

A STUDY ON ROAD SAFETY IN BANGLADASH

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the degree of Bachelor of Science in Civil Engineering,



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DECLARATION

It is hereby declared that this thesis/project or any part of it has not been submitted elsewhere for the award of any degree or diploma.

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ABSTRACT

Being a riverine country, the road transportation system is vitally important to the economic and social welfare of Bangladesh. Therefore, it must be so maintained and continually improved with due consideration for safety, minimizing accident hazards and risks. However, terrible losses of lives and injuries with consequent property damages resulting from road traffic accidents have now emerged as serious issues in Bangladesh affecting the community personally, socially and economically.

The road safety situation is very severe by international standard. An overview of the prevailing accident problem characteristics and some road safety priorities that should be addressed with due urgency are briefly discussed in the paper.

The present study attempts to analyze the transport safety perspectives in Bangladesh, Here we highlight accidents where 85% of accidents are due to drivers, 9% to pedestrians, 6% to passengers, and other causes. While searching for the causes of these accidents, we found that the drivers were unaware, stupid, incompetent, and disregarded by the law. There are many more reasons. We have analyzed the accident here in different ways and based on the finding and analysis. A number of recommendations have been made for improving road safety in Bangladesh and for further research and investigation.

TABLE OF CONTENTS

	Page No
ABSTRACT	VI
LIST OF FIGURES	IX
LIST OF TABLES	X
1. INTRODUCTION	
1.1 General	1
1.2 Background	1
1.3 Objectives of the Study	2
1.4 Outline of Methodology	2
1.5 Organization of the Thesis	2
2. LITERATURE REVIEW	
2.1 Introduction	3
2.2 What is Traffic Study	3
2.3 Accident Study	3
2.4 Road Traffic Accidents	4
2.4.1 The road traffic system	4
2.4.2 Accident types	4
2.4.3 Accident factors	4-9
3. Methodology	
3.1 Introduction	10
3.2 Data Collection	10
3.3 Accident Characteristics	11
3.3.1 Pedestrians-The Most Vulnerable Road User Group	11

3.3.2 Predominant Accident Types	11
3.3.3 Accidents on National Highways	11
4: Result and Discussion	
4.1 Reasons of road accident	12
4.1.1 Inadequate vehicles	12
4.1.2 Analysis of Accident Data from 2008 to 2014	12
4.1.3 Distribution of accidents according to severity	13
4.1.4 Annual distribution of casualties	14
4.1.6 Annual distribution of driver, passenger and pedestrian casualties	15
4.1.7: Annual distribution of accidents 2015 to 2021	16
4.2.2 Age composition of drivers	18
4.2.3 Educational qualification of drivers	19
4.2.5 Type of license held by surveyed drivers	19
4.2.7 Unaware passenger	19
4.2.8 Cell phone use at the time of driving	20
4.3 Road Traffic Accident Distribution	21
4.3.2 Improving road safety issue in Bangladesh 2008 to 2014	22
4.3.3 Improving road safety issue in Bangladesh 2005 to 2021	22
4.4 Contributing Factors of Traffic Safety Problems	23
5. Conclusion and Recommendations	
5.1. Conclusions	24
5.2 Limitations	24
5.3. Recommendation for Future Work	25
REFERENCES	26-27

LIST OF FIGURUS

Figure 4.1.2 Analysis of Accident Data from 2008 to 2014.....	13
Figure 4.1.3: Distribution of accidents according to severity (%).....	14
Figure 4.1.5 Annual distribution of casualties.....	15
Figure 4.1.6 Distribution of driver, passenger and pedestrian casualties (%).....	15
Figure 4.1.7, Annual data distribution of accident for 2015 to 2021.....	17
Figure 4.2.2, Age composition of drivers.....	18
Figure 4.2.3, Educational qualification of drivers.....	18
Figure 4.2.7, Type of license held by surveyed drivers.....	20
Figure 4.2.9, Use of mobiles while driving.....	21
Figure 4.3.1 Improving road safety issue in Bangladesh from 2008 to 2014.....	22
Figure 4.3.2, Improving road safety issue in Bangladesh.....	22

LIST OF TABLES

Table 4.1.2 Analysis of Accident Data from 2008 to 2014.....	12
Table 4.1.3 Distribution of accidents according to severity	13
Table 4.1.4 Annual distribution of casualties.....	14
Table 4.1.6 Annual distribution of driver, passenger and pedestrian casualties...	15
Table 4.1.7 Annual distribution of accidents.....	16
Table 4.2.2 Age composition of drivers.....	17
Table 4.2.3 Educational qualification of drivers.....	18
Table 4.2.5 Type of license held by surveyed drivers.....	19
Table 4.2.9 Use of mobiles while driving.....	20

Chapter 1

1. INTRODUCTION

1.1 General

Safe, sound and sustainable mobility is one of the fundamental necessities of human being. Unfortunately, mobility or transport is become a ‘global tragedy’ with ever-rising trend and represent a major cause of premature deaths and disabilities worldwide. Road trauma has now been recognized as one of the significant diseases of industrial societies and is an increasing public health and economic issue in developing countries like Bangladesh. According to police statistics, there are about 4,000 deaths and many more serious injuries each year on roads in Bangladesh. Fatalities per 10,000 motors vehicle is one of the highest in the world. Pedestrians, bicyclists, motorcyclists and those using informal transport including the bus and truck passengers are the most vulnerable road user group contributing almost 80 percent of road fatalities. There is a huge scope to reduce and control this man-made epidemic by implementing strategic programs that will effectively address such a major growing issue of road traffic accidents and injuries. Although some initiatives have been taken by the government and various non-government agencies, are very infant level and many of those are not fully effective for the causes of enormous constraints at different levels particularly for the lack of target oriented research based program. Indeed, an effective and integrated research program is fundamentally important and is seen as the basis of development and subsequent evaluation of a comprehensive road safety strategy. These paper deals with the needs of road safety research, constraints and fundamental requirements in Bangladesh.

1.2 Background

Transport plays a significant role in the socio-economic development of a country. The transport system of Bangladesh consists of roads, civil aviation, catering to both domestic and international traffic [1]. At present, there are about 21543 km of paved roads; Road Transport is the most dynamic area of transport development. Based on a 2007 World Bank report titled Options and Strategies, the share of roads in Bangladesh transport sector has dramatically increased from 54% in 1975 to 88% in 2005 in passenger-km and from 35% in 1975 to 80% in 2005 in passenger-km, reflecting the heavy investments in the sector and making it the most utilized form of transport. The modal share of IWT registered a gradual declining trend during last decades and estimated at 8% in passenger and 16% in freight movement in 2005, while in 1975 IWT modal share of passenger traffic was 16% and freight traffic 37%. Travel is an inherently risky activity, because movement creates kinetic energy and if there is an accident or collision, the energy exchange can be damaging to both humans and property. [2]

'Accident' is a global trauma worldwide. It is the leading cause of death and fatal injuries. Bangladesh also suffers a great deal due to accidents every year on all the major modes of transportation i.e. roads,

1.3 Objectives of the Study

The specific objective of study is started below:

- 1 To review on road accident problems in Bangladesh.
- 2 Understanding Reasons of the road accident.

