). Likewise, the reserches done on driving under the influence of alcohol or other drug abuse is known to impair the driver's ability to judge and control the vehicle (GuohulaLi *et al.* 2013; ElviK 2013; Sebego *et al.* 2014; Eleonora *et al.* 2014; Scott-parke *et al.* 2014; Rudistill 2014). Also, other studies on effect of alcohol by (Evelyn 2008) identified that reported binge drinking among young individuals and medication use among middle-aged individuals were found to be risk factors for subsequent death and injury. Lastly dissimilar finding by (Chan 2016) stated that the correlations between driving anger and accident-related conditions though at relatively middle levels, were stated that still statistically significant.

Studies have also suggested that driver's fatigue is a major factor in creating room for casualty crashes (Beth 2014). Similarly, Fatigue due to long distance driving is a risk to road accidents (Howard *et al* 2014). Likewise, sleep quality and quantity were significantly affected by the lifestyles of enjoyment (ElviK 2013). Equally, It is advised to plan resting points in advance before starting a long journey (Gebremeskel 2014). Lastely, the other study conducted on RTA stated that most of the crashes occurred by the less experienced and non-professional drivers (Howard *et al* 2014).

Kebede (2013) stated that excessive speed is also mentioned as the major contributing factor on road crashes and subsequent injure rates of person injured. Similarly property damage appears to be linked to the vehicle speed at impact (Eluru 2013). Besides, also other finding on speed suggest that both the e-bikes' potential to reach higher speeds and the fact that they reduce the perceived cycling effort increase the risk of driving misjudgments by other road users (Katja *et al.* 2016). Similar to others findings on speed indicate that, the velocity when braking, triggering factors, potential object type, and potential crash type exerted the greatest influence on the driving-risk levels in near-crashes (Gubing 2015).

According to (Mekonen 2007; Nuressa 2014; Demeke 2014) study result stated that the driver's age is also known to be an important factor contributing to occurrence of accidents. Similar to other finding shows that adolescents or young drivers are frequently involved in

traffic accidents than other age groups (Martínez-Ruiz 2014). Moreover, literature have also shown that young drivers are more frequent involved in accidents caused by inappropriate speed and loss of control of the vehicle compared to other age group of drivers (Knighta 2013; McNally 2014). Study conducted in Ethiopia on causes of road traffic accidents on his finding stated that: road, the driver's age, the road users, and road factors are the main factors for traffic accident with in the country (Gebremikael 2014). Likewise to other finding stated that young drivers are particularly at risk, with death rates up to three times higher than those for Adult drivers Development (2006). Similarly, other researchers (Zhahan, 2013) specified that drivers' age and gender are considered to be potential risk factors, although drivers' education, income and social status are expected to be main risk factors that are associated with traffic accident.

With regards gender Simo (2008) conclude that boys also suffered more injury often than girls and were also referred for further care to health care centers or hospitals more often than girls. Moreover, among the drivers of motor vehicles that struck victims, 69% of them were males and 31% females, controlled for gender exposure level whereas, in Ethiopian context the case is different. For instance Mekonnen (2007) stated that sex is not stasticaly significat risk factor for traffic accident.

2.3.2 Vehicles factors

Studies conducted on the vehicles partes stated that sudden tyres elimination increase the level of road traffic accidents were statistically significant (Elvic 2015). Other study (Roddis 2014) on the risk factor of RTA through vehicle factor stated that vehicle high strength steels, stiffness of vehicle front-end structure had strong impact to protect passengers from accident level and back seated on travel had strongly correlated with road traffic accident level reduction. Apart from this, other studies states that intersection lighting and intersection angle also have a statistically significant impact on the crash frequency for all crash types (Huang *et al.* 2014).

Findings on RTA crush indicated that types of vehicles, over loading and the length of bus-only center lanes had the largest effect on increasing traffic crashes (Kyoung-Ah *et al* 2016). Other findings in Germany about 2,300 accidents to heavy goods vehicles per year

are the result of improper loading, securing it has been estimated that up to 25% of accidents involving trucks are caused by inadequate load securing (Sebego *et al.* 2014)

2.3.3 Road and Environment Factors

Concerning the physical environment, various climatic threats and geo hazards like heat, fog, high winds, snow, rain, ice, flooding, hurricanes, and avalanches have effects on roads hence on traffic accidents (Jian 2014) similarly, the environments factors including design of road, its geographic location, season, weather, visibility, time of day and traffic regulations has significant impact for road traffic accident (Stevens 2007; Kebede 2013). Likewise, According to Vorko, Kern and Biloglave (2006: 93-98) reserch finding indicate that high risks factors for fatal road traffic accidents were found on urban links, during night hours and by bad visibility (night, sunset, sunrise).

Findings on the relationship between night time driving, passenger carriage, and crush outcome remind significant impact on road traffic accident (Lawrence 2004). Similarly, there is a relationship between seasonality; weather and time factor in road traffic accident occurrence (Bentri 2011). Likewise, Stevens (2007) has revealed that most of the accidents occur during the night, weekends and during months of October to December.

Regarding the road factor different studies stated that activities along the road side such as petty trade or street vending, increases exposure risk to traffic accidents (Sebego *et al.* 2014). Similarly, an average of 77% of the sidewalk width was blocked by encroachments which forced pedestrians to step on the road resulting in vehicles swerving (Kyoung-Ah *et al.* 2016). on average, 33% of the street width was blocked by illegally parked vehicles (Faraz *et al.* 1999).

Studies conducted on road sign and meadian indicated that improperly planted and maintained Median trees near highway intersections can increase the total number of crashes and injury plus fatal crashes at a 90% confidence level; no significant difference could be found in crash rates (Hongyun *et al.* 2016). Likewise, Signalized intersections have significant impact on road traffic accident crush severity (Kirolos 2015). Moreover, modern roads are safe because they are well designed with all- important signs and the road

signs should be clear by themselves and should convey an unmistakable message to the driver (Stevens 2007). Besides, other studies on the impact of road environment on drivers stated that, the effects of driver distraction were different for straight and curved roadways, indicating a stronger influence of the road environment in steering (Merat 2016).

2.3.4. System of Traffic Laws, Control and Regulations

Studies conducted on the penalty of road users indicate that about 100% violations were reduced (Rudistill 2014). Similarly, a small reduction in fatal accidents was associated with increased fixed penalties, varying between studies from less than (Elvic 2016). Likewise, studies conducted on traffic inspection stated that the proportion of drivers indicating some speed camera influence on driving decreased over the years, in addition, the majority of drivers (61%) predicted positive impact of speed cameras on safety (Edna 2016). Correspondingly, Comprehensive traffic management should be sufficient to maintain road traffic safety (WHO 2015).

Study conducted on traffic law enforcement stated that the roadside suspension was associated with 65.2% reduction in drinking driving recidivism in Ontario (Tracey 2015). Similarly, other study on the penalty of road traffic effect was stated that absolute deterrent effect of penalty changes, as evidenced by significant reductions in the proportion of drivers who re-offended and with a significant reduction in the length of time to re-offence (Watson 2015).

According to Cripton *et al* (2014) Study conducted on traffic safety stated that, riders without helmet had 70-90 % would be injured relative to the helmeted one. Similarly, Safety belt use by front seat occupants has been found to reduce motor vehicle related injuries (Goldzweiga *et al* 2013).

The findings on difference on car and large truck suggest that traffic volume, truck percentage, lighting condition, and intersection angle significantly affect intersection safety (Rudistill 2014). Further studies of laboratory crash tests showed that an increase in mass was not negatively correlated with protection of the rear seat occupant, while an increase in stiffness was correlated with rear seat dummies (Sahraei 2014). Other studies was

Promotion of road safety through the use of targeted media campaigns at community level can effectively reduce motor traffic accidents (Eleonora 2013).

2.4 Risk Theory

Risk can for instance be defined as subjective valuation of probability for a specific occurrence of a negative event, and how concerned individual is with the consequences of this event (Hinders 2011), as a result the combination of perceived probability and severity of consequences or implication, relate to how the individual distinguish risk. According to Damian (2006) state that in the road traffic, risk is the function of four elements. The first is the exposure-the amount of movement or travel, within the system by different users or a given population density. The second is the underlying probability of crash, given a particular exposure. The third is the probability of injury, given a crash. The fourth element is the outcome or implication of injury. The second main theoretical approach of this study is related to the implication of traffic accident. This study mainly focused on the fourth element of risk theory which focuses on the implication of traffic accident. The other which has been the fourth elements for risk theory was the implication of road traffic accident which the researcher focused on this theory.

According to (Rocío et al 2016) findings stated that severity of disability is related to social, economic and health factors which significantly influence recovery in Spain, RTAs mainly generate mild disability, though in one in two thousand cases they cause moderate, severe or complete disability. Likewise, other finding on health implication of RTA identified that peak bones stresses and knee shearing movement in the legs are increased and assessment of pedestrian lower limb injury should take account of these gait stance effects (Guibing 2015).

The same finding on the health implication of RTA acknowledged that, while there has been steady enlargement in vehicle crash test performance, below-knee lower extremity injuries remain the most common injury in real-world frontal crashes (Crandall 2015). Equally, Studies conducted on RTA on economic implication stated that, the means for estimating all of the costs to the casualty directly related to their recovery from their

injuries this indicate that the more the victims was poor the more the severity of accident after post crush because of medication and livelihood capacity (Bambach 2015).

2.5 Policy Review

Road safety laws and regulation are essential to reduce accidents since they govern road users, by balancing their rights and responsibilities. Traffic regulations in turn are guided by the state policy. For this study, the researcher reviews some of the global, European, African, sub-saran and South African and Ethiopian road safety policy.

According to Schopper (2009) the idea of injury prevention is not new in the sense that all countries have in place laws and regulations that address at least some of the issues associated with violence and injury, and in some steps have already been taken to tackle the consequences of injury and violence. Every country must have their own road policy in order to overcome the problem of road traffic accident (WHO 2001).

Some European countries have their own well compressive organized road safety policy (i.e. Germany, Bulgaria, Hungary, Norway & Finland) and also they have well organized continental level policy for road safety. Whereas, in Africa is one charter draft which include 34 Articles on road safety management and responsibility of drivers and governments (AU 2011).

The Economic Commisstion for Africa had prepared its own policy for Sub Sharan Africa on road safety in general and speed limit, seat bealt, drink driving policy in particular (ECFA 2009). Few African contries have their own policy for road sefety like South Africa road sefty system approach or SARSE (2011-2020). Although, our contry Ethiopia has no well organized policy for road safety but, there are some road safety proclamations like proclamtion number 468/2005 and regulation number 205/2011, had been established.

In order to overcome road traffic accident, the European road safety has developed their own policy key organizations influencing policy development as follows which will be best to adopt it for Ethiopia road safety management through integrated and participatory way of traffic accident management.

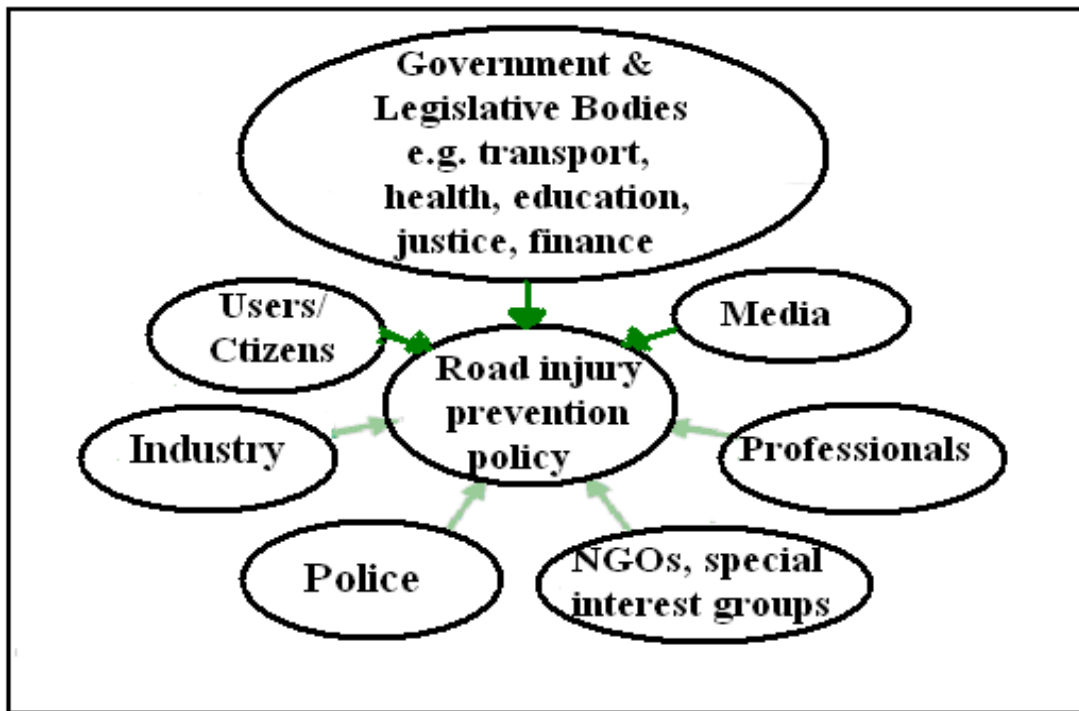


Figure3. Key Organizations Influencing Policy Development

Source: *European Road Safety Observatory, 2006 and WHO on road traffic injury prevention (2004).*

The above figure illustrates the construction of multi-sectorial institutional capacity, both in the governmental and nongovernmental spheres, is a key to developing road safety, and can only be delivered by a national, political commitment for road safety management.