1.4 Outline of Methodology

The research is prepared based upon the information collected from several person and organization, annual reports, the researchers own judgment also from the internet some interview are taken .The findings are structured upon information provide by these and some secondary sources. As the Research Paper is that will be making by the Qualitative Research method. It is consist or made by analysis of some abstract idea, doctrine or theory. In this study, it had been mostly relied on the following secondary methodologies in doing my research monograph; these are; Secondary documents like books, journal and articles (mentioned in Bibliography).Shared the observations, comments and recommendations of various authors

1.5 Organization of the Thesis.

Chapter 1 gives the specific objectives and background of the thesis work.

Chapter 2 the reviews the literature related to the theme of this study. This review will help to understand the importance and necessity of transportation safety. A vast literature has been reviewed accidents in Bangladesh.

Chapter 3 presents the overall road accidents of Bangladesh from 2008 to 2020. Causes of accident and drivers characteristics of drivers.

Chapter 4 here we discuss the result of this thesis gives clears an idea about accident in Bangladesh and contributing factors of traffic safety problems.

Chapter 5 This chapter presents the overall conclusion and recommendations for future works.

Chapter 2

Literature Review

2.1 Introduction.

The literatures reviewed in connection with this study are summarized in this chapter. The general understanding of accident phenomenon; accident characteristics as well as previous studies on accidents in Bangladesh are discussed here. In most cases, accident studies had been performed based on a simple mode. This chapter reviews the literatures concerning road accidents separately.

There is limited literature review about road safety in all over the world. Many of them suggested so many suggestions to make a great road to make a great journey and save life of peoples. Some literature are given below

1. Md. Shamsul Hoque(2011) [3],Dr. Md. Mazharul Hoque(2015)similar study related to Bangladesh in particular Dhaka being the one of the most populated city is neither conducted not effort was taken. That is why; the necessity of development of a road safety model in the context of Bangladesh is then initiated in order to incorporate local project related variables. This kind of research has been done very limited in our country no similar research matches were found
2. There is another report done by 6 authors named which done 30 Nov, 2017. The make a report on the safety of road and also anther various topic. From their research the find out the main objective is “regarding road safety there is a potential for increased road safety but drivers tend to pick up non-related driving tasks instead. These problems are due to several traditional HMI concerns. In the future autonomous cars must make decisions that touch on ethical issues that have not yet been sufficiently and transparently discussed. Although in many countries legislation is now reacting to the new technology, many aspects – like liability and privacy / data protection – are not yet regulated by law. Automated vehicles promise to have several clear benefits that might change the entire transport system. The positive externalities that come from the technological advantages of automated vehicles might be outweighed by the negative externalities coming from the potential increases in travelling by private vehicles. [4]

2.2 Traffic Study

A traffic study is prepared to determine development impacts related to streets, traffic, and circulation. Either of two studies may be required by the Development Services Department: a Traffic Impact Analysis or a Traffic Circulation Analysis. [5]

2.3 Accident Study.

Generally, the accident study is carried out for the following purposes:

- a) To evaluate the existing facilities and to give support to the proposed design.

- b) To know the basic causes of accidents and suggest remedial measures at potential points.
- c) To justify economically, the proposed improvements
- d) To compute financial loss due to accidents.

The primary objective of any accident study is to provide free, safe and quick movements on the way.

2.4 Road Traffic Accidents.

2.4.1 The road traffic system.

Road traffic may be considered as a system, in which various components interact with each other. This system is often described as comprising three components – the human, the vehicle and the road. An accident may be considered as a ‘failure’ in the system.

In one of the early systematic approaches to road safety analysis, the American analyst William Haddon combined these three components with the three phases in an accident (pre-crash, in-crash and after-crash) to form what has since become known as the Haddon Matrix [6]. Each of the nine elements of the matrix represents a possible focus for road safety.

2.4.3 Accident types.

The principle behind the definition of accident types is the accident event. This ‘event’ is related to collision, non-collision and on/off the carriageways.

The accident type system used in Victoria (Australia) since 1968 is known as Road User Movements (RUM). It describes accident by the movements of road user involved in an accident for determining accident problems and subsequently for identifying high accident locations i.e. intersections or mid-blocks. In 1981, Andreessen modified and introduced a new system of classifying accident types (Figure 2.1) which is known as Definition for Coding Accident Types, to provide a detailed view of the accidents which is brought by the changes in the road system and traffic control environment. [7] This DCA code is successfully used in Australia [8]. For developing countermeasures by classifying accident types with the diagrammatic representation of various vehicle-to-vehicle and vehicle-to-other road users movements.

Typical accident types might include: [9]

- Collisions between vehicles entering from adjacent streets.
- Collisions involving vehicles turning from the opposite direction.
- Rear end collisions. - Collisions between vehicles and pedestrians.
- Collisions between vehicles travelling in the same direction (e.g. sideswiping).
- Vehicles running off the road.
- Collisions with fixed objects off the road and

- Collisions with parked vehicles.

2.4.4 Accident factors.

A road accident takes place due to a combination of several contributing factors including

1. Human factors
2. Vehicular factors
3. Road and roadside factors
4. Environmental factors
5. Enforcement and educational factors

1. Human Factors.

Human factors i.e. the road users responsible for the accident may be.

- i)** Drivers
- ii)** Pedestrians
- iii)** Passengers

The contribution of the road users in road accidents are discussed below.

1) Drivers

Driver is one of the main road users to cause an accident. So, the driver fitness is a major factor for safe driving. Excessive speed and rush driving, carelessness, violation of rules and regulations, failure to see or understand traffic situation and road signs or signals, temporary effects due to fatigue, sleep or alcohol etc. are responsible for causing accidents. The factors associated with drivers to cause an accident are as follows:

Inefficient and Undisciplined Driving

Driving is a technique which involves almost all the sensory organs at a time for its successful accomplishment. Educational background and professional skill together bring efficiency in driving [3]. An inefficient driver is most likely to be undisciplined. He may not have sufficient knowledge of traffic rules and regulation and attitude for observing the causes of accident.

High Speed Temptations

Generally, a driver has a tendency to drive a vehicle with speed which may go beyond design value and create dangerous situation. There may be many reasons for over speeding such as to make more trips to maximize profit, to make up the lost time and Craze for speed.

Overtaking

This is a common phenomenon when a vehicle is on the road. Proper overtaking is not an offence and does not create accident. But dangers are involved in wrong overtaking or overtaking at places where it is prohibited.

Overloading

There is a high tendency among the driver of public transport vehicles (viz. trucks, buses etc.) to overload which may cause accident in any of the ways as mentioned below:- Overloading increases momentum of the vehicle as well as the stopping sight distance. As a result, brake failure may occur. - It makes the vehicle unstable which reduce the control of the vehicle. - Continuous overloading damages the structural condition of the road which in turn creates problem to road safety.

Physical and Mental Condition of the Driver

A driver should be both mentally and physically fit to perform his duties. Drivers having poor perception and difficulty in integrating information can easily cause accidents. Fatigue and lack of concentration may arise due to continuous driving particularly at night. Older drivers, whose visual acuity and information processing capability have deteriorated, can have difficulties with situations where rapid decision making is required (especially at intersections)

2) Pedestrians

Lack of knowledge regarding road use, traffic rules and regulations, violation of regulation and carelessness in using the roadway are the main reasons of the roadway incidence of pedestrian casualty. Inadequate pedestrian facilities also lead to accidents. Pedestrian facilities such as side-walks, cross-walks, special pedestrian barriers, pedestrian refuge islands, tunnels and overpass should be designed properly in order to ensure safe movement.

3) Passengers

The behavior of passengers in the vehicles is sometimes responsible for creating an accident. Passengers characteristics which may be responsible for accidents include causing trouble with the driver, making noise, joking and diverting the attention of the driver, projecting their body outside the vehicle, getting into or down of the moving vehicles from the wrong side or giving sudden instruction to drivers etc.

2. Vehicular Factors

The conditions and characteristics of vehicles may be responsible for causing road accidents. Improvement in vehicle design, occupant protection and vehicle maintenance have made a significant contribution to accident reduction in industrialized countries. In developing countries, however, the safety design of vehicles sometimes lags behind that of developed countries, particularly when vehicles are locally manufactured or assembled. The vehicle fleet is usually older with many vehicles imported from other countries.

According to Hogue, (2003) followings are the few common vehicular factors contributing to accident:

Vehicles Physical Factors:

- Brakes, Windshield, Mirror, Speedometer, Wiper Vehicles Conditions Factors:

- Worn out tires, mixing radial and cross-ply tires, incorrect tire pressure, Bumper Vehicles Communications Factors:

- Indicator lights, Headlights, Stoplights, Faulty taillights, Dirty lights, loose steering wheel, Faulty horn

Vehicles Modifications Factors: - Sitting arrangement, Railing on roof, Chassis, Stair attachment, Engine cover Vehicles Loading Factors:

- Overhang, Overloading

3. Road and Roadside Factors

The width, surface condition, geometric standards of the roads markedly affects traffic accidents. Slippery or skidding road surface, pot holes, ruts and other damaged condition of the road surface may cause accidents particularly at high speed of movement. Defective geometric design like inadequate sight distance, inadequate width of roads and shoulders, unspecified speed breakers, improper curve design, improper lighting and improper traffic control devices are also responsible for traffic accidents. Other than road conditions, roadside factors may lead to road accident. These factors are discussed below:

i) Luminaries support:

Adequate lighting of roadways and streets has long been acknowledged as a necessity to provide a vehicle driver which needed visibility. This is being accomplished by using the headlights and road-side luminaries. Luminary supports must not be located closer than 30 ft from the edge of the roadway [10]. But in the developing countries, concept of luminary supports is not very popular. Especially in Bangladesh, there is no provision for luminary supports to provide needed visibility to the vehicle drivers except in some urban areas

ii) Utility Pole: Installation of utility poles (e.g. electric poles, telegraph poles etc.) along the roadway annually takes a tragic toll of lives [11]. These are normally 10 to 12 inch in diameter at the base and are located in most cases within several feet of the travelled way, a most tragic roadside death trap

iii) Roadside Sign Supports:

Like utility poles, roadside sign supports are located in most cases within several feet of the traveled way which are majorly responsible for fatal accidents.

Roadside Objects:

Roadside trees, markets and bus-stops are considered as indirect causes of road accidents. These mainly cause accidents by reducing sight distance and by the

reduction in the effective width of the carriageway. Roadside markets and bus-stops also bring hazard and undisciplined movement of pedestrians on the road. Again the presence of schools and colleges beside the road increase the pedestrian flow. Therefore, at these places pedestrians are vulnerable to accident by through traffic.

4. Environmental Factors.

Environmental factors which affect the road safety are:

- Weather conditions
- The traffic stream and its characteristics e.g. mixed traffic, composition, speed etc.

Unfavorable weather conditions like mist, fog, snow and dust, smoke or heavy rainfall restrict normal visibility and render driving unsafe. Moreover, the road surface may become slippery and cause skidding of vehicle which can contribute to a large number of accidents.

5. Enforcement and Educational Factors.

The enforcement and educational factors are important tools for solving traffic problems. Violation of administrative (e.g. tax, fitness, route permit, insurance policy etc.) and safety (e.g. over-speeding, overtaking from wrong side, violating red light, overloading etc.) rules and regulation often lead to accident. Furthermore, road designer's lack of knowledge about traffic safety features and road-users lack of knowledge on traffic rules and post-accident assistance lack also increase the casualty rate of accident. Proper enforcement of traffic laws and regulations and proper education through community programs and mass media campaigns can increase general road safety awareness and thus reduce the rate of accident occurrence.

The above mentioned factors are very much related to the context of road accidents in Bangladesh. [12]

6. Possible accident remedies

a) Principles of countermeasure development

The process of countermeasure development should aim to

- determine the range of measures likely to influence the dominant accident types and road features.
 - select countermeasures which on the basis of professional judgement and experience can be expected to reduce the number or severity of accidents of the type dominant at the location
 - check that adopted countermeasures do not have undesirable consequences, either in safety terms or in traffic efficiency or environmental terms.
 - be cost-effective i.e. maximize the benefits from the HRL program.
 - be efficient i.e. produce benefits which outweigh the costs.

b) Countermeasures for road intersection

The main design principles for intersections are-

- minimize the number of conflict points and hence opportunities for accidents.
- give precedence to major movements through alignment, delineation and traffic control.
- separate conflict in space or time
- control the angle of conflict.
- define and minimize conflict areas.
- define vehicle paths.
- ensure adequate sight distances
- minimize roadside hazards.
- simplify the driving task.
- minimize road user delay etc.

c) Countermeasures for mid-block locations

For non-intersection locations, the principles for safe design and operation include:

- ensure appropriate and consistent standards of horizontal and vertical alignment
- develop roadway cross sections to suit road function and traffic volumes.
- delineate roadway and vehicle paths.
- ensure appropriate standards of access control from abutting land use, and
- ensure that the roadside environment is clear or forgiving

d) Countermeasure selection

There are a number of criteria for countermeasure selection including:

- i. Technical feasibility
- ii. Economic efficiency
- iii. Affordability
- iv. Acceptability
- v. Practicable
- vi. Political and institutional acceptability
- vii. Legal
- viii. Compatibility

e) Specific accident remedies

Specific accident remedies are described below:

(i) Engineering Techniques

Engineering techniques include the road design and traffic management features, which are assessed for their contributions to safety, are as follows:

- Road design
- Road construction and maintenance
- Speeds
- The roadside

(ii) Education

The components of educational aspects, which are assessed for road users' contributions to safety, are as follows:

- Traffic management and design of intersection, truck routes, local area traffic management and pedestrian and cycle facilities.
- Traffic engineering i.e. delineation, street lighting, signing.
- Road users' knowledge about traffic safety features.
- Campaign on traffic safety.
- Knowledge on post-accident assistance.
- Driver training and testing.

(iii) Enforcement of Traffic Laws

The aspects of enforcement that should be considered for improving road safety in developing countries are:

- Fitness of vehicles
- Design of vehicles
- Fitness of drivers
- Issue of driving licenses
- Overloaded vehicles
- Increase respect for traffic rules
- Vehicle insurance policies
- Introduction of highway patrols

Chapter 3

Methodology

3.1 Introduction.

At first we go to field to collect data and asked them how many age are them and the time of driving period are they use cell phone and have the driving license and educational qualification basis on this answer we completed our thesis.

3.2 Data Collection.

Data collection has been collect from newspaper (Prothom-alo, naya dignta) and ARI.

We are in a normal process We have collected the data, first we have collected data from the Internet from ARI's website, then we have collected data from Prothom-alo website, Here we went to the road to find out the cause of the accident by analyzing the information we got from the government accident, there we asked the drivers various questions such as: Do they have a license? How old are they? What is the educational qualification? In this way we have been able to find out some of the reasons which have been discussed in the fourth chapter.