The study was guided by conceptual frame work as shown in Figure1.1

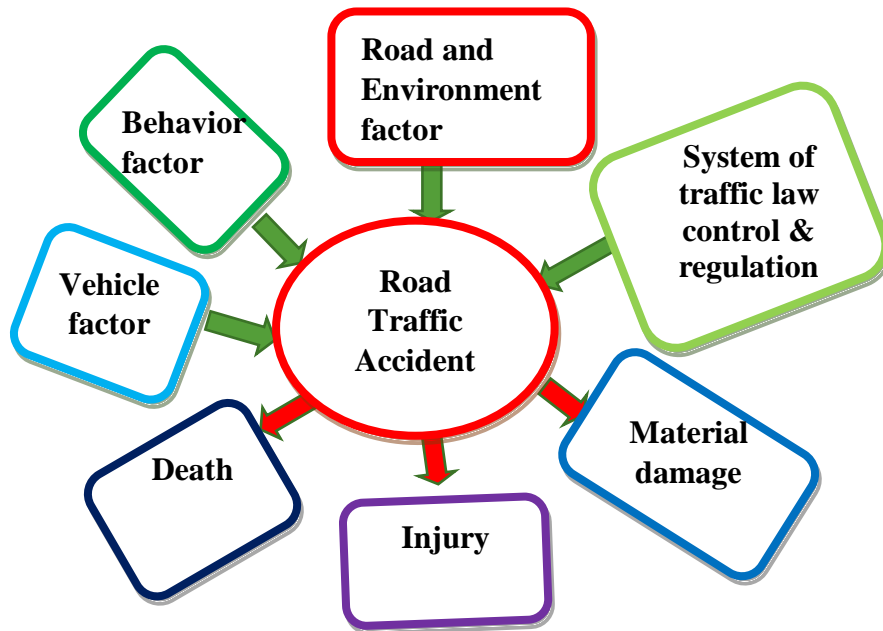


Figure 1.1: Conceptual framework of the study adapted from Jorgesen and Abane (1999) model on road traffic accident risk factors and it were reshuffled by adding implication factors and core study theme by researcher himself.

Chapter Three

Research Method and Design

3.1. Research Method

This chapter portrays the methodological procedure pursued to realize the study. In this study, mixed method (qualitative and quantitative) was used. Both qualitative and quantitative approaches have their strengths and weaknesses. In order to fill the gaps of both method, mixed approach was appropriate method on statistical findings with in-depth narrative description, identification of overall themes, multi-lens, statistical and holistic, mixture of numeric variables, words, and images, and study behavior in more than one context or condition (Paul *et al* 2007). Among the mixed method approach, concurrent transformative strategy was employed in this inquiry. According to Creswell (2009), concurrent transformative strategy was guided by specific theoretical perspective to guide the study. The strategy may or may not be sequential during data collection and also priority can be given to either of the designs (qualitative or quantitative). With all its subjects, this strategy was selected to the fact that it gives the researcher freedom of choice to decide on the issue of priority and enables to use theoretical frameworks on researcher rely (Creswell 2009). This thesis work followed and benefited from the triangulation of theories and data.

3.2 Study Design

The study was used mixed method research type in its design. The information's that were gathered for this study represents cross-sectional descriptive in its design. Thus, it employs both quantitative (descriptive), and qualitative: Interview, Observation and FGD (focus group discussion) data types. The philosophical foundation of the study is pragmatism. The reasons for the selection of pragmatic approach were: to use a variety of data sources, to use a multiple methods in the study at the same time or one after the other and to use multiple perspectives to interpret the results. Percentage and mean were used for analyzing quantitative data whereas; thematic analysis and narrative analysis were used to analyze the qualitative data of interview, FGD, observation and cases of victims respectively. Finally, it

is an appropriate design to analyze the trends, pattern and risk factors and socio-economic implication of road traffic accidents.

3.3 Study Area and Data Sources

3.3.1 Study Area

Oromia National Regional State is one of the largest regional states in the Federal Democratic Republic of Ethiopia. Geographically, the Region extends from 3o24'20"-10o23'26"N latitudes and 34o07'37"-42o58'51"E longitudes. It shares borderlines with all the Regional States in the Federal Democratic Republic of Ethiopia, except Tigray. It also shares international borderlines with the republic of the Sudan (with 66 km borderline) in the west and Kenya Republic (with 521km) in the south (Nuressa 2014:2-3).

The total area of the Region is 363,136 km², accounting for about 34.3 percent of the total area of the country. Administratively, the region is divided in to 18 administrative zones, 192 woredas (more than 6,342 villages Kebele's and 482 urban Kebeles (Nuressa 2014:2-3). Oromia Special Zone of Surrounding Finfine is located in the central part of the Oromia Regional State, surrounding the capital town – Finfine. The special zone has an estimated total area of 4,800 km² It consists of six woredas (Akaki, Berek, Mulo, Sebeta – Awas, Sululta, and Welmera) and eight major towns (Burayu, Dukam, Gelan, Holata, Laga Xaafoo – Laga Daadhi, Sebeta, Sendafa – Beke, and Sululta). Among its towns Dukem, Sululta and Sebeta towns were purposively selected.

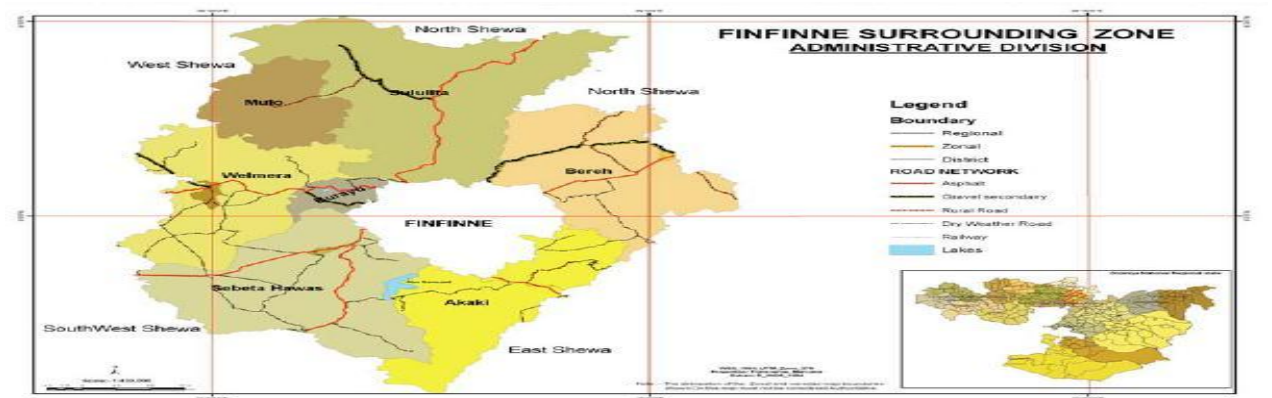


Figure 3.1 Oromia Special Zone Surrounding Finfine Map

3.3.1 Data Source

In order to accomplish the objectives of this study, both primary and secondary data were used. The primary data obtained from semi structured interview, in-depth interview, key informant interview, non-participant observation, case study and FGD participants. Additionally, secondary sources of the data for this study was from RTA records of 2011-2015 G.C whereas, reviews of relevant books, journals, articles, and reports (extracted from international organizations such as WHO, World Bank, IRTAD) used to support this study.

3.4 Methods of Data Collection

The data used for this study were collected using both qualitative methods (case study approach, interview, FGD and observation) for quantitative method (sorting out, secondary data).

3.4.1 Qualitative Method

Qualitative research method is focuses on the meanings of experiences by exploring how people define, describe and metaphorically make sense of this experience (Scott and Deirdre 2009). In this study qualitative approach had used to collect the primary source of data through interview with traffic polices, transport authority expert, health expert, interview with RTA victims, personal observation and focus group discussion with responsible government official in the study area. The purpose of collecting information from key informants was to get broad information from knowledgeable people directly with their related experience, to get confidential information of key informants and to seek the views of government officials in various organizations about the zonal government what has done on road traffic accidents in the study area. This was prepared using key informant interview guide. Interview with victims was to get in-depth information of the victims what they totally faced after road traffic accident and to get socio economic implication of road traffic accident in the study area. Semi structured interview with drivers and pedestrians to get the general information of RTA risk factors and socio-economic implications. Personal observation was used where the researcher observed how pedestrians cross the main road in three different junctions and how vehicles offer priority to pedestrians and peak hour observation.

3.4.1.1 Case Study

Case study involves systematically gathering enough information about a particular person, social setting and event to permit the researcher for effective understand how it operate or function (Donna 2009). The selected case study type was intrinsic case studies used because; it illustrates some particular trait, characteristic or problem of individual cases (Bruce 2001) argues that case studies allow an investigator to retain the holistic and meaningful characteristics of real life events. It is an empirical inquiry that investigates a contemporary phenomenon within real life context when the boundaries between phenomenon and situations are not clearly evident. The case study was applied for the cases which need in-depth understanding in its nature setting, recognizing its complexity, solving problem of socio economic implication of RTA on victims which need more elaboration, in-depth understand of its implication in the study area. In order to assess the socio economic implication of RTA in the study area, I have used cases of RTA victims within this objective four cases were seen in relation to health implication, joblessness, family disorganization and divorce beside coping strategy of victims by the death of family bread winner.

3.4.1.2 Interview

The qualitative interview technique seeks to describe the meaning of central theme in the life world of the subjects. The main task in the interviews is to understand the meaning of what the interviews states Creswell (2009). In this study the researcher conducted face to face interview with key informants, victims, drivers and pedestrians.

3.4.1.2.1 key Informant Interview with Traffic Polices

There were 4 key informant interview with traffic polices, one chief inspector from zone and three traffic officers at the town's level which means one from Dukem, one from Sululta and the rest from Sebeta towns were interviewed. The plan was to interview three respondents from each using one from each town method but, to understand a general picture of the zone the interview at zonal level was added. An interview guide with twenty questions was used (See Annex 4). The interview was done with chief inspector at zonal level for 2:30 hours really he was interested to offer his response for findings and it was hoot response.

The other interviews were done with three traffic police officers of the three towns of Sululta, Sebeta and Dukem by using interview guide. The guiding questions aimed to get information of the major risk factors for the occurrence of RTAs, the socio-economic implications on victims. It has also source of understanding from the opinions on how road traffic accidents has been prevented and road safety measures has been taken in the study area towns.

3.4.1.2.2 key Informant Interview with Transport Authority Head

There was one key informant interview with transport authority boss at zonal level. The plan was to interview three respondents with one transport authority from each town but, after interviewing four traffic polices the same information also seen frequently. For the purpose of negative case analysis I had continued to interview after data saturation and the interview was conducted using interview guide. An interview guide with a total of nineteen questions was used (See Annex 6). The interview was done with transport authority boss at zonal level for 1:30 hours. The guiding questions aimed at getting information about the major risk factors for the occurrence of RTAs, the socio-economic implication on victims, policemen collected road accident data, problems encountered in dealing with accidents and victims, and how rules and regulations are controlled. It also had a provision for them to give opinions on how road traffic accidents can be prevented in the study area towns.

3.4.1.2.3 Key Informant Interview with Health Experts

Three health experts from the department of public health were interviewed. An interview guide with a total of seventeen questions was used (See Annex 5) on the first aid and health management given for victims, rules and regulations, policy and safety measures taken to prevent road traffic accidents in the study area. The intension of interview to health experts was for better understanding of their practical support on the victims and their perspective on RTAs socio economic implication particularly implication of health in the study area.

3.4.1.2.4 Semi Structured Interview with Drivers

In this group a total of six participants were interviewed. This was done with the drivers who were in bus station and transport authority for driving license renewing within a period of my field work which was approximately one month. The interviews to these drivers were done after having their consent to participate in the study. An interview guide with a total of nineteen questions was used (See Annex 1) For the conduct of the individual interviews with drivers, I considered the involvement of men and women, younger and older. But most of drivers were male because of the driving profession of commercial vehicles in the study area was the job of males and the system of approaching female drivers was difficult because, most of them take automobile for self-movement rather than service vehicles. The intention of interviewing drivers was for better understanding of their perspective on RTA and to present a reasoned account of their everyday life experiences and to identify risk factors with its implication across time and space from their perspective point of view.

3.4.1.2.5 Semi Structured Interview with Pedestrians

In this group, a total of five participants were interviewed. Similar information was responded by participants at the fourth interviewee but, for identifying negative cases the researcher had used additional interviewee. This was done with the pedestrians who were available in the study area within a period of my field work, the interviews to these pedestrians was done after having their consent to participate in the study. An interview guide with a total of eighteen questions was used (See Annex 2) to conduct the individual interviews with pedestrians, I considered the involvement of men and women, younger and older. The target of interviewing pedestrians was for better understanding, identifying and describing their perspective, life experiences and reasoned justification of their everyday movement on RTA and its risk factor and implication across time and space from their perspective point of view.

3.4.1.2.5 In-depth Interview with Victims

In this group a total of five participants were interviewed. This was done with two RTA victims by contacting on their residence places with support of traffic police officers, one

earlier driver victim on his working place (bus station) and two victims by RTA who attended the traffic police office on their appointments for insurance case within a period of my field work. An interview guide with a total of twenty questions was used (See Annex 3) to conduct the individual interviews with victims. The focus of interviewing accident victims was for better realization of victims and to present a reasoned explanation of their everyday life experiences of pre- accident and post-accident and to explore RTA implications through the commonalities and diversities in their suffering of socio-economic problems faced after road traffic accidents and to identify the risk factors in the study area.

3.4.1.3 Focused Group Discussion

A focus group discussion is an interview with a small group of people usually six to eight people participate in the interview for about one to two hours Creswell (2009) argues that Focus group discussion is the highly efficient qualitative data collection technique, which provides some quality controls on data collection. The researcher used 1 focus group discussion with 2 traffic police officers, 1 the zonal transport authority, 1 health expert from department of public health, 1 expert from the department of Social welfare, 1 drivers from the office of the zonal Commissioner and 1 zonal Administrative and total of seven participant were attended. The FGD was conducted by two peoples to proceed effectively by using one facilitator who have training and research facilitation experience assigned on the discussion and I, was also moderator and note taker on the focused group discussion. I had planned to make only for 2:00 hour. But, because of the interest of the discussion team it was extending to 2:30 hour and was participatory, all participants equally participated on discussion through strong facilitation. The intention of conducting the FGD with different stakeholders was to get the confounding problem aggravating the case of RTA and its implication in the study area. Many issues were raised by participants and it was conducted using Afan Oromoo and Amaharic languages on the basis of FGD guide (See Annex 7) at traffic police meeting hall.

3.4.1.4 Observation

Rich information and awareness about a phenomenon can be obtained through direct personal observation (Bruce 2001) noted that direct personal observation gives the

researcher a valued recourse and tool to relate the data obtained from the interview to crosscheck evidence.

The researcher was observed that how most cars and pedestrians were moved, peak hour driving, road side problems, speed limit, sign showing by vehicle, how the pedestrians crossing the road and how pedestrians use zebra crossing by discussing with the traffic police standing on its duty on the congested area using Observation checklist. (See Annex 8) Therefore this helped the researcher to lean people's behavior in risk taking and their attitude toward road traffic accidents.

3.4.2. Quantitative Method

Quantitative methods provide comparisons and statistical findings. However Kotheri (2004) mention that quantitative research method can amount to a quick fix involving little or no contact with people or field and also statistical correlation may be based upon variables that in the context of naturally occurring interaction are arbitrarily defined. In this study, quantitative source of data was collected from the statistical report of traffic police based on road traffic accident implications of all accidents happened in Oromia special zone surrounding Finfine from 2011 to 2015. The purpose of collecting this information was to describe the trends and pattern of road traffic accident occurred in the study area.

3.4.2.1 Secondary Data

The second part of data collection was based on quantitative method with secondary data sources. This part comprised of a retrospective review of records of road traffic accidents at Oromia special zone surrounding Finfine obtained from traffic police statistical reports.

3.4.2.1.1 Statistical Report of Traffic Police

The information collected from traffic police statistical report were: RTAs by age of accident committed drivers, sex of accident committed drivers, accident committed drivers level of education, vehicle driver's relation, experience of drivers, RTAs by age of vehicles and by the major RTAs risk factors. A review of records was done systematically and all records manually sorted out starting from 2011 to 2015. The statistical report was

aggregated so that, the researcher collected the aggregated statistical data for trend and pattern analysis.

3.5 Sampling

3.5.1 Sample Size

For this study the researcher used the sample size based on data saturation point for qualitative part of the research. The sample of the study comprises 24 participants from all groups of the 3 towns (Dukem, Sululta and Sebeta) purposive sampling was used accordingly a total of (i.e. 4 traffic police, 3 health experts on risk prevention, 1 Road and Transport Authority boss, 5 pedestrians, 6 drivers, 5 victims by traffic accident) were selected. This means, 2 from Sululta and Sebeta towns and 1 from Dukem for RTAs victims and one from three towns and one traffic police from the zone, 2 pedestrian from Dukem and Sululta and one from Sebeta, 2 drivers from three towns, 1 road and transport authority expert from zone, 1 health experts from three towns were selected. As a result the study had 24 participants used but, the preliminary number proposed was shifted by the selected participants that mean, one additional traffic police officer from zone was added and two additional victims were added. But two transport authority experts and one pedestrian was reduced based on data saturation point. The quantitative data was collected from traffic accident statistics report; the researcher collected all aggregated data recorded with in the past five year for this study.

3.5.2 Sampling Method

In this study, deliberate (quota) sampling, availability sampling, purposive sampling and snow ball sampling techniques were applied. For the purpose of this research the primary data was collected by using quota sampling by stratifying the population in to six groups (i.e. the traffic police officers, health experts, road and transport Authority experts, the drivers, the pedestrians and the victims). Stratifying the population helps to increase the validity of the research, by make sure that all concerned groups are involved in the study. Among these six groups of populations, the traffic police officers, the Health experts and Road and Transport Authority experts were selected by using purposive sampling, the pedestrians selected using availability sampling, drivers selected by using snow ball sampling and the victims were selected using purposive sampling but, the criteria of

selecting the victims was based on death of house hold breadwinner, heavily injury and light injury of victims. For recorded accident data all aggregated data of three towns with five years were collected by make sure that all data used for trend and pattern are involved in the study.

Interviewed Data

1. Pedestrians

N.O	Sex	Age	Town
1	Male	28	Sululta
2	Female	35	Dukem
3	Male	43	Sululta
4	Female	45	Dukem
5	Male	51	Sebeta

3. Victims

N.O	Sex	Age	Towns
1	Male	24	Sululta
2	Female	25	Sululta
3	Female	28	Sebeta
4	Male	34	Dukem
5	Male	45	Sebeta

5. Key informant Health Expertise

N.O	Sex	Town
1	Female	Sululta
2	Female	Sebeta
3	Male	Dukem

2. Drivers

N.O	Sex	Age	Town
1	Male	25	Sebeta
2	Female	32	Dukem
3	Male	34	Sululta
4	Male	36	Sululta
5	Male	37	Dukem
6	Male	42	Sebeta

4. Key informant's traffic polices

N.O	Sex	Towns
1	Male	Zone
2	Male	Sululta
3	Male	Sebeta
4	Male	Dukem

6. Key informant Transport Authority Head

N.O	Sex	Zone
1	Male	OSZSF

3.6 Tools of Data Collection

In order to collect primary data, the researcher used semi structured interview guide, in-depth interview guide, key informant interview guide, FGD guide and observation checklist. Whereas, all aggregated secondary data from traffic police accident statistics report was used.

3.7 Technique of Data Analysis

The data gathered from different sources analyzed using qualitative and quantitative analysis. The data gathered through FGD, interviews and observation was analyzed using thematic analysis to identify and describe risk factor and implication of road traffic accident and narrative analysis for individual cases of victims. The accident record data collected from traffic police department was analyzed using descriptive statistics analysis. (Percentage and mean) used to describe the trend and pattern of road traffic accident in study area. Lastly, the result summarized to show the trend and pattern of road traffic accidents with in the period of 2011-2015 and translated into viable meanings and analyses. Tables, charts and figures used to clarify and substantiate explanations.

3.8 Validity and Reliability

3.8.1 Validity

According to (Singh 2007) validity is briefly defined as the degree to which the findings are interpreted in a correct way and reliability is the degree to which the findings are independent of accidental circumstances of the research. To ensure the validity of the instruments the researcher used transferability to know the credibility and trustworthiness, the researcher was follow the correct research data collection technique and expert review.

3.8.2 Reliability

Reliability is the consistency of instruments, across time and different individuals (Crewel 2009). It also indicates the degree to which an assessment tool produces stable and consistence results these a measure is considered to be reliable if it give the same result again and again. So that, the researcher were used triangulation of information among different source of data, appropriate method, cross checking, member checking and in addition to these reviewing from informants and properly planned.

3.9 Ethical Considerations

According to Creswell (2009) as researchers anticipate data collection, they need to respect the participants and the sites for research. Many ethical issues arise during this stage of the research. As MA Sociology and social policy student the researcher kept ethical consideration during the data collection time because sociology is an academic discipline, ethically respecting every dimension of the society. In order to keep the ethical issues, the research data collection procedure was implemented by explaining the objectives of the study to respondents, asked for their consent, assured the confidentiality of the data used, encouraging them to participate voluntarily, ensuring them for the information they provide will be only used for the study purpose not reported by using names and specific address (names written herein after for the case studies are pseudonyms).

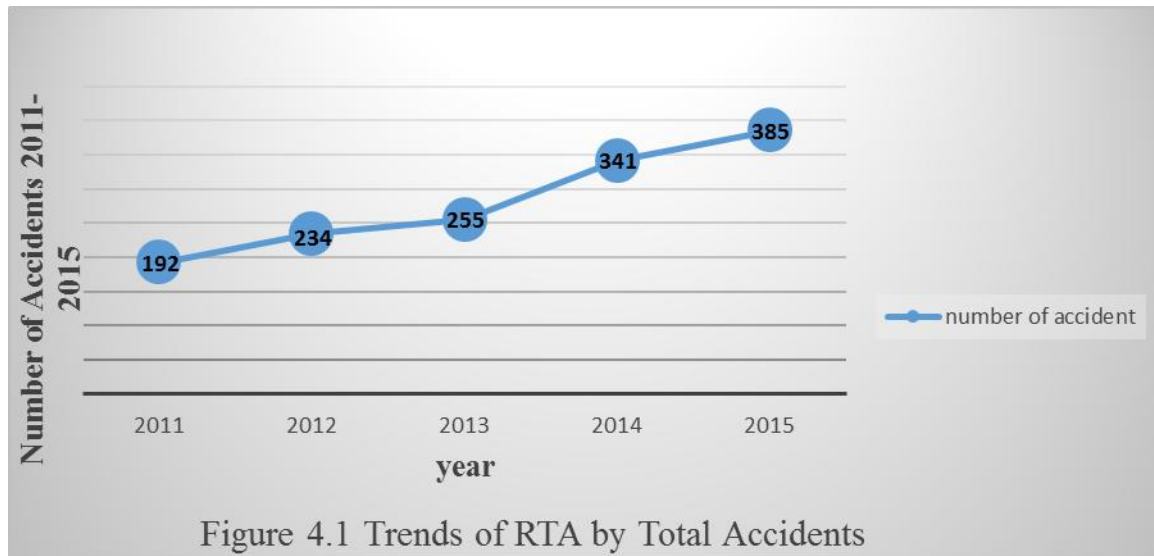
Chapter Four

Trend, Pattern and Risk Factors Associated with RTAs

4.1 Trend and Patterns of RTAs

This chapter is based on the review of Oromia special zone surrounding Finfine's traffic police statistical data. The review is basically reflecting all accident records including accident victims and materials damage which are available at the police office from 2011 to 2015. These data were collected from the police record book and report.

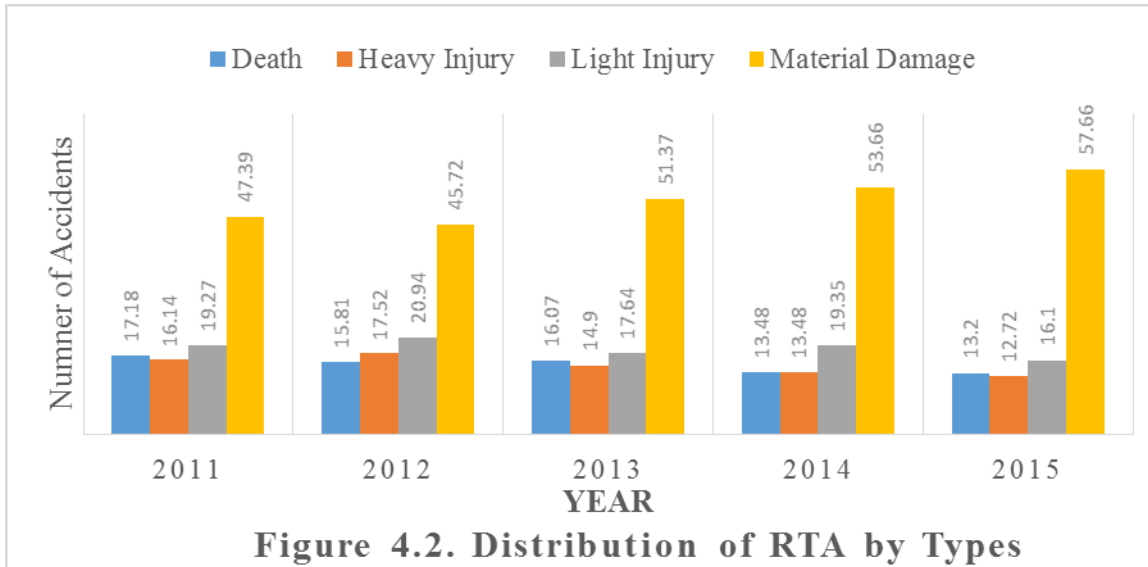
4.1.1 Trends of RTAs by Years (2011-2015)



Source: Police records of the study area from 2011-2015.

Figure 4.1 shows the trend analysis within 2011-2015, and RTA had increased by 101%. The rate of increment between each year was as follows: Trend of RTA from 2011-2012 had increased by 22%, from 2012-2013 by 9%, from 2013-2014 by 34% and from 2014-2015 by 13% respectively. This indicated that problem of RTA had been increasing at alarming rate during the time under study. The possible explanations given to this increment by many of my interviewees were the negligent behaviors of drivers in addition to the poor road traffic management in the study area.