3.3 Accident Characteristics

3.3.1 Pedestrians-The Most Vulnerable Road User Group:

In Bangladesh, with a low level of motorization (around six, registered vehicles including motorcycle), the role of walk mode is quite significant. Up to 62 percent of urban road accident deaths are pedestrians alone and in Dhaka city they represented nearly 70 percent. Pedestrians need protection in the form of facilities by ensuring their legitimacy, safety and convenience.

3.3.2 Predominant Accident Types:

Accident type analysis showed 'hit pedestrian' as the dominant accident type both in urban and rural areas, 45 percent involvement in fatal accidents. Other common accident types are: rear collision (16.5%), head on collision (13.2%) and overturning (9.3%). These four accident types account for nearly 85 percent of the fatal accidents.

3.3.3 Accidents on National Highways:

Of the total reported accidents nearly 37 percent occurred on national highways. Almost 30 total accidents on national highways are occurring only in 4 percent of total kilometers. Hazards associated with roads and roadsides were particularly predominant. Studies are underway at the accident research Centre for identification and treatments of hazardous.

Chapter 4

Results and Discussion

4.1 Reasons of the road accident

4.1.1 Inadequate vehicles Bangladesh is a over populated country around 16cr people live in this country. But vehicles do not adequate for people .The economic condition of our country is poor most of the people lead his or her life under poverty. For this reason people travel one place to another place with risk. we see many time particularly Eid or any other festival people travel with risk .They have well known matter of risk but due to inadequate money they travel with risk .our government added new vehicle but it does not adequate for people.

4.1.2 Analysis of Accident Data from 2008 to 2014.

This study covers only reported road traffic accidents to ARI. During the period from January 2008 to December 2014. Information on 16342 accidents during this period. [13]

Year	No of accidents	Percentage of accidents
2008	3798	23
2009	2811	17
2010	2439	15
2011	2017	12
2012	1939	12
2013	1755	11
2014	1583	10
Total	16342	100

Table: Analysis of Accident Data from 2008 to 2014

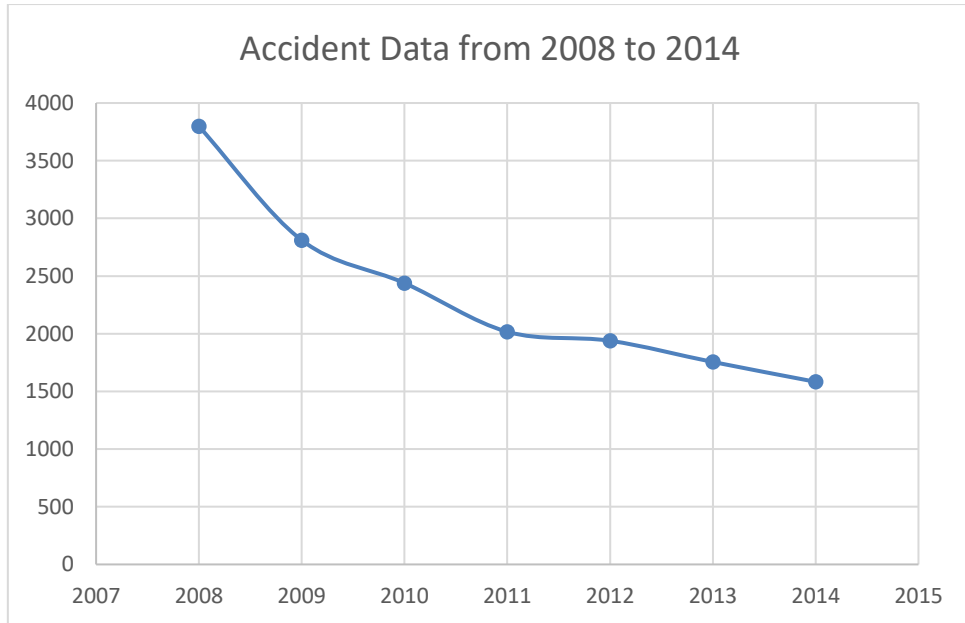


Figure 4.1.2 Analysis of Accident Data from 2008 to 2014

The annual distribution of road accidents suggests a decreasing order in the number of occurrences of accidents during the stated period. From 2008 to 2014, the road traffic accidents have decreased by 58%. The data shows that out of these 16342 accidents, maximum number of accidents occurred in 2008 (23%) and the minimum in 2014 (10%). On an average 2335 accidents took place each year.

4.1.3 Distribution of accidents according to severity

Year	Fatal	Grievous	Simple	Collision	Total
2008	2841	675	154	128	3798
2009	2157	474	71	109	2811
2010	1912	388	62	77	2439
2011	1566	313	80	58	2017
2012	1515	284	86	54	1939
2013	1421	232	74	28	1755
2014	1269	216	66	32	1583
Total	12681	2582	593	486	16342

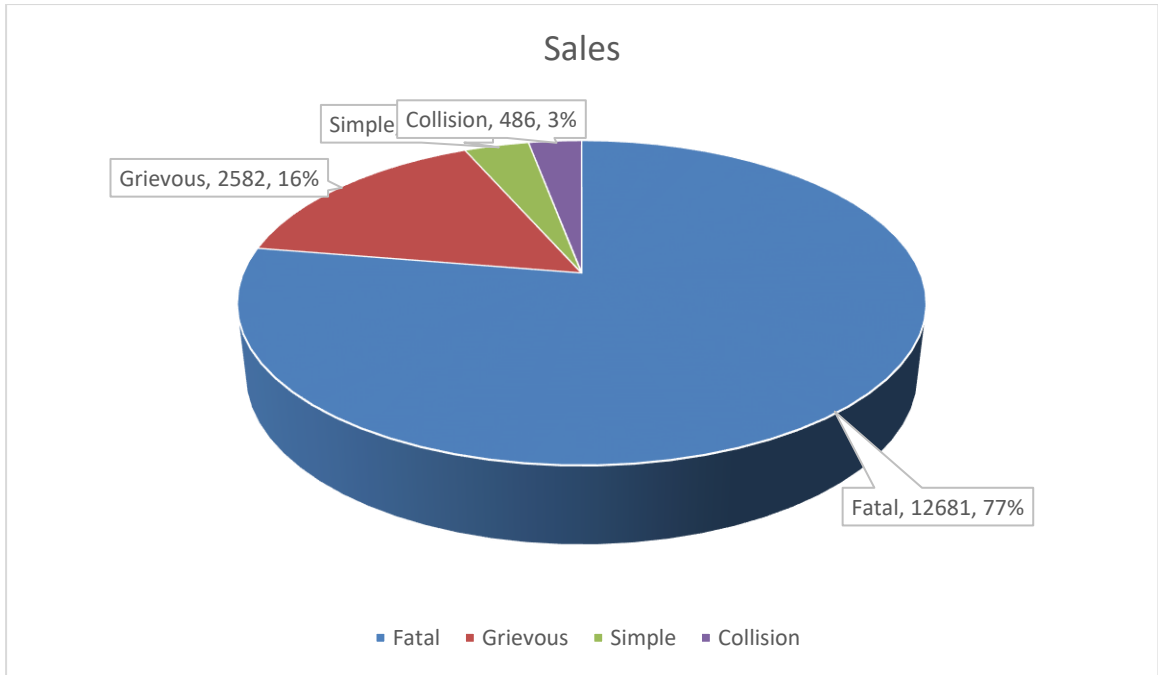


Figure 4.1.3: Distribution of accidents according to severity (%)

During the study period, 77% fatal accidents occurred. Grievous injury accidents were 16% and simple injury accidents were 4%. Remaining 3% accidents were collision type.