4.1.2 Distribution of RTAs by Types

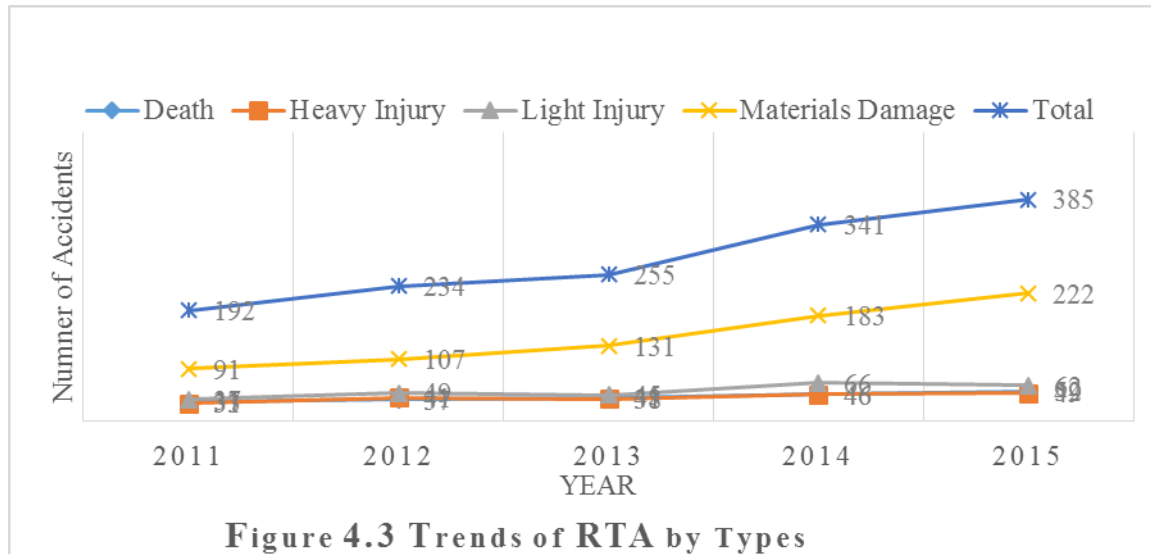


Source: Police records of the study area from 2011-2015

Figure 4.2 illustrates the proportion of RTA in 2011, and it was found that the death rate, heavy injury, light injury, and material damage was 17.18%, 16.14%, 19.27%, and 47.39% respectively. Whereas, amount of RTA in 2012 depicts that death rate was (15.81%), heavy injury (17.52%), light injury (20.94%), and material damage (45.72 %) were recorded. Although, the share of RTA in 2013 by death was 16.07%, heavy injury (14.9%), light injury (17.64%), and material damage (51.37 %) were recorded. However, the proportion of RTA in 2014 portrays that death rate distribution was (13.48%), heavy injury (13.48%), light injury (19.35%), material damage (53.66 %) were reported. Finally, the amount of RTA in 2015 indicted that the distribution of death was (13.2%), heavy injury (12.72%), light injury (16.1%), material damage (57.66 %) were recorded.

From this figure it can be conclude that the level of death, heavy injury and light injury were almost similar across all years. But the distribution of RTA by material damage was significantly high. Thus, the possible implication for this could be all accidents have material damage irrespective of its degree.

4.1.3 Trends of RTAs by Types

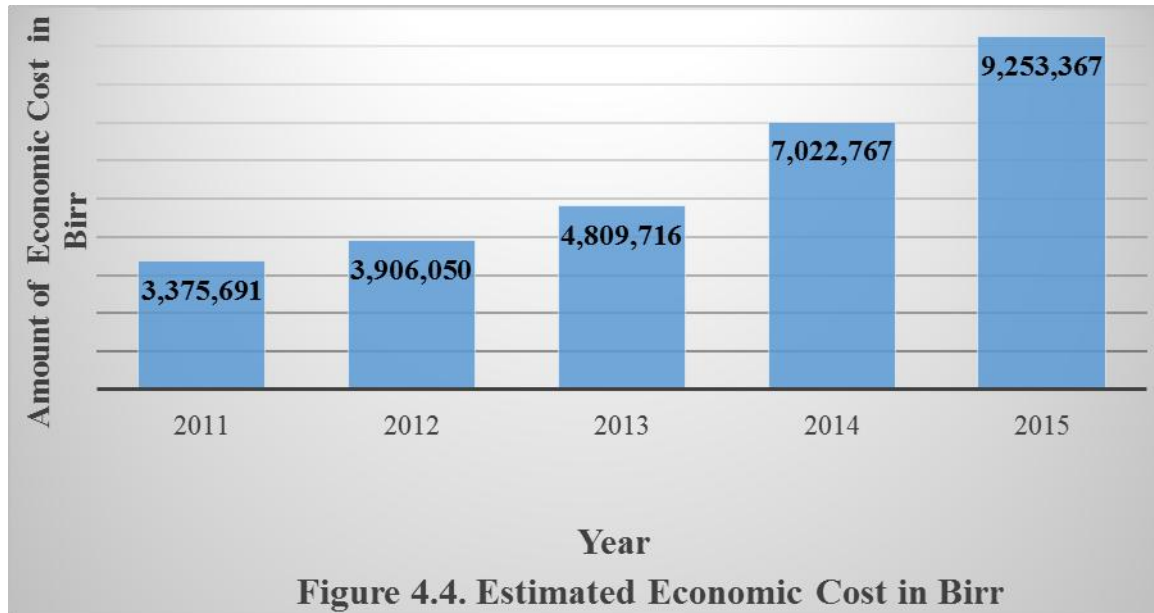


Source: Police records of the study area from 2011-2015.

Figure 4.3 shows the analysis of the trend within in the five years and between each year. Accordingly, it was found that RTA by death rate depicted a (57%) increment within the five years. Moreover, the trend of RTA via rate of material damage had been increased by (144%) within the five years. However, the trend of RTA by heavy injury and light injury were constant but with a negligible difference within the specified years. On the other hand, between years trend analysis shows that the rate of death related RTA from 2011-2012 depicted a (12%) increment; rate of RTA with heavy injury from 2011-2012 had increased by (32.25%), whereas the rate of light injury from 2011-2012 showed an increment of (32.34%). Moreover, rate of RTA from 2012-2013 reveals that there was increment of death rate by (10.80%), heavy injury by (7.3%), light injury decreased by (8.16%), material damage increased by (22.42%). Similarly, rate of RTA from 2013-2014 showed an increment of death rate by (12.19%), heavy injury by (21.05%), light injury by (46.66%), and material damage by 39.69%. Last but not least, rate of RTA from 2014-2015 depicted an increment of death rate, heavy injury, material damage by 13.3%, 6.52%, and 21.31% respectively. However, light injury had decreased by 6.06%. All in all, the trend in this figure indicated a significant increment of death rate and material damage in the study area.

It can also be inferred that the heavy injury and minor injury presented in the analysis showed a constant increment with a slight difference in light injury in trend analysis in the study area.

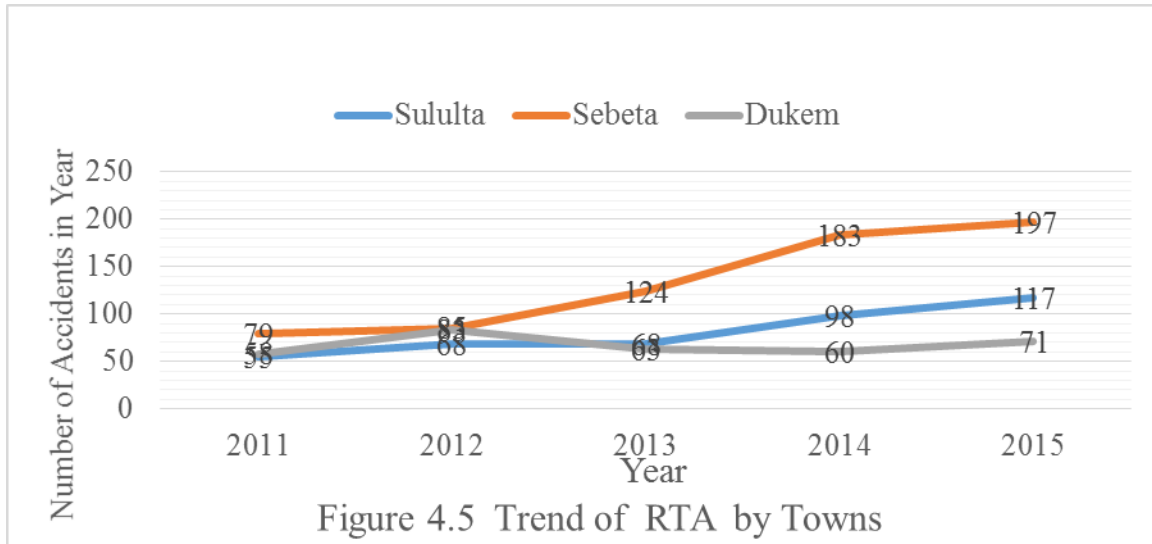
4.1.4 Trends of RTAs by Material Damage



Source: Police records of the study area from 2011-2015.

The estimated economic cost had increased by the rate of 174% from 2011-2015. More specifically, the estimated economic cost from 2011-2012 increased by 15.71%, from 2012-2013 by 23.13%, from 2013-2014 by 46.01%, and from 2014-2015 by 31.76%. Generally, the increment of economic cost by RTA by itself had significant. Particularly, at the end of the study year, it had extremely increased. Therefore, based up on theoretical ground, the possible explanation is that in any accident, be it death of the road user or not the probability of material damage is always high, except few cases by which a pedestrian is hit by vehicles.

4.1.5 Trends of RTAs by Towns



Source: police records of the study area from 2011-2015.

Figure 4.5 indicates that out of 1407 accidents recorded in the study area, the lion share was taken by Sebeta town with 668 accidents during the study time and area, followed by Sululta town with 406 accidents. The least recorded accident which was 333 had happened in Dukem town. More specifically, the rate of RTA increment in Sebeta town with in the five years had been increased by 149%, in Sululta by 98% and in Dukem town by 22.43%. This indicates that the rate of RTA in Sebeta town had been highly increased than Sululta and Dukem towns. In other words, this statistics shows that Sebeta town is highly exposed to road traffic accidents than Sululta and Dukem towns. In contrary, Dukem took the lowest rate of RTA. To identify the reason behind the difference in the record of accidents in the study area, the researcher interviewed the zonal traffic police chief and transport authorities. The results were described as follows: The interview was conducted with traffic police chief inspector of the zone, and he mentioned that; “Most of the RTAs were occurred in Sebeta town than Sululta and Dukem because some vehicles coming from eastern direction often load smuggled materials (like electronics, used cloth, coal and other goods). For this fact, vehicles often change their ways in reckless driving to Sebeta and Alemgena road in order to escape from the eyes of the police. This made the accident significantly high in number than other towns with in the zones.”

Similarly another traffic police said that; “The vulnerability of Sululta town as compared to Dukam town is because of the ‘black spot’ areas in Sululta town. If there is a simple negligent driving, the black spot areas might be exposed to serious RTA than Dukem town road way.” The zonal traffic chief mentioned that “Dukem town records low RTA than other towns because of the existence of active traffic police inspection and regulatory activities; controlling illegal items that enter in to the country without taxation through black market besides the routine traffic police inspection work.”

4.1.6. Pattern of RTAs in Oromia Special Zone Surrounding Finfine

4.1.6.1. RTAs Distribution by Driver’s Age

Table 4.1, RTAs distribution by driver’s age

N	Age group	Accident implication (consequence)					
		Death	Heavy injury	Light injury	Material damage	Total	%
1	18-30 age	84	126	154	414	768	55
2	From 31-45	80	71	91	273	515	37
3	Above 45 years	45	8	14	47	114	8
	Total	209	205	259	734	1407	100

Source: Police records of the study area from 2011-2015.

Table 4.1 indicates that the highest which is about 55 % RTAs were occurred by age group of (18-30 years) drivers followed by age group of (31-45 years) which was about 37 %. Whereas, the lowest RTA was about 8 % which was occurred by age group of above 45 years old drivers. In order to elucidate the differences from the traffic police key informant the interviewer asked why this age group (18-30) commits the highest RTAs while those who are 45 years old groups commit fewer accidents. Accordingly, the officer responded that “age group between 18-30 was youngsters, and these young drivers are careless in their behavior by nature, and they drive on speed and on reckless ways to generate more income rather than to safeguard themselves and their passengers. However, adults and old drivers aged above 45 years are relatively cool and follow safe driving mode i.e. drive on normal speed and not compete each other while driving.”

The other semi structured interview with a 51 years old pedestrians depicted that nowadays,

Most of the drivers are too young, they consider as if the best driving ability for them means driving at high speed; passing others vehicles on the road; reach their destination too early or before the expected time; taking the steering of the vehicle with one hand; not honking for pedestrians from distant; and arriving and talking with some passengers, opening tape recorders and radio out loud and etc. are their unique characteristics.

4.1.6.2 Distribution of RTAs by Driver’s Sex

The result of table 4.2 shows that about 97 % of RTAs committed by male driver whereas, about 3% of the RTAs committed by the female drivers. Interview with traffic police officer stated that; “female drivers respect the traffic laws even they drive on normal speed whereas some male drivers follow negligent behavior during driving.” Similarly the other traffic police officer said that;

In our area, it is evident that there are a number of commercial vehicles driven by male drivers during night time, at this time, drivers are often caught with chewing ‘khat’ which creates high possibility for road traffic accidents by fatigue, and this case is almost nonexistent with female drives.

Table 4.2 Distribution of RTAs by Driver’s Sex

N	Sex	Accident implication (Consequence)					
		Death	Heavy injury	Light injury	Material damage	Total	%
1	Male	197	197	245	720	1359	97
2	Female	12	8	14	14	48	3
	Total	209	205	259	734	1407	100

Source: Police records of the study area from 2011-2015.

4.1.6.3 Distribution of RTAs by Driver’s Level of Education

Table 4.3 illustrates that, 39% of RTAs were committed by second cycle primary education level drivers followed by 29% of RTAs which were committed by drivers who quitted their

education at secondary school level. What is more, 18% of RTA was committed by the drivers who were at their first cycle primary education level. The lowest, only about 14% of RTAs, were committed by drivers who are above secondary level of education.

Table 4.3 Distribution of RTAs by Driver’s Level of Education

No	Level of Education	Accident implication(consequence)				Total	%
		Death	Heavy injury	Light injury	Material damage		
1	First cycle primary education level (1-4)	26	23	30	189	268	19.04
2	Second cycle primary education level (5-8)	63	76	90	321	550	39
3	Secondary school level (8-12)	70	67	102	163	402	29
4	Above secondary school level	50	39	37	61	197	14
Total		209	205	259	734	1407	100

Source: police records of the study area from 2011-2015.

4.1.6.4 Distribution of RTAs by Driver’s Driving Experience

Table 4.4 depicted that about 36 % of RTAs were committed by below one year experienced drivers, followed by 30 % of RTAs which were committed by 1-2 year experienced drivers. The lowest RTAs, which were only 7% of RTAs, were committed by the drivers who have above 10 year of driving experience. Others, 16 % of RTAs, were happened by drivers having 3-5 years experiences, and about 11% of RTAs were committed by drivers having 5-10 years of driving experience. Related to this, the key informant transport authority Head said that

Short time experienced drivers highly exposed to RTAs, for the reason that they tried to drive with high speed and passing other vehicles, which is considered by these kinds of drivers as a deviant and they want to show this in front of others. And this exposed them to RTA than more experienced drivers. So the higher the experience of the drivers is the lower the RTA’s and the reverse is true.

Table 4.4 Distribution of RTAs by Driver's Driving Experience

N o	Driving experience	Accident implication (Consequence)					Total	%
		Death	Heavy injury	Light injury	Material damage			
1	Below one year	77	83	92	254	506	36	
2	From 1-2 years	64	53	61	238	416	30	
3	From 3-5 years	26	38	28	127	219	16	
4	From 5-10 years	17	24	36	84	161	11	
5	Above 10 years	25	7	42	31	105	7	
	Total	209	205	259	734	1407	100	

Source: police records of the study area from 2011-2015.

4.1.6.5 Distribution of RTAs by Driver's Vehicle Relation (Ownership)

According to table 4.5, about 83 % of RTAs were caused by employed drivers and only 17 % of RTAs occurred by vehicle owners. The key informant traffic police officer said that;

Some employed drivers have a contract agreement on daily bases to submit some amount of money on a fixed way. After he/she fulfill that money for owner of his/her, he/she started to work for him/her. This made him/her to drive at high speed without considering him/her safety. So, more RTAs are occurred by employee drivers than their counterparts.

Table 4.5 Distribution of RTAs by Driver's Vehicle Relation (Ownership)

N o	Sex	Accident implication (Consequence)					Total	%
		Death	Heavy injury	Light injury	Material damage			
1	Vehicle owners	39	42	52	103	238	17	
2	Employee drivers	170	163	207	631	1169	83	
	Total	209	205	259	734	1407	100	

Source: police records of the study area from 2011-2015

4.1.6.6 Distribution of RTAs by Age of Vehicles

According to table 4.6, the highest, about 35 % of road traffic accidents were occurred by vehicles which are between 5-10 years old whereas the least, 2% of RTAs were occurred by up to one year old served vehicles. Pertinent to this, semi structured interview with a 42 years old driver depicted that “The old vehicles have a problem of mechanical part, like brake, steering, tires, lights and other problems. These mechanical defects need routine check up; if not, they will be easily exposed to RTA.

Table 4.6 Distribution of RTAs by Age of Vehicles

N o	Service year	Accident implication (Consequence)					Total	%
		death	Heavy injury	Light injury	Material damage			
1	Up to 1 year	8	6	3	16	33	2	
2	1-2 years	6	15	13	72	106	8	
3	2-5 years	36	45	60	165	306	22	
4	5- 10years	81	62	97	203	443	31	
5	Above 10 years	76	76	85	256	493	35	
6	unknown	2	1	1	22	26	2	
	Total	209	205	259	734	1407	100	

Source: Study area police statistics registration from 2011-2015.

4.1.6.7. Distribution of RTAs by Major Risk Factors

The distribution of RTAs categorized based up on a pre-set conceptual framework model which indicated in chapter one Figure 1.1 to the major risk factors for RTAs. Thus, based on table 4.11, behavioral factors contributed for about 86 % of RTAs in the distribution, vehicles factor contributed for near 5%, road and environmental factors contributed for around 7% and traffic law and regulation only contributed for about 2% for the general accident distribution in the study area. In addition, the key informant traffic police inspector said that “Most of the accidents occurred because of driver’s behavioral problem especially by reckless drivers, speed driving and not giving priority to pedestrians, which were the

leading risk factors for RTA.” In line with this, similar risk factors were identified and described in (Case 3, page 52).

Table 4.7 Distribution of RTAs by Major Risk Factors

No	Causes	Accident implication (consequence)					Total	%
		Death	Heavy injury	Light injury	Material damage			
I. Behavioral factors								
1	Drink driving	3	2	5	8	18	1.27	
2	Addiction driving		2	3	4	9	0.63	
3	Driving opposite of right side	2	2	3	12	19	1.35	
4	Not giving priority to vehicles	3	30	3	42	78	5.54	
5	Not giving priority to pedestrians	73	69	126	65	333	23.66	
6	Not keeping the distance b/n vehicles	1	7	6	144	158	11.22	
7	Passing on curve side driving				10	10	0.7	
8	Change the direction after by passing	1		2	25	28	1.99	
9	Driving over normal speed	90	75	73	220	458	32.55	
10	Reckless driving	5	5	6	49	65	4.61	
11	Improper changing the direction	1	2	2	10	15	1.066	
12	Start driving wrongly			2	8	10	0.71	
13	Improper stopping				1	1	0.07	
14	Fatigue driving	1		1	1	3	0.21	
15	Driving on stress				1	1	0.07	

16	Pedestrian problem	1		13		14	0.99
17	Improper loading	1	2	2		5	0.35
II. Vehicle factors							
18	Break problem	3		1	27	31	2.20
19	Old Tyres problem		1		1	2	0.142
20	Tyres blast	5	4	3	12	24	1.705
21	Steering problem				1	1	0.07
III. Road and environment factors							
22	Road and environment problem	17	4	8	66	95	6.75
IV. Traffic law and regulation factors							
23	By passing traffic police order	2			25	27	1.91
24	By passing Priority giving sign				2	2	0.142
Total		209	205	259	734	1407	100

Source: Police statistics registration from 2011-2015

4.2 Risk Factors Associated with Road Traffic Accident

4.2.1 Introduction

This section represents the findings on risk factors associated with road traffic accident. The findings are based on FGD, in-depth interviews with accident victims, semi structured interview with pedestrians and drivers, key informant interview with government experts and officials from transport authority, ministry of health and traffic police office of Oromia special zone surrounding Finfine, were the main factors contributed their own share to mitigate road traffic accident in the study area were included.

4.2.2 Identified Risk Factors

4.2.2.1 Behavioral Factors for RTAs

The major risk factors for RTAs based on accidents distribution were behavioral factors. It has contributed about 86 % for RTAs in the pattern analysis data of the study area. The gathered and analyzed qualitative data of behavioral factors presented in the following section.

The key informant, chief inspector of the zone said that;

Most of the accidents were resulted because of driving with high speed. Since the drivers can't control the vehicles. Any simple track of obstacle may lead to an accident. Therefore, in these type of situations, drivers have only an option; ether directly turning of the vehicle or colliding.

Accordingly, in the following figure, the cause of accident was over speeding.



Source: Sebeta Traffic Police 2015

The accident was happend in 2015 and thereby three peoples were died and approximately four million ETB material damage was recorded.

The FGD participants mentioned that, not only the drivers were responsible for over speed driving but also the passengers encourages over speed driving. Especially, when passengers need to arrive to their destination in short period of time.

According to Semi structured interviewee held with 28 years pedestrian, he has worried always while he cross the road, even in zebra crossing because most of the drivers don't

give priority to pedestrians. As a result, most of the accidents occurred at zebra crossing. Similar response given by the key informant traffic police officer stated that;

Greatest of the accidents recorded on the place where the drivers must reduce vehicles speed, particularly on zebra crossing area of the road. Drivers have not given priority for pedestrians while crossing the road. He witnessed one of incidents that happened on zebra crossing, where a pregnant woman was killed at the spot by minibus vehicle.

In addition to this, the cases of two victims in the study were because of not giving priority for pedestrians (Refer cases: 1 and 2 on page.50-51). Regarding the behaviors of pedestrians, a 34 years old driver said that, “Some pedestrians occupied the roadway of the vehicles by talking with their friends or by mobile. I don’t know why they do these; perhaps they forgot that a car can kill them.” For example, the following figure shows an accident happened in Sululta town in 2015 because of not keeping the distance between the vehicles. Three peopels were died.



Source: Sululta town traffic Police 2015

Transport authority boss also claimed that:

Most of the time coalition of vehicles happens because of not keeping the distance between the vehicles. This implies that failure of drivers to forecast the distance and speed of the other vehicles. Besides, some drivers give vehicles for their friends to practice driving on the main road after they freight passengers which are very serious in the level of the accidents.

According to key informant traffic police officer added;

Drivers compete each other to generate more income particularly, some of the drivers have contracting informally with vehicle owners to offer daily income of the vehicle on fixed amount. However, this type of contractually agreed drivers worked to buy fuel for the vehicles, to deliver income for the owners and lastly for themselves. To reach this, the driver must hurry in order to fill the amount of money contracted with the owner without rest. Besides, they have no time even to check mechanical part of the vehicles. This kind of driving activity is called 'gelehe amta' literally defined as 'kill and bring' by the drivers which mean whatever you kill, you must fulfill the amount of money you agreed to reach.

Reckless driving had contribution for the injury of serious accident (refer case 3 page.52).



Source: Sululta traffic police accident report 2015

The above picked accident picture occurred in Sululta town in 2015 caused by reckless driving and eight peoples died while four peoples were seriously injured.

Semi structured interview with 25 years old driver said that, “there is competition for passengers, if you are not fast and smart you can’t get any passenger to pick.” According to evidence obtained from FGD participant informed that: there is a problem of irresponsible driving because of competition between drivers. For the reason that, to take the first rank of the bus station order to get more passengers.

Information obtained from the FGD participant mentioned that, some of the drivers use khat while they drive. Khat is one of the stimulants that the drivers used to defend their fatigue and considered as a support drug which helps to energize them from fatigue. Participants mentioned that chewing khat exposed drivers to RTAs by stimulating them to drive more than normal speed and recklessly. Besides, key informant traffic police said that:

Using mobile phone while driving, increasing or decreasing the volume of radio and taking the steering with one hand were some of the risk factors committed by drivers. While, they commit this; RTAs level of crush and the level of turning will be more serious.

Most of the vehicles start to drive from long distance area of the North, the South West, the East, the North West and South way to arrive Addis Ababa. After they finished that long distance they would be tired for the reason that, long distance driving without break which make the accident level more serious (Key informant interview with traffic police).



Source : Study area traffic police accident report. This accident happened because of fatigue driving and by the accident 3 people were died.

In my field observation, one day at 1:30 pm local time, I observed one truck heavily loading materials to Eastern direction to Dukem town on the way to Adama road. Then, I had discussed with one assistance drivers stops near to the vehicle. In the dialogue he stated that: “we call this long height loading as ‘Jaaffii’ literally defined as ‘over loading’. It has impact on normal driving also sometimes resulted in turning of the vehicles happened. But we need additional income so that, we have no other alternative.” I had identified as over loading was other risk factor in the study area.

4.2.2.2 Road and Environmental Factors for RTAs

In this sub section of the chapter the studies focused on the major risk factors related with road and environment factors based on FGD participants, key informant interview, semi structured interview and non-participant observation. The gathered and analyzed qualitative data of road and environmental factors presents in the following section.

Information obtained from the FGD participants shows that, even though a lot of money was budgeted for road construction, it get big holes after few months of the completion of construction. Likewise, Key informant traffic police thought that; “the road has not maintained properly throughout time. This poor road create probability for RTA while, the drivers by pass this hole.” The informant transport authority expert added that;

The number of vehicles and the capacity of road worsen the problem of road traffic accident. There is a serious congestion between vehicles. It is difficult to cross the road for pedestrians especially, at the morning and afternoon while people come back from their work place.

Finally evidences obtained from FGD specified that, there is a problem of pedestrian’s road crossing (zebra) areas, once painted during road construction time no one maintain it. Therefore, it creates a hidden line not visible for drivers and pedestrians.

Key informant traffic police chief said that; “at the time when serious wind, rain, snow and the like bad weather condition the accident has increased.” Similar response by Female pedestrian 35 ages revealed that; “during the rainy season the drivers not identify the correct way of the road for the reason that, road lacking margin indicator stone.” Similarly, the traffic police officer added that; “There are areas that are black spot or area commonly known by frequent road traffic accident. These areas are characterized by slope, poor quality of surveying and the curve nature of road exposing drivers to RTAs.”

Data obtained from FGD revealed that, nowadays with in the town there are new buildings, on the way of construction in the road side. However, the owner of the buildings left

materials like sand, stone, gravel, wood and reinforcement metals on the road side. These things are on the pedestrian way, while the pedestrians lack the space to step, they occupy main road of the vehicles which leads pedestrians to road traffic accidents.

In the time of non-participant observation, I have seen the vehicle parked in the pedestrian's way. Particularly, the large vehicles loading fuel and other materials have stopped in the road side of pedestrian way by covering large area of road. At this time, the pedestrians directly go to use the main vehicle way to cross.

Information obtained from FGD participants cited that, there are street vendors working their business in the street side of the road. The micro and small enterprise office has planned to construct a kind of container for them, but not implemented. Whereas, the trade office and traffic police office prohibit them not to conduct this activity. However, it has been causes of road traffic accidents not yet solved.

4.2.2.3 Vehicle Factor for Road Traffic Accident

This sub section of the study explore the risk factors of RTAs in relation to vehicle factors based on the study key informants, FGD participants, drivers and pedestrians responses.

Interview with a 25 age driver said that; “brake problem is among the serious problems now days. Some vehicle brake is not good, after you drive long distance; you must stop and cool the brake of the vehicles if not it is not functional.” Similar to this, interview with driver's age 34 understood that; “tyres problem especially, the front leg tyres blast or tyres remove has been more serious risk factor for RTAs.”



Source: Study area traffic police accident report.

The accident was happened because of brake problem that, a person was died and around 200,000 ETB material damaged by the accident.

Interview with female driver age of 32 years old said that; “old model vehicles characterized by weak hand brake and not flexible steering. This features, create probability of returned back to other vehicles because of the hand brake problem. Drivers don’t check you by side mirror (Spokiyo) because of opposite side of side mirror from the recent vehicle types.” In addition to this, 34 age driver said that; “the vehicles are exposed to road traffic accident because of absence of regular inspection.”

The key informant transport authority said that;

The majority of motorbike drivers and car drivers don’t use helmets and safety belt respectively. As a result, most safety belts aren’t functional and not maintained like other vehicle parts. Some drivers use the belt only to escape from traffic police punishment.