4.1.4 Annual distribution of casualties

Year	Fatal	Grievous	Simple	Total	%
2008	3570	1752	664	5986	23
2009	2703	1438	308	4449	17
2010	2443	1271	435	4149	16
2011	2072	1071	377	3520	13
2012	1953	850	492	3295	12
2013	1782	631	297	2710	10
2014	1632	585	214	2431	9
Total	16155	7598	2787	26540	100

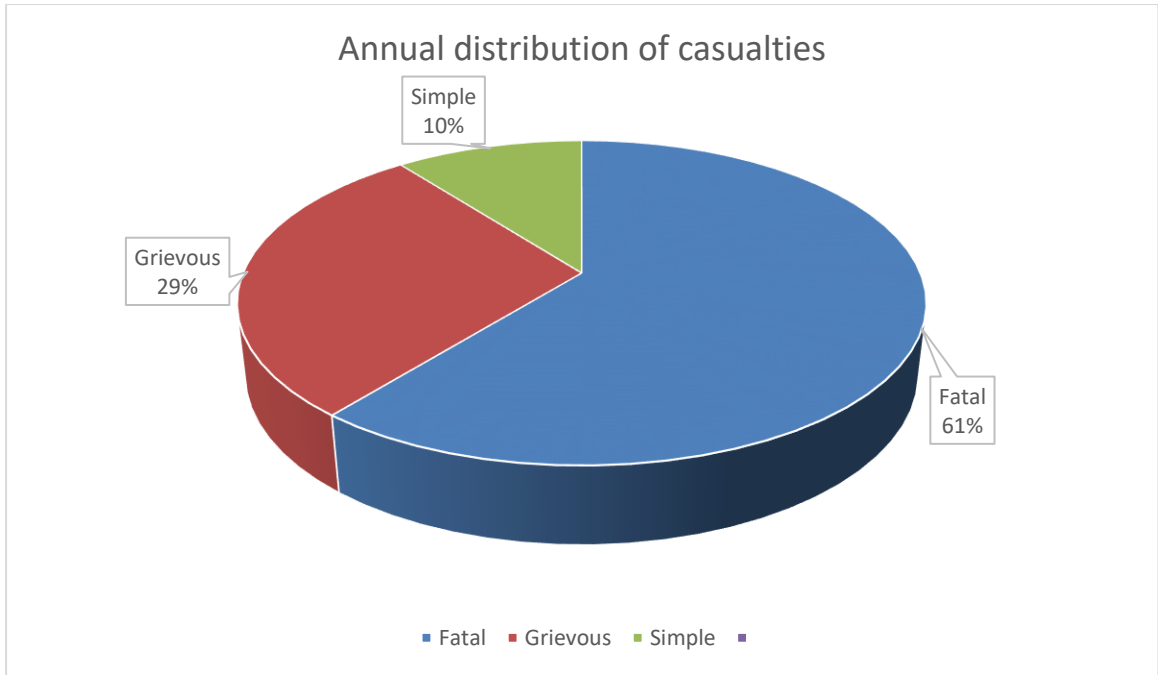


Figure 4.1.5 Annual distribution of casualties

Table shows that total 26540 casualties occurred in 16342 accidents during the study period. It is evident that average victims are more than respective accident numbers. 1.6 casualties occurred per accident on average. Per accident fatalities, grievous injuries and simple injuries were 1, 0.5 and 0.2 respectively

The annual distribution of casualties suggests that the total casualties gradually decrease from 2008 to 2014. From 2008 to 2014, the road traffic accidents casualties have decreased by 59%. It is found to be maximum in 2008 (23%) and minimum in 2014 (9%). It is observed that fatalities share a significantly higher percentage in the total casualties every year.

4.1.6 Annual distribution of driver, passenger and pedestrian casualties

Year	Drivers	Passengers	Pedestrians	Total
2008	1102	2752	2132	5986
2009	874	2073	1502	4449
2010	734	2084	1331	4149
2011	669	1724	1127	3520
2012	665	1577	1053	3295
2013	543	1151	1016	2710
2014	463	1073	895	2431
Total	5050	12434	9056	26540

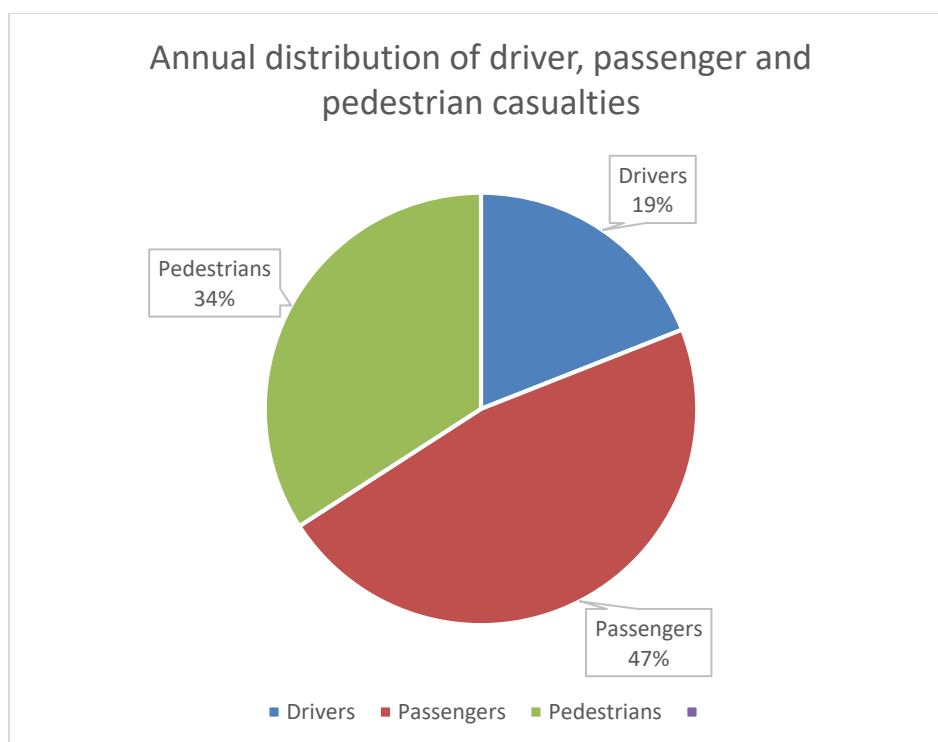


Figure 4.1.6: Distribution of driver, passenger and pedestrian casualties (%)

From the year-wise distribution of driver, passenger and pedestrian casualties, it is observed that passengers are the most vulnerable to road accidents every year. Pedestrians are the second victim in terms of casualty. During the study period, 47% passenger Drivers 19% Passengers 47% Pedestrians 34% casualties occurred whereas pedestrian and driver casualties were 34% and 19% respectively

Table 4.1.7: Annual distribution of accidents 2015 to 2021 [13] [14]

This study covers only reported road traffic accidents to the Prothom-alo during the period from January 2015 to December 2021. Information on 32701 accidents during this period. Yearly data of road accidents throughout the country have been collected to perform the analysis.