The traffic police officer said that; “Vehicles stopped because of mechanical problem associated with reflectors using while the vehicles come or pass. This is one of the serious risk factors during night time; because of poor visibility of the stopped vehicle.” Similarly, interviewed driver, age 25, said that; “during night time certain drivers make long light ahead of you which makes you lost your correct road way.”

4.2.2.4 Factors in Relation to System of Traffic Law Control and Regulation

System of traffic laws control and regulations are the fourth main risk factors for RTAs in trend and patten analysis which contribute for about 2 % in the study area. The collected and analyzed qualitative data of system of traffic law control and regulation presents in the following section.

The key informant traffic police chief inspector said that:

We have really best laws in the proclamation, rules and regulations which prohibit speed driving and drink driving. However, not implemented because of lack of equipment like speed control radar and alcohol taster. So that, we have no evidence either the drivers are driving above normal speed or after intoxicated.

Semi structured interview with 32 age female driver stated that; “some drivers are using forged driving licenses which points to serious traffic accidents.”

Depending on the response raised by driver I have asked the traffic police officer saying this, Is there a problem of forged driving license in your area? *He responded that:*

Yes, we have seen it sometimes. However, currently driving licenses are being offered by different regional states. These licenses have different registration number with different regions of a country. In addition to this the forged license seems normal license but, we check it using forensic machine investigation.

Semi structured interview with pedestrian aged 51 said that; “sometimes the drivers involve in conflict with traffic police. After that, they drive on angry situation and collide with other vehicles or objects.”

Chapter Five

Socio-Economic Implications of RTAs and Legal Gaps of Road Traffic Management

5.1 Socio-Economic Implications of RTAs

The purpose of this section is to presents socio economic implications of RTAs. The findings are based on the data from FGDs participants, in-depth interview with RTA victims, Cases of victims, key informant interviews with health experts, transport authority boss, traffic polices and semi structured interview with pedestrians and drivers.

5.1.1 Social Implications of RTAs

This sub section assessed the social implications of RTAs from the victims, health experts, traffic polices, FGD participants, drivers and pedestrian's perspective points of view.

5.1.1.1 Heath Effect of RTAs on Victims

The results of the study focused on the health effect of RTAs from the victims, FGD participants and health expert's perspectives.

The key informant Female health expert mentioned that:

No rescue team for road traffic accident in the area. Most of the time victims were reached to hospitals very late. Only peoples around accident area and sometimes passengers from other vehicles provide first-aid support to victims. This is very serious for recovering, because of poor health management and inappropriate transporting of victims from the accident area.

Key informant traffic police officer understood that:

Way of treating first aid support to victims is without proper knowledge of handling victims. Everybody participating to safe life, some peoples use reinforcement mental to open the door and the wrinkled part of the vehicles on crushed side. However, on that moment; body of victims may be harmed. In addition to this traffic congestion is the other challenge for delays of victims to hospital.

Traffic police key informant specified that:

We lack protective materials like gloves, we use any available plastic for taking the victims or some time openly. This exposed to different diseases and some traffic polices frustrating the case of HIV/AIDS after post crush rescue supports. In addition to this the victims transported on accessible commercial vehicles in confined situation. This worsens the cases and also the victims were exposed to death.

In-depth interview with (female) victim's age 25 said that;

The doctors and nurses of the hospital received by optimistic reputation on the accident moment before traffic polices. But after one day no one return back to cheek me. In addition to this a big problem was high prices for medical treatments which was difficult to afford.

Similar response by in-depth interview with (male) victim age 34 held that; "treatment for RTAs victims is very expensive and many families cannot afford." In addition (refer case: 1 page.50).

The key informant female health expert expressed that:

Even though medication has contributed for victims to cure injuries, they are not fully treated back to the earlier normal body. A petty accident may expose to, permanent disability of the body, scare in his/her body or face, paralysis in the body either fully or partially, mental disability, deafness or inability to see were some of the health implication after RTAs. All victims of the case study have from different levels of health implications (Refer case 1-3 page.50-52).

Similarly, according to case one the victims lost his hand and leg and still, hurt with headaches (Refer case: 1 page.50). Key informant health expert stated that; "Victims may exposed to as a minimum skin scare or scratch on their body this exposed them to stress and mental illness while they recall their earlier body condition with the recent deformed or scared body after accident."

All in depth interview with victims show consistency response on how victims observed the new situation of becoming permanently disabled. They mentioned that, it was very difficult for them to accept that they were without one leg or other distorted body and skin damage. They revealed that, life became meaningless to them; because they had experience on how disabled people suffered in their society.

FGD participant stated that: the budget allocated for supporting disables is very small but the number of disables and other vulnerable groups are increasing from time to time. The budget allocated for free medication is not enough and it is not managed properly.

Case: 1

Sani is 24; he was an athlete and he is single. He completed grade ten. The day was on January 20, 2015. He was running from Sululta to Addis Ababa. He didn't realize that a vehicle was coming from his back side direction. One vehicle passed by his front side, the other one hit Sani on his hand and leg. As Sani told, he was taken to a nearby hospital and he stayed and medicated there for more than a month.

Consequently, his hand and leg is permanently disabled, and he also suffered from headache even after total medication is over. Now, he is suffering from general health problems, nightmare and no significant improvement after accident. Even his family is worried about his current health situation. He sadly told that it is difficult to accept disability: accepting to live with only one leg is not easy. Now his mother has sold her land, which is her only property that she has in the rural area, for the fact that his medication is prolonged.”

5.1.1.2 Effect of RTAs on Family Disorganization and Divorce

This part of the study focused on the effect of RTA on family disorganization and divorce from the victims and transport authority expert's perspective.

According to case two of the study, there was divorce and family disorganization on the victim's family after RTA (Refer case: 2page.51). In addition to this key informant transport authority expert thought that, *not only the victims of the family exposed to family disorganization and divorce. However, the drivers killing pedestrians and passengers accused by court could be arrested. This exposed the driver's family also to family disorganization and divorce.*

Case: 2

Atsede, in her 17, was married, she has three children. She has lived 8 years with her husband before the accident had happened. She was supporting her family working on a daily laborer as "off farm activity" in Sululta town. As usual, she was walking for routine activity.

The day was on Monday; she was walking on the road side to cross the road to the direction of her working place. Suddenly, two vehicles came on speed to pass on the opposite way. However, Atsede was able to detect the one on the right side, not the other to her opposite side. Thus, the opposite side vehicle knocked her out. After that, she doesn't know what was happened for hours.

Now, her left hand, ribs and leg were seriously damaged by the accident, and she was transported for treatment to different hospitals. Unfortunately, she told that her left hand and leg are disabled permanently.

She lost not only her hand and leg, but also her husband existed only for four month after the accident. The fate of her

children also rested on her family to support them. Now she is on serious social and financial problems.

Even though she has tried to use the compensation fee which was offered for her life sustaining, she used it for purchasing food and clothing for her children's, and she will not know about tomorrow, what will happens after using the compensation fee. Atside was sadly told that God knows about tomorrow.

5.1.1.3 Effect of RTAs on Jobs of Victims

This part of the study focused on the effect of RTA on job from the victims and transport authority expert's perspective.

In-depth interview with victim (male) age 45 said that: "the employer organizations have presumption of disabled person is not active like normal person for activities what they planned but we have capacity to do that like normal person."

All of interviewed victims informed that, after RTA they were worried about losing jobs and plans which impose difficulties on how to cope. It was revealed by all participants in the in-depth interview.

According to case: 3 of the study RTA problem on the earlier job of the victims and has effect on the families of the victims was identified (Refer case: 3).

Case: 3

Abraham is 34 years old; he was a driver before two years. He was hard working and he had supported his family by driving commercial minibus from Dukem to Addis Ababa for years, but sometimes he used to go outside this area for a contract work which is part of his daily work and let him earn a bit more money.

The day was Saturday; he was driving from Addis Ababa to Dukem and left only two kilometers. Fortunately, a long truck vehicle had lost his direction and drove to Abraham's way; the case was not controllable, and suddenly the long vehicle collided with Abraham's vehicles. In the accident one passenger died fatally from Joni's vehicle while Abraham was injured in his face, hand and leg. After medication, he was permanently disabled in his left hand, left leg and his face was deformed.

Abraham has no capacity to drive vehicle anymore because of the serious damage happened to his one leg and one hand, which is totally disabled. What is more, his post crash medication needs his family support. He said, his family was away from other activity especially, his younger brother resigned out from the employed industry labor work, not only his work and income but, also his family exposed to further loss of income. However, currently he has working in a bus station as order providers for the vehicles. Yet, his income is not enough to support his life. Lastly, he said that, I will pray for all; please God don't give a road traffic accident even for an enemy.

Semi structured interview conducted with driver age 42 thought that;

Things were decided before our birth how to live for the rest of our life. This can be related to belief to the fact that nothing prevented RTAs induced from happening. And the situation could not be changed. We should trust on God. Therefore there was nothing wrong on my side.

In-depth interviewee victims age 24 said that: "I believe that the accident was God's will and I did not want to fight with vehicle owner for compensation because it could also

happen to anybody and he said it is '*Yearba ken idile new*' and it is already decided." According to cases 1-3, the victims thanks God who save his/her life, trust on God about the future and pray for others were some of the religious responses raised in the cases (Refer:Case1-3 page.50-52).

5.1.1.4 Effects of RTAs on Social Network of Victims

This part of the study focused on consequences of RTA on social network from the victim's perspective.

In-depth interview with 25 age women victims' response was after RTA happened on her she lost most of her friends. Like earlier time, now she has no friends. She said; "I recognized people meet you if you have well and competent enough in every direction of life."

In-depth interview with 45 age male victims thought that; "Saying empathy talk.... Everybody loves you, create a discussion, talk with you while you are Ok and fine. If you are not fine; not only your friends but also your mother hates you so that, I don't like to blame my friends."

5.1.2 Economic Implication of RTA

This sub section assessed the economic implication of RTA from the victims, health experts, drivers and FGD participant's perspective point of view.

5.1.2.1 Economic Dependency of Victims

This part of results focused on the effect of RTA on economic dependency from the victims, FGD participants and health expert's perspectives point of view.

According to case: 3 narrative findings the post crush medication needs his family support. Which create dependency burden (Refer case: 3page.52).

The key informant health expert said that:

Irrespective of the cost of health care and reintegration, injured peoples bear additional cost. This all problems can deprive an individual victim. And can results dependency on family for financial support and routine physical care which expose additional burden on the supporting family members supporting cost.

According to case: 3 of the study the injury of the victim exposed his family to further loss of income (Refer case: 3page.52). Similarly the FGD Participant (female) specifies as, many children of RTAs victims have failed to continue with education because of lack of school fees.

In-depth interviews with 34 age driver victims said that; “I still perceive myself as important person who can contribute to the development of the nation if I could get an expected opportunities. In addition, I don’t like to beg in the streets.”

In-depth interviewed victim age 45 perceives himself as people who were banned in the society because; there is no much support for him both from government and non-government organization. In addition to this, he couldn’t get access to financial loans.

5.1.2.2 Coping Strategy

This part of results focused on the effect of RTA on coping strategy of victim’s from the victim’s perspectives.

According to case: 1 of the study victim’s his mother sold her land which was her only property that she has in the rural area for the fact that his medication was prolonged. Similarly, response from the case: 4 of the study there was a problem of coping, after the death of the breadwinner of the family they try to cope with different optional activity (Refer case: 1 and 4 page50-52).

Case: 4

Bezi, in her 22 was married and have two children, and her husband was a driver, and he was supporting his family based on the income of his driving salary. However, Bezi's husband died before a year and eight months by a car accident. Though he was taken to hospital alive and treated for the serious injury for five consecutive days, he was not able to recover, and finally he died. Before death of her husband, Bezi spent a number of birr for transport, medication and other supporting cost from what they had saved before, but her husband was not recovered.

After his death, she was exposed to different social and economic problems, and life was difficult for her; it was difficult to cope up and to educate her children. The compensation given for her was not enough even to start any business, but as a last option, she chose to purchase chips roasting machine by borrowing money from her relatives. Now, preparing and selling chips and baking and selling enjera has been her main income generating ways, which helping her to cope with life and support her children and herself.

5.2 Rules and Regulation Gaps of Road Traffic Management

This section of the finding depend on the key informant interview with traffic police, transport authority experts and FGD with traffic police, transport authority, health experts, pedestrians and drivers.

The traffic safety and management has ratified on different proclamations and regulations in the study area; and some of them are proclamation No.468/2005, regulation No. 205/2011, regulation No. 163/2003, 208/2003 and regulation No. 01/2004 and Oromia regional state, regulation No. 143/2004.

The key informant traffic police chief inspector said that: “there is no law which prohibits poor quality tyres. Now a day’s one of the serious vehicle factor which needs argent policy.”

FGD participant mentioned that, most of the RTAs were recorded on the night time but, there were no policy or government regulation which needs to permit working time for traffic police at night time and fully prohibit the drivers who drive at night time.

Interviewee with pedestrians (female) age 35 stated that:

There is no policy which regulates the number of vehicles by road infrastructure size and modification. The number of vehicle has been increasing from time to time but, the road way has not been balancing with and not maintained.

According to evidence obtained from FGD frequently informed that: Before the new offering system of driving license, it was through upgrading system from one to fifth grades based on driving experience of drivers. Nevertheless, nowadays one young age driver who have no experience of driving are being offered with fifth grade driving license by the current system. He drive long vehicle without any experience. That is why the number of RTAs has been increased through time.

One of the chief inspector traffic police said that; “the law which permits offering driving license fifth, fourth grade at once seems like creating a best business for driving license teaching schools.”