Year	Accident	Dead	injured
2015	6581	8642	21856
2016	4891	6055	15914
2017	4349	5645	7908
2018	3103	4039	7425
2019	4702	5227	6953
2020	4092	5431	7379
2021	4983	5689	5805
Total	32701	38667	73240

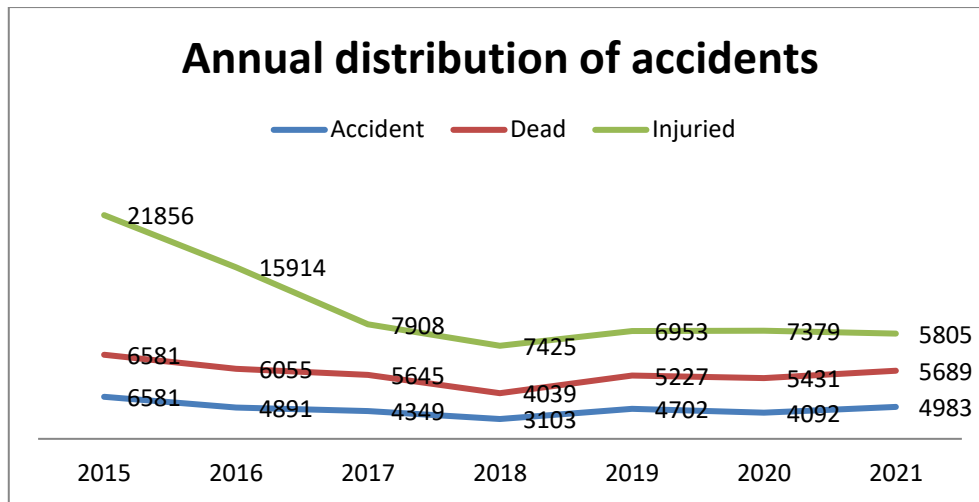


Figure 4.1.7, Annual data distribution of accident for 2015 to 2021

The annual distribution of road accidents suggests a decreasing order in the number of occurrences of accidents during the stated period. From 2015 to 2021, The data shows that out of these 32701 accidents, maximum number of accidents occurred in 2015 and the minimum in 2018. On an average 4671 accidents took place each year.

4.2.1 Age:

The larger part of the studied drivers are in the age section 24-50 with just 5% over the 50+ age run (Table). About half (47%) are inside a more youthful age section of 24-35 while 21% are inside 36-40 years and the staying 28% inside the 41-50 age section.

Table 4.2.2 Age composition of drivers

Age in years	%
24-35	47.0
36-40	20.6
41-50	27.5
51 and above	4.9
All	100

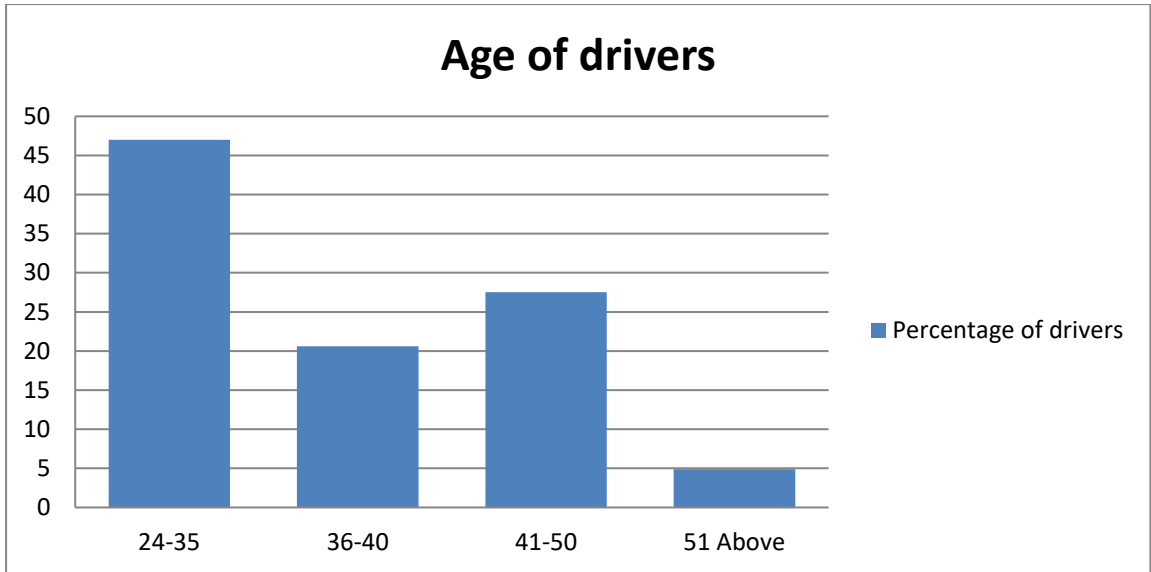


Figure 4.2.2, Age composition of drivers

Table 4.2.3 Educational qualification of drivers

Educational qualification	%
Illiterate	7.8
Can read and write	11.8
Primary	30.4
Secondary/equivalent	48.0
SSC/equivalent	1.0
HSC/equivalent	1.0
All	100

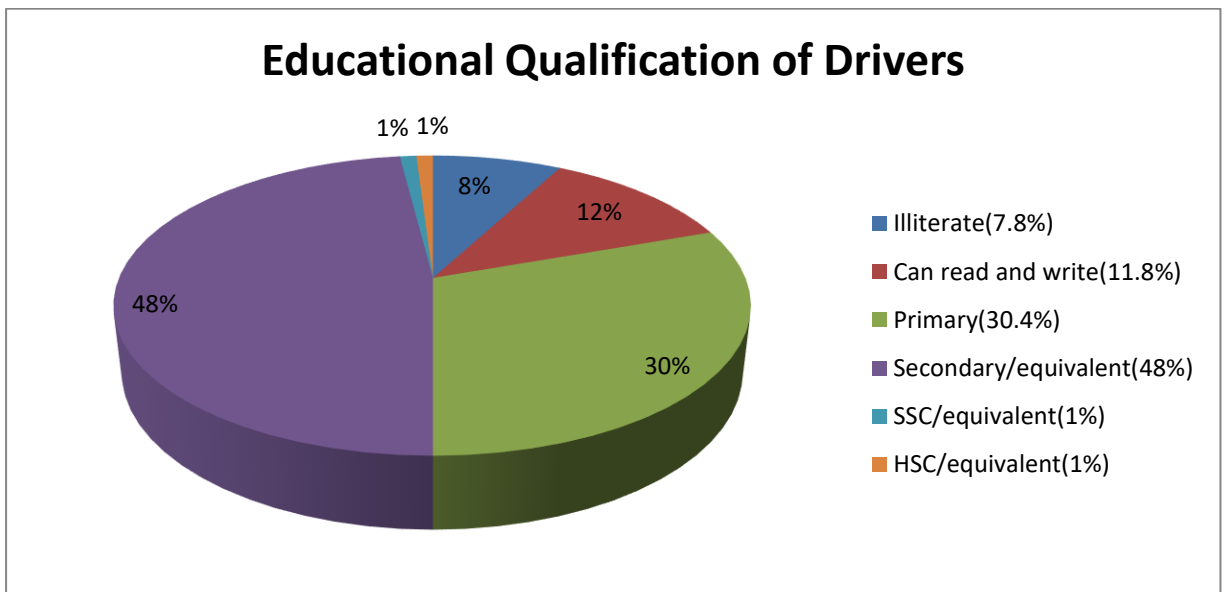


Figure 4.2.3 Educational qualification of drivers

4.2.4 Educational qualification.

As opposed to famous recognition, 80% of the measured drivers had some education. The single highest education noteworthy instruction aggregate among the drivers was optional or proportionate training (48%). Just 8% were completely uneducated.