Key informant interview with health expert said that:

There is a problem of appropriate diagnosis for offering driving license. The diagnosis has provided by the government health centers however, the type of diagnosis is only to cheek the eye sight problem. But further diagnose for epilepsy,

blood pressure and heart disease must be included in order to make full diagnosis. Since these diseases have contributions for road traffic accidents. With the intention of this, the government has gap on the requirements of health diagnosis for driving license.

Key informant of transport authority expert understood that;

Age of drivers is not accurately known and there is not any birth certificate to identify ether the driver age is above eighty or below that. So that, some drivers were below eighteen years but, no one have evidence to say that. Nevertheless, there is a policy gap of normal age identification to deliver properly identified driving license by age.

Key informant interview with transport authority expert thought that; “I am afraid off that to decide and provide common place for street venders because, they are citizens but, exposed to road traffic accident. And it has lack of clear policy which solves this problem.”

Key informant interview with traffic police said that;

After the drivers commit driving crime the court made the drivers free of custody only with cash testimony. After this, it will be difficult to accuse the drivers who have money and the law only applied on the poor drivers. This creates discrimination even between the drivers commits driving crime. This needs the amendment of the criminal procedural laws.

One of 36 years drivers with semi structured interview thought that;

Corruption has created great contribution for increment of the RTAs. Especially, corruption committed by driving license teaching school during training; create difference between drivers. Still, some of the drivers properly attained the training while other gets the license in their house.

Response by the same participant mentioned that;

We have really best laws in the proclamation, rules and regulations which prohibit speed driving and drink driving. However, not implemented because of lack of equipment's like speed control radar and alcohol taster. So that, we have no evidence either the drivers is driving above normal speed or drink driving.

Chapter Six

Discussion

Currently, the trend of RTAs within the study period had increased by 101%. This indicates that the RTAs had been increasing at an alarming rate. The behavioral factors had contributed for about 86% of the largest share of the trend with in the study area. Similar study, conducted in Ethiopia by Persson (2008) described that, the human factors were responsible for 91.1 % of all causes. Trends of RTAs by death rate increased by 57 % within five year, trends of RTAs by rate of material damage increased by 144% and trend of RTAs by heavy injury and light injury were constant with slight differences in light injuries whereas, the estimated economic cost within the five year had increased by 174%. Generally, the increment of economic cost by RTAs had showed significant increment and at the end of the study year extremely increased.

One of the main risk factors identified were over speed driving, this problem is one of foremost risk factor contributing for RTA in the study area. Similarly, finding by Kebede (2013) stated that excessive speed is major contributing factor to road crashes. Similarly, the velocity when braking, triggering factors, potential object type, and potential crash type exerted the greatest influence on the driving-risk levels in near-crashes (Gubing 2015). The laws for speed limit have not been applied in the study area because of lack of material called Radar. The speed control radar has decreases the RTA levels by 61% during traffic inspection (Edna 2016). To manage risk factor of over speed driving of RTA problems the government has law under Proclamation No.468/2005 which is currently in use law of road and transport authority. However, this law has gaps on lack of clarity to the speed limits for different vehicle types on different classes of road.

Not giving priority for pedestrians was the leading risk factor for RTAs and also on daily bases a number of peoples are killed. Correspondingly, other finding indicated that, not giving priority has significant effect on road traffic accident and crush level (Kirolos 2015).

Likewise, overloading was one of the other identified risk factors for RTA by the study. Similarly other finding declared that, over loading and the length of bus-only center lanes

had the largest effect on increasing traffic crashes (Kyoung *et al* 2016). Similarly other finding estimated that 25% of accidents involving trucks are caused by inadequate load securing (Han 2015).

The other recognized risk factor for RTA in the study area was fatigue driving. It is one of the serious risk factor identified by the researcher. Related finding stated that, driver's fatigue is a major factor in creating room for casualty crashes (Beth 2014). Likewise, fatigue due to long distance driving is a cause to road accidents (Howard *et al* 2014).

Likewise, night time driving was the other identified serious risk factor in the study area. Other study states that the relationship between night time driving, passenger carriage, and crash outcome remind significant impact on road traffic accident (Lawrence 2008). According to labor proclamation No. 377/2003, normal hours of work shall not exceed eight hours a day or 48 hours a week. But, the key informant traffic police said that; "some drivers have been driving vehicles more than 16 hours per day using '*khat*'."

Drink driving was the other risk factor identified for RTA in the study area. Other finding also specify that driving under the influence of alcohol or other drug abuse is known to impair the driver's ability to judge and control the vehicle (GuohulaLi *et al* 2013; ElviK 2013 and Sebege *et al* 2014). To manage drink driving risk factor of RTAs problems the government has law under Proclamation No.468/2005 of the currently in use law of road and transport authority. However no alcohol tester for traffic police inspection in the study area. Other study stated that using alchole tester license suspension was associated with 65.2% reduction in drinking driving recidivism (Sebege *et al.* 2014).

Driving on stress was one of the major identified risk factors to RTAs in the study area. Similar finding by (Chan 2016) conducted on behavior of drivers stated that the correlations between driving anger and accident-related conditions is relatively middle levels, were still statistically significant. Moreover, the road problem was risk factor identifayed in the study area. Similar, studies stated that the impact of road enviroment on drivers has the effects of driver distraction were different for straight and curved roadways, indicating a stronger influence of the road environment in steering (Merat 2016). Similar study described that

wet road surface has impact for RTA crush level and Signalized intersections has significant impact on Road traffic accident crush severity (Kirolos 2015).

Inability to inspect vehicles on the proper time was the other vehicle factors causes RTAs in the study area. Some vehicle has problem of brake, steering, tyres and engine problem. However, some drivers do not check on time. To manage this problem there is no law or regulation on the condition of tyres. This need urgently amendment as the key informants mentioned. The weak knowledge of the law seemingly extends to the traffic police.

In this study other risk factors identified was forged license. According to the Ethiopian criminal code article 385 prohibit the forged license and having forged license penalized the committed criminals but, it has gap on searching and identifying the forged license.

Corruption was the major legal gap recognized in the study area which aggravates the RTAs case more serious But according to proclamation No.236/2001 and proclamation number 434/2005 on anti-corruption special procedure and rules of evidence proclamation on its articles enforced authorized person to the serving peoples in principles but, in practice it has not been conducted and still the action increasing and not benefiting the society at large.

The constitution materials of new buildings on the street and street vendors were the known risk factors for RTAs. According to proclamation number 686/2002 article 32 of trade registration and license stated that, no business person participate on business without business license and prohibit the street vendors. However, the street vendors have blocking the street especially at night time and the government is not offering optional place of market area for this segment of the society.

According to the key informant traffic police chief said that; “the other legal gap was the issue of equality. According to the constitution of FDRE article 25, stated about the right to equality: All persons are equal before the law and are entitled without any discrimination to the equal protection of the law. In this respect, the criminal procedural law prohibited the drivers who have no capacity to pay testimony fee after committing driving crime. Whereas, the drivers who have capacity to pay testimony fee would be free of custody.

Referring to case one of health implication of the victim indicates that no substantial improvement on his health after medication (Case: 1 page 50). Similar finding stated that pedestrian lower limb injury by RTA should take account of these gait stance effects and prolonged medication (Guibing 2015). The means for estimating all of the costs to the casualty directly related to their recovery from their injuries. The possible explanation from the theory is that the more the victims were poor the more the severity of accident after post crashes because of medication and livelihood capacity.

According to constitution of FDRE article 16, the right of the security of person stated that everybody have the right to protection against bodily harm. Similarly, the social protection policy of Ethiopia on its page10 specifies that it has support to disabled on offering services including physical rehabilitation. However, in the study area; the victims have not supported by anybody even, simple medication. Their children's will have the fate of the street life on this way. So the policy seems lack of enforcement for resolving social problems of victims.

Finally, the theories used for risk factors and socio economic implications in my finding confirm and fit with the study and used explicitly as guiding framework for the study. The system theory which takes behavioral factors, road and environmental factors, vehicle factors and system of traffic law and enforcement factors. The study which takes the RTAs implication in my finding was confirmed by fitting with risk theory. The element of system theory was part of the research conceptual formwork risk factors and the theory strongly fitted with my finding and the theory lead the research structure.

Chapter Seven

Conclusion and Recommendations

This chapter begins by offering a sight on the core basics of the study. It draws the conclusions based on the discussions and analysis made in the previous chapters. It also forwards a range of implications to road safety, policy practice and institutional operations.

7.1 Conclusion

Conclusions entail empirical knowledge generated on the four and inter-related key components of the study: the tendency of the RTA, pattern, risk factors for RTA and socio economic implications on the collective outcomes of the RTAs. Conclusions contribute to narrow the gaps noted in knowledge around the respective study area.

The trend of RTAs from 2011-2015 increased at alarming rate in the study area. Death rate and heavy injury by RTAs had excessively increased. Whereas estimated economic cost within the five years had increased considerably. The increment of economic cost by types of RTAs by itself was significant and at the end of the study year extremely increased.

Regarding comparison of RTAs with the study area towns Sebeta town was the most vulnerable town by RTAs rate. Whereas, the low accident trend of Dukem town by comparing with Sebeta and Sululta. Moreover, lack of giving priority for pedestrians was the leading risk factor for RTAs; pedestrians were killed in the road side. Beside, speed driving was the other most significant factor for cause of RTAs. Likewise, speed driving in the center of the towns create the death of pedestrians and passengers by hitting and coalition with other vehicles or obstacles respectively. Failure of keeping the distance between the vehicles was the main significant risk factor for road traffic accident. Besides, the problem of maintaining road was the factor contribute for RTAs while drivers select the quality road area by waging here and there. Besides, the difficult of black spot areas was the main factor because of the nature and structure of the road way in the study area.

Moreover, the system of offering driving license was a recent serious factor for road traffic accident in relation with the experience of the drivers with the level of driving license for

large vehicles. Besides, the identified social implications of RTA were physical damage, stress and mental disability, paralysis in the body either fully or partially, attempting suicide and diseases in relation to lack of social network and family disorganization and divorce. Likewise, the economic implication of RTA on victims specially, prolonged cost of health care and rehabilitation, dependency on family financial support, injured peoples bear additional budget and routine physical care need extra cost on the supporting family members. Moreover, the difficult to develop their own coping strategy after RTA happen especially, in supporting children's after the death of breadwinner family member.

Finally, no law which prohibit the poor quality of tyres, lack of enforcement on speed law and lack of enforcement of drink driving laws were some of the legal gaps .

7.2 Recommendation

The implications of the research call for ways to combine the theories and the practical actions pertaining to effect relationships between risk factors and implication of road traffic accident. In this respect, the research forwards a range of tangled implications to research and policy in sight of promoting the research practices associated with the sociology of medical sociology this are:

- ✚ Road safety education should be provided in the schools, work areas and even using mass Medias in the towns and strengthen the activity of heath extension services which is the ongoing plan of government road safety education by health extension worker.
- ✚ Assess the problem of existing policy, proclamations, rules, regulations, strategies and institutional setting related to road traffic accident and the capacity for road traffic accident injury prevention in the zone. The towns medical institution should be equip with rescued needed materials.
- ✚ In order to support the disabled victims of the zone the government, non-government organization and the concerned bodies within the area need to provide rehabilitation service and psychological therapy.

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**Annexes
Annex- 1**

Jimma University

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Department of sociology

MA in sociology and social policy

Driver interview guide (semi structured interview)

Information for interviewee

Dear interviewee, this study is about the risk factors and implication of RTA in Oromia Special Zone Surrounding Finfine. The human contribution to RTA in Ethiopia cannot be overemphasized. Traffic safety therefore, appears to be one of the topmost priorities of Ethiopians. Through the present study, this researcher hopes to gather relevant data that will provide useful information to complement those of the institutions involved in traffic safety campaign in the country.

If by any chance a question should make you feel uncomfortable, do not answer it. You can also withdraw from the study at any time you change your mind about participating.

In this study, we only need to know your position and your age range but not your name.

Any information you provide will be held in authoritarian confidence and be used for academic purposes only.

Thank you!

A) Personal Information

Date----- Age----- Sex ----- Occupation -----

B. Questions in Relation to Risk Factors

1. Can you tell me how long you have been driving?
2. Can you tell me about the daily routine drivers work? How did you train for your driver's license?
3. Do you think the type of vehicle has contribution for RTAs?
4. Do you face an accident while you drive?
5. In what ways does the nature of your work affect the way you drive? What attitudes of drivers do you dislike?

6. How do you perceive pedestrian attitudes to road use?
7. In your opinion, do we have “un ethical drivers” on your roads here?
8. What do you think motivates drivers to speed, overload or double-park? What behaviors of drivers lead to accidents
9. Does the speed driving have law in OSZSF? You know the law punishes you?
10. What are some of the unsafe behaviors that you engage in as a driver while on the road?
11. What are the main risk factors for traffic accident in your perspective?
12. Do you feel unsafe that as a pedestrian you could be involved and injured in traffic crash?
13. In your view what factors do you think facilitate the occurrence of RTAs in study area?
 1. In terms of Vehicles -----
 2. In terms of (environment) road net work-----
 3. In terms of Peoples behavior-----
 4. In terms of rules and regulations-----

C. Questions in relation to accident implication

14. Do you think the consequence of RTAs is a serious problem in the study area?
15. What type of RTAs consequence you have seen in your community and what type of impact it has been on the victim?
16. Do you expect road traffic accident has impact on the country socio- economy?
 1. In terms of death?
 2. In terms of physical injury?
 3. In terms of material damage?
 4. In terms of social, psychological and economic implication on the family of the victims?

D) Questions in relation to traffic law and regulation

17. Do you know the existing policies in transport law enforcement?
18. Do you know the regulation of road safety not implemented by the regulator organs by any reason? Why?
19. Do you expect there is a traffic law or regulation problem which needs amendment? Or new law or regulation for road traffic management? Why?

E. Closing remarks

Is there any information I have not asked for that you wish to share?

Do you want to add something or make a correction?