Table 4.2.5 Type of license held by surveyed drivers

Type of license	%
For light vehicle (Private car/Jeep/Pickup)	6.9
For medium sized vehicle (Microbus/Minibus)	15.7
For heavy duty vehicles (Bus/Truck/Lorry etc.)	74.5
Does not have authorized license	2.9
All	100

4.2.6 Licensing:

The issue of driver authorizing is a significant substance of the street security plan. The driver study looked for some data relating to the issue. The data, however, is constrained just to the driver's perspective without the degree for any free check.

By the drivers' possess declaration; about all drivers have a permit. The dominant part of licenses – 75% is for driving heavy vehicles.

4.2.7 Unaware passenger:

Most of the passengers are unaware. They have no idea about drivers .Despite of sometimes passenger goes to one place to another place with risk Most of the passenger are uneducated like drivers sometimes passengers force to the driver for driving over speeding. Du to passenger driver gather brave and driving over speeding .passenger does not use foot over bridge

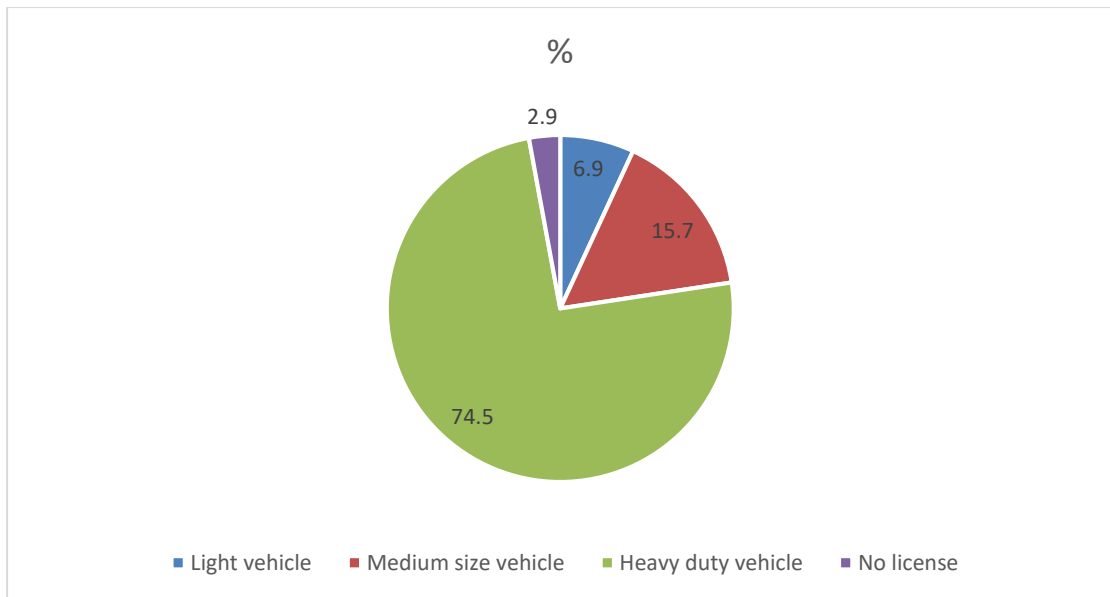


Figure 4.2.7, Type of license held by surveyed drivers

80% of the reviewed drivers revealed experiencing compulsory testing before acquiring their permit. Be that as it may, the staying 20% confessed to getting their licenses with no test. Strangely, about a large portion of the licenses were acquired from BRTA district offices. A famous recognition is that district offices suffer from lax standers. In any case, a majority – 61%. some form of harassment during the process of getting a license Paying a reward well beyond due expenses gives off an impression of being, by the drivers“ declaration, a relatively general issue (92% detailing such an issue)) while the other forms of harassment include time delay (53%) and the need to take the assistance of mediators (39%). A little rate (5%) confronted a further issue in that the mediators conned them with phony licenses.[11]

4.2.8 Cell phone use at the time of driving:

The utilization of cell phones while driving has been perceived as a safety danger. The PPRC driver study drew out the ground substances in such manner. Around two-fifths of the surveyed drivers utilize cell phone while driving and they do as such on the grounds that they feel it doesn't interfere with their driving.

Table 4.2.9 Use of mobiles while driving

Issue	Answer	%
Use mobiles while driving	Yes	42.2
	No	57.8
	All	100
Feel mobile-use interferes with driving	Yes	62.8
	No	37.2
	All	100

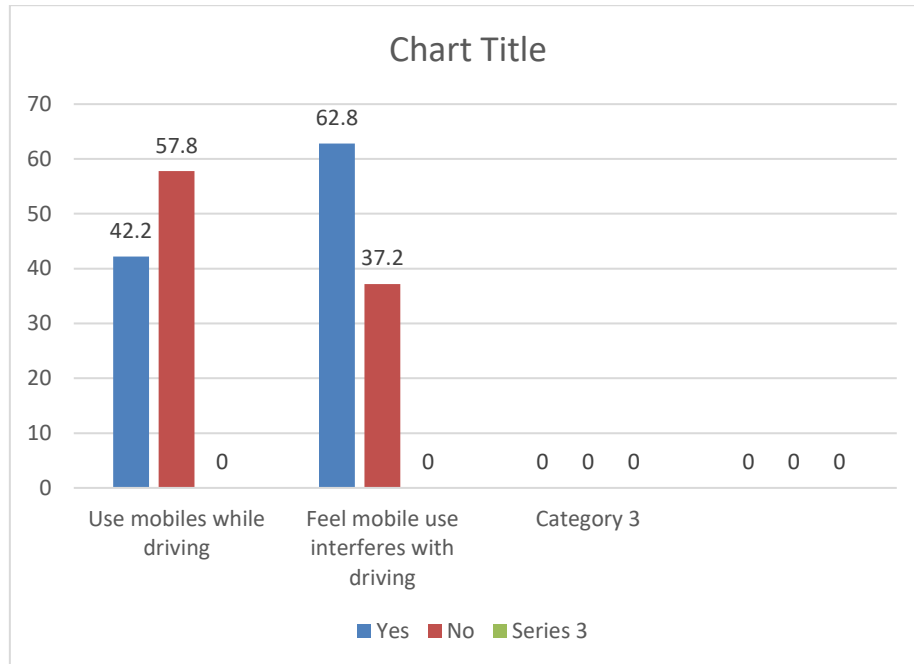
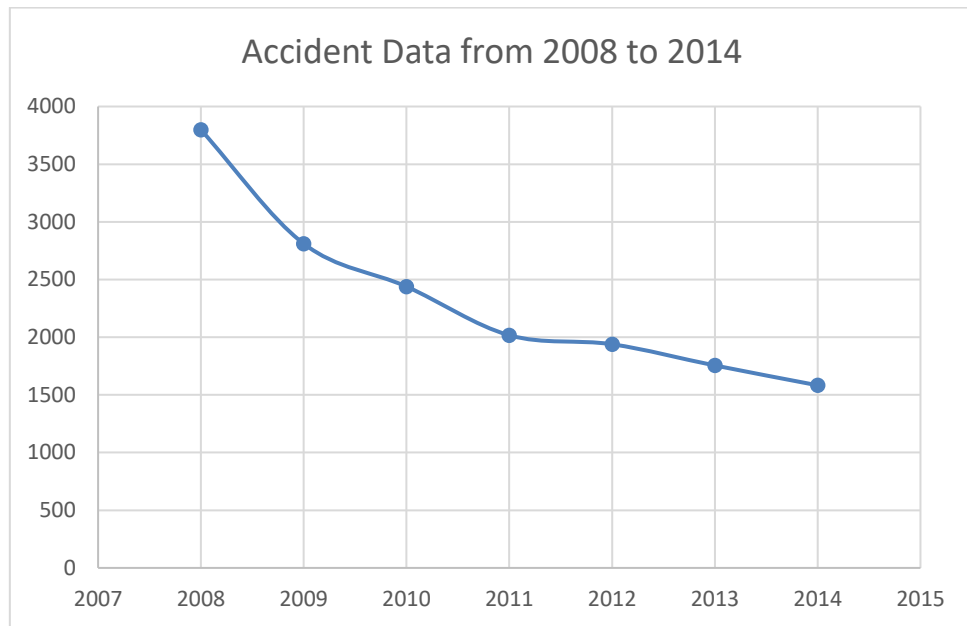


Figure 4.2.9, Use of mobiles while driving

4.3 Road Traffic Accident Distribution:

The major contributing factors for the cause of RTA at the study areas are: over speed, pedestrian's errors, not giving priority for pedestrians and not respecting other road users, insufficient skill of drivers, failure to respect right hand rule and road conditions were some of the factors that cause traffic accidents. According to the police reports more than 75% of traffic accident is caused due to driver's problems, pedestrian's error 9% and road factors and 7% respectively. Based on the above and collected data, the road user groups which require awareness on traffic rules and regulation highly are drivers, school children, elders and other road users respectively.

4.3.1 Improving road safety issue in Bangladesh from 2008 to 2014.



According to the information we have received from ARI, the number of road accidents has decreased from 2008 to 2014, but if we want to reduce the number of road accidents to zero then we need to be more aware, authorities need to take more research, drivers need to be more educated, everyone It is possible to reduce road accidents only through concerted action.

4.3.2 Improving road safety issue in Bangladesh from 2015 to 2021.

As seen in the literature reviews the number of crash frequency is obtained by dividing crashes happen by number of period in the year which is 7 years.

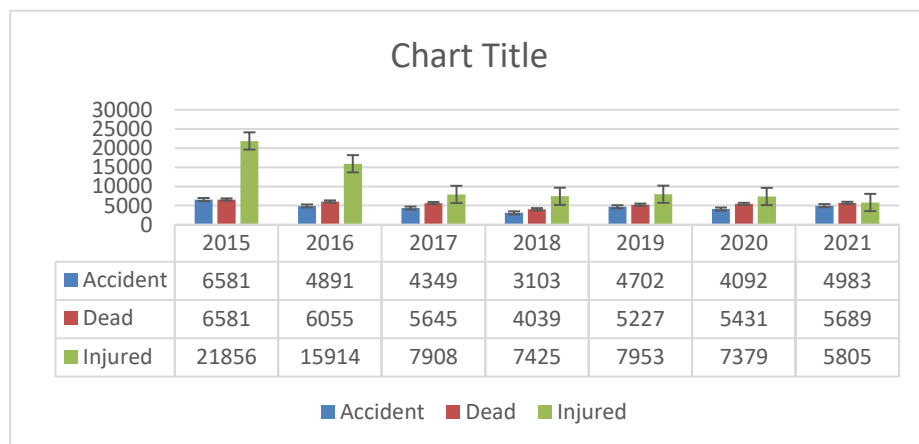


Figure 4.3.2 Improving road safety issue in Bangladesh

We see many people losing their lives in accidents every year. So it can be said that road safety problem is a big problem in our country. Even though thousands of people

are dying in road accidents in our country every year, if we look at the data from 2015 to 2021, we can see that the number of road accidents in our country is decreasing, at least considering that we are going to reduce road accidents in our country.

For a long-term solution, increasing public awareness through evidence-informed strategies, with prioritization of road safety in national policy and rigorous enforcement of road traffic legislation, can improve road safety and decrease the number of victims of road traffic accidents in Bangladesh.

4.4 Contributing Factors of Traffic Safety Problems.

To identify a major factor that causes traffic accidents, the researcher made site observation, made interview with some stake holders and road users and use prepared. According to information obtained from site observation, interview and questionnaires the researcher try to categorize into pedestrians related problems, drivers related problems, road related problems .

Chapter 5

Conclusion and Recommendations

5.1 Conclusions

In this study several attempt has been made to assess the degree of exposure and the safety situation of a primary mode of transportation in Bangladesh. The study was based on the obtained detailed road analyzing to objectively. The analysis found out the accident characteristics and observed their pattern. This chapter concludes major findings from the specifically analysis, proposes recommendations for safety improvement measures and further research in this concern. Accident fatalities and injuries were higher in road accidents than any other transport. 94% fatalities and 93.8% injuries occurred on roads. So, road was found to be the most dangerous mode of transportation in terms of accident fatalities and injuries. Road accident frequencies were higher per month than accidents on other transport. So this indicates the recurrence of road accidents in Bangladesh in a severe pattern. Road accident casualties were always higher per month and year. So, this indicates that road accident in Bangladesh is of great concern than other modes.

5.2 Limitations

There are some limitations we have faced during doing our thesis projects. Those are given below

1. People are equivalent to provide information. For this we remain unknown and also faced many problems to collect data for our researches.
2. We are faced problem during collecting data when its pick hour in roads. There are so many traffic jam, and a lot of vehicles. For that we have to wait a long to time.
3. The researches period is too short to make a detailed research on this topic.
4. Another problem is Covid-19 pandemic. In this pandemic we have provided online class instead of offline class. So we are unable to share our topic to each other with our team member.

5.3 Recommendation for Future Work

- For improving road safety situation by implementing target-oriented research based scientific and sustainable program with respect to the condition of our country, Bangladesh as discussed in the previous sections the following aspects are urgent requirements.
- Strong political commitment, efforts and need to recognize road safety problem is a man-made epidemic which is predictable and preventable and to give road safety issue a central importance in policy agenda.
- Designating central lead agency that would be the owner of the road safety of the state and will monitor and evaluate the whole activities.
- Detailed systematic accident data collection, recording, reporting and computerized database development.
- Institutional arrangements form the foundation of the road safety management system.
- Collaborative research and education with the private organization and foreign agencies.
- Drive in the prescribed speed limits on the various roads. Always we need to remember that “Speed thrills but kills”.
- Always put on helmets, seat belts and other safety equipment’s before driving a bicycle/ motor cycle/vehicle. Always we need to remember that “Safety saves”.
- Never use mobile phones or ear phones while driving. Always we need to remember “A mobile call on the road may be the last call of your life”
- Know the traffic signs, signals, lights and traffic safety rules before you hit the road. Always we need to remember that “Road safety rules are best tools to avoid accidents”

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