Many thanks

Annex -2

Jimma University

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MA in sociology and social policy

Interview guides

Pedestrian interview guide (semi structured interview)

Information for interviewee

Dear interviewee, this study is about the risk factors and implication of RTAs in OSZSF.

The human contribution to RTA in Ethiopia cannot be overemphasized. Traffic safety therefore appears to be one of the topmost priorities of Ethiopians. Through the present study, this researcher hopes to gather relevant data that will provide useful information to complement those of the institutions involved in traffic safety campaign in the country.

If by any chance a question should make you feel uncomfortable, do not answer it. You can also withdraw from the study at any time you change your mind about participating. In this study, we only need to know your position and your age range but not your name. Any information you provide will be held in severest confidence and be used for academic purposes only.

The questions that follow are about your mobility and Experience as pedestrians

Thank you!

A) Personal statistics

Date----- Age----- Sex----- Occupation

B. Questions in relation risk factors

1. Do you sometimes walk in the street or cross it on foot, tell me about it?
2. Are there any challenges you have face while crossing or walking along the roadway?
How would you describe them?
3. Do you think pedestrian road use attitudes and behavior pose danger to traffic safety in this area? In what ways?
4. Does the road network and condition in this area influence how you or others cross/walk in the roadway?
5. Do you think the way you or others cross or walk in the roadway affect driving?

6. Could you describe that peoples who walks in the street may exposed to RTAs?
7. Could you tell me why you think pedestrians in this area behave that way?
8. Do you know if a pedestrian has been punished before for traffic offences?
9. What do you perceive to be the risk factors on the roads while walking?
10. Do you feel unsafe that as a pedestrian you could be involved and injured in traffic crash?
11. What factors do you think facilitate the occurrence of RTAs in the study area?
 1. In terms of Vehicles -----
 2. In terms of (environment) road net work-----
 3. In terms of Peoples behavior-----
 4. In terms of legislation and regulations-----

C. Questions in relation to accident implication

12. Do you think the consequence of road traffic accident is a serious problem in in the study area?
13. What type of RTA consequence you have seen on your community and what type of impact it had on the victim?
14. Do you think traffic accident implication has impact on the country socio economy?
 1. In terms of death?
 2. In terms of physical injury?
 3. In terms of material damage?
 4. In terms of social, psychological and economic implication on the family of the victims?

D) Questions in relation to traffic law and regulation

15. Do you know the existing policies in transport law enforcement?
16. How would you describe the traffic laws and regulations of the town?
17. Do you know the regulation of road safety not implemented by the regulator organs by any reason? Why?
18. Do you expect there is a traffic law or regulation problem which needs amendment? Or ne law or regulation for road traffic management? Why?

E. Closing remarks

Is there any information I have not asked for that you wish to share? Do you want to add something or make a correction?

Many thanks

Annex -3

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MA in sociology and social policy

Interview guide questions with accident victims (in-depth interview)

A) Personal statistics

Date_____ Age_____ Sex_____ Occupation _____Residence_____ Martial status_____

B) Question in relation to risk factors

1. Can you please share briefly your life history before accident?
2. What do you think was the main cause of your accident in OSZSF?
3. Was there any possibility to escape the accident?
4. Can you tell us the real situation of the following parts just before your accident?
 1. What was the condition of the car?
 2. What was the condition of a day? Rain, Wet, Dry, Wind or Fog?
 3. Speed of the car was over normal speed?
 4. Was a driver alcoholic, Drunk and chew khat?
 5. Did passengers applied seatbelt?
 6. Was the car overloaded?
 7. Was the driver stopping when pedestrians wanted to cross the road at zebra cross?
5. Just when you started your journey, did you feel a possibility of getting an accident on journey?
6. What factors do you think facilitate the occurrence of road traffic accident OSZSF?
 1. In terms of Vehicles-----
 2. In terms of (environment) road net work-----
 3. In terms of Peoples behavior-----
 4. In terms of legislation and regulations-----
7. What kind of measures should be taken to reduce traffic accidents in OSZSF?

C) Question in relation to implication

8. Could you please describe me after accident what types of psychological impact lay in your life? Was your family disturbed after the accident?

9. Could you describe was the accident has been lay impact on your body or physical injury?
Was the injury permanent or you recovered throughout time till know?
10. Could you describe how much you cost for medical treatment to treat yourself? Was the cost covered by whom?
11. How much your family's costs to support you in the management of the injury you face?
Were they having capacity to pay?
12. What is your earlier job you could discharge before accident? What about know?
13. Do you married before accident? If yes is your wife/ husband with you after accident till know?
14. Do you have children's and other supported family before accident? Who support them know?
15. Can you please describe me the coping strategy you follows after the death of yours bride winner by RTA? How you meet your family requirements?
16. Can you please describe me how you managed to develop new capabilities? What are the Challenges you faced in developing new capabilities?
17. Do you think traffic accident implication has impact on the country socio economy?

D) Questions in relation to traffic law and regulation

18. Could you describe me the law gaps in traffic accident compensation system?
19. What are the policies of road safety not implemented by the regulator organs by any reason?
20. Do you expect there are traffic law or regulation problems which need amendment? Or new law or regulation for road traffic management?

E. Closing remarks

Is there any information I have not asked for that you wish to share?

Do you want to add something or make a correction to reduce road traffic accident? (Probe)

Many thanks!

Annex -4

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Interview guide questions with traffic police (key informant interview)

A) Personal Information

Date_____ Age____ Sex_____ Rank_____

B. Question in relation to Risk factors

1. Do you think road traffic accidents are important problem in OSZSF?
2. How do you compare the road RTA in OSZSF to those of other zone in the country?
- 3 How do you see the trend of road traffic accident in your experience time?
4. How do you normally get information after the road traffic accident has occurred?
5. Are there any problems in getting immediate information after the road traffic accident?
If yes, what are the problems?
6. How do you transport injured people from the site of accident to hospital?
 - (1) By police vehicle.
 - (2) By ambulance.
 - (3) By requesting other motorists to help.
 - (4) Accident victims hire vehicles themselves.
 - (5) Others (specify)
7. How do you protect speed driving are there laws which prohibit speed driving?
8. Is there any problem of getting accurate report/information on motor accidents in OSZSF?
9. Do you face any problem in keeping road traffic accident reports in your office?
10. Are there any problems on implementing traffic safety measures in OSZSF?
11. What factors do you think facilitate the occurrence of road traffic accident in OSZSF?
 1. In terms of Vehicles -----
 2. In terms of (environment) road net work-----
 3. In terms of Peoples behavior-----
 4. In terms of legislation and regulations-----
12. What are your recommendations and opinions on strategies of reducing the road traffic accident in OSZSF?

C. Question in relation Implication

- 13. Do you think the consequence of traffic accident is a serious problem in OSZSF?
- 14. What type of consequence you know on the family member death of the bread winner?
- 15. Do you expect traffic accident implication has impact on the country socio economy?
 - 1. In terms of death?
 - 2. In terms of physical injury?
 - 3. In terms of material damage?
 - 4. In terms of psychological, economic and social implication on the family of the victims?
 - 5. In terms of social, psychological and economic implication on the society at large?

D. Question in relation Traffic law and regulation

- 16. Do you know the existing policies in transport law enforcement and management?
- 17. How would you describe the traffic laws and regulations of the town?
- 18. Do you think the available traffic rules and regulations can reduce accidents?
- 19. Do you know the regulation of road safety not implemented by the regulator organs by any reason? Why?
- 20. Do you expect there are traffic law or regulation problems which need amendment? Or new law or regulation for road traffic management? Why?

E. Closing remarks

Is there any information I have not asked for that you wish to share?

Do you want to add something or make a correction to reduce road traffic accident? (Probe)

Many thanks!

Annex -5

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MA in sociology and social policy

Interview guide questions with health experts (key informant interview)

A) Personal statistics

Date_____ Age____ Sex_____ Rank_____

B. Question in relation to Risk factor

1. Do you think road traffic accidents are important problem in OSZSF?
2. How do you compare the road traffic accidents in OSZSF to those of other zone in the country?
- 3 How do you see the trend of road traffic accident in your experience time in terms of death and injury?
4. What problems do you get in receiving motor accident victims?
5. Do you have enough treatment rooms to accommodate all injured people? If no, what solution you provide?
6. Do you think the transporting system of victims from the accident place is comfortable to medical treatment?
7. According to your experiences do you think people fear traffic accidents in OSZSF?
8. Are there any problems on implementing traffic safety measures in OSZSF?
9. What factors do you think facilitate the occurrence of road traffic accident in OSZSF?
 1. In terms of Vehicles -----
 2. In terms of (environment) road net work-----
 3. In terms of Peoples behavior-----
 4. In terms of legislation and regulations-----
10. What are your recommendations/opinions on how to improve medical service to road traffic accident victims in Oromia special zone surrounding Finfine?

C. Question in relation Implication

11. Do you think the consequence of traffic accident is a serious problem in study area?
12. What type of consequence you know on the family member death of the bread winner?
13. Do you expect road traffic accident has impact on the socio economy of the country?
 1. In terms of death?
 2. In terms of physical injury?

3. In terms of material damage?
4. In terms of economic and social implication on the family of the victims?
5. In terms of social and economic implication on the society at large?

D. Question in relation Traffic law and regulation

14. Do you know the existing policies in transport, law enforcement and health services?
15. How would you describe the traffic laws and regulations of the town?
16. Do you know the regulation of road safety not implemented by the regulator organs by any reason? Why?
17. Do you expect there are traffic law or regulation problems which need amendment? Or new law or regulation for road traffic management? Why?

E. Closing remarks

Is there any information I have not asked for that you wish to share?

Do you want to add something or make a correction to reduce road traffic accident? (Probe)

Many thanks!

Annex-6

**Jimma University
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Department of sociology
MA in sociology and social policy**

Interview guide questions with Road and Transport Authority expert (key informant interview)

A. Personal Information

Date_____ Age_____ Sex_____ Rank_____

B. Question in relation to Risk factor

1. Do you think motor traffic accidents are important problem in OSZSF?
2. How do you compare the RTA in OSZSF to those of other zone in the country?
3. How do you see the trend of traffic accident in your experience time?
4. How do you normally get information after the motor accident has occurred?
5. Are there any problems in getting immediate information after the motor accident has Occurred? What are the problems?
6. How do you transport injured people from the site of accident to hospital?
 1. By police vehicle.
 2. By ambulance.
 3. By requesting other motorists to help.
 4. Accident victims hire vehicles themselves.
 5. Others (specify)
7. How do you protect speed driving or are there laws which prohibit speed driving?
8. Do you face any problem in keeping motor traffic accident reports in your office?
9. Are there any problems on implementing traffic safety measures in the study area?
10. Do you think the available traffic rules and regulations can reduce accidents?
11. What factors do you think facilitate the occurrence of RTA in OSZSF?
 1. In terms of Vehicles -----
 2. In terms of (environment) road network-----
 3. In terms of Peoples behavior-----
 4. In terms of legislation and regulations-----
12. What measures do you take to reduce traffic accidents in the study area?

C. Question in relation Implication

13. Do you know the existing policies in transport, law enforcement and health services?

14. Do you think the consequence of traffic accident is a serious problem in Oromia special zone?
15. What type of consequence you know on the family member death of the bread winner?
16. Do you expect traffic accident implication has impact on the country socio economy?
 1. In terms of death?
 2. In terms of physical injury?
 3. In terms of material damage?
 4. In terms of psychological, economic and social implication on the family of the victims?
 5. In terms of social, psychological and economic implication on the society at large?

D) Question in relation Traffic law and regulation

17. How would you describe the traffic laws and regulations of the town?
18. Do you know the regulation of road safety not implemented by the regulator organs by any reason? Why?
19. Do you expect there are traffic law or regulation problems which need amendment? Or new law or regulation for road traffic management? Why?

E. Closing remarks

Is there any information I have not asked for that you wish to share?

Do you want to add something or make a correction to reduce road traffic accident?

(Probe) Many thanks!

Annex -7

Jimma University
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MA in sociology and social policy
Focus group discussion (FGD)

Interview guide questions for a focus group discussion

A. Question in relation to Risk factor and implication in general

1. Is road traffic accident a serious problem in Oromia special zone surrounding Finfine?
2. What are the main risk factors which are associated to the cause of RTA in OSZSF problem?
3. Who are the main victims of road traffic accidents in OSZSF?
4. What kinds of safety measures have been taken by the local authority to prevent RTA in OSZSF?
5. Do available safety measures reduce the traffic accidents in OSZSF?
6. Do available traffic rules and regulations reduce road traffic accidents in OSZSF?
7. Who is mostly responsible for the road traffic accidents in OSZSF?
8. What has been done by the Central government to reduce RTA in OSZSF?
9. Does Community in OSZSF associate RTA with their traditional beliefs or superstitions?
10. What are the main problems facing the local authorities in implementing the road safety measures in OSZSF?
11. What type of consequence you know on the family member death of the bread winner?

B) Questions in relation to traffic law and regulation

12. How would you describe the traffic laws and regulations of the town?
13. Do you know the regulation of road safety not implemented by the regulator organs by any reason? Why?
14. Do you expect there are traffic law or regulation problems which need amendment? Or new law or regulation for road traffic management? Why?

E. Closing remarks

Is there any information I have not asked for that you wish to share?

Do you want to add something or make a correction to reduce road traffic accident? (Probe)

Many thanks.

Annex-8

Jimma University

College of social science and humanities

Department of sociology and social work

MA in sociology and social policy

Observation Checklist

1. The researcher will observe that how most cars and pedestrians will move, the speed limit the vehicle will follow, the sign showing by vehicle, how the pedestrians crossing the road and how they use zebra crossing by discussing with the traffic police standing on his duty on the Congested area.
2. Peak hour observation (morning before working time 7:30- 8:30 am, night travel after 1:30-2:00 pm) the congestion and the overall traffic system including zebra.
3. Observation on the road side.

N/B All attached annex had translated to Oromiffa and Amharic were not attached to the main thesis report because of the bulk size of the tools used.