ANALYSIS OF BUS MANAGEMENT SYSTEM OF DHAKA CITY FROM "RAMPURA BUS STAND TO STAFF QUARTER DEMRA''

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DECLARATION

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ABSTRACT

Every developed country has a proper buss management system to run the transport system properly. However, the buss management system is not maintained properly in Bangladesh. The primary objective of this research was to Analyze the buss management system of Dhaka city – the capital of Bangladesh. In this research work, questionnaires for both passengers and drivers were developed. There were 14 questions in the passenger's questionnaire and 10 questions in the driver's questionnaire. Interviews of total 385 passengers and 167 drivers were conducted using a paper based questionnaire survey. The results revealed the problems the passengers as well as the drivers face daily while making bus travel in Dhaka city. Suggestions for improving the bus transport system are also taken from the passengers and drivers. The reasons of past accidents experienced are also noted down from the passengers and drivers from their own experiences. The passengers also rated the drivers and conductors on some categorical behaviors. The special services provided by the bus companies are also identified in the survey. Basically, the researchers tried to know the opinion of people about the bus management system and also tried to find out important suggestions from the drivers and passengers to have a more advanced and effective bus management system. The study results conclude that the bus management system should be significantly changed and also a proper training system should be arranged for the drivers to follow the traffic rules. The outcomes of this study should be very useful for the road transport agencies of Bangladesh, which are working to improve the bus management system for the sake of better traffic safety and management in Dhaka as well as across the country.

LIST OF ABBREVIATIONS AND ACRONYMS

AADT	Annual Average Daily Traffic
ANSI	American National Standard Institute
ARC	Accident Research Centre (currently ARI – Accident Research Institute)
BRTA	Bangladesh Road Transport Authority
BUET	Bangladesh University of Engineering and Technology
DCC	Dhaka City Corporation
DUTP	Dhaka Urban Transport Project
HQ	Head Quarters
LGED	Local Government Engineering Department
MOC	Ministry of Communication
MUTCD	Manual on Uniform Traffic Control Devices
RHD	Roads and Highways Department
RMMS	Road Maintenance and Management System
UAE	United Arab Emirates
US	United States
USA	United States of America
WHO	World Health Organization

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CHAPTER-1

INTRODUCTION

1.1 Background

The private sector plays an increasing role in such development but it is generally agreed that a well-articulated transport policy is needed for the development of transport sector. Depend on the pattern of development the level of transport needs in a growing economy (Economic activities, sectorial composition, and importance of international trade need spatial combination of those). Transport policy can influence the way the transport needs associated with a particular pattern met. A policy is required to answer such vital question, among others, as who will provide transport infrastructure, which will provide transport services, how transport infrastructure and services should be priced, what the appropriate roles of various transport modes in a transport system are, and how to resolve potential conflicts between transport developments and the environment.

One of the most used and most frequently available vehicles is bus for going from small distance trip to very long trip. There are two types of buses available in the market the private or public. One cannot help but notice people running after buses in Dhaka. Bargaining with auto-rickshaw drivers over the fare is a common thing.

According to the record of BRTA there are 366 routes in Dhaka city. There are 6,551 buses and 2,325 minibuses (more than 40 seats termed as bus) – a total of 8,876. In this particular research, not multiple bus routes were not analyzed as it is not practical to collect sufficient data of all the routes in the limited time allowed for this research. So, one particular route was chosen for this research work

1.2 Specific Objectives

- To collect all available data from literature review and previous studies.
- To conduct field observation and questionnaire surveys to collect information about people's perception and suggestions, as well as field-level information about the bus management system of a selected bus route of Dhaka city.
- To analyze the collected primary and secondary information, summarize the findings and recommend solutions for problems related to the bus management system in the bus route selected for this research.

1.3 Scope of the Research

In this research study, bus management system of Dhaka city is evaluated, and the researchers of this study basically wanted the people to have the proper knowledge about the bus management system and how it can be more beneficial to them. One route was chosen for this evaluation purpose. A questionnaire-based survey was conducted.

The study was not only focused on the analysis of bus management system but the researchers of this study gave a priority to the comment of people and drivers to know their demand. Finally the goal was to know their suggestion for having a better bus management system.

1.4 Contributions of the Team Member

Rayhan Ali has worked mainly on the overall research design, sample size determination, sampling technique use and data analysis mostly in "Methodology" and "Analysis" sections and formatting the table of content, table of figure, list of table. All group members contributed to the survey data collection. However, the preparation of the presentation was done by all Five members of the group.

1.5 Limitations of the Study

All studies have some limitations. The limitations of the study are those characteristics of design or methodology that impacted or influenced the interpretation of the findings from research. The possible limitations of this study are as follows:

- Reliable data is not readily available from previous studies. Most of the studies include data that dates back to couple of years ago.
- This study had to stop for a certain period because of some unexpected occurrences such as,

1) The accident at the front of Radisson blu hotel or Airport road. Two school students were dead. All students were protest for safety road. That time any driver did not give any information for the study and the study was stopped for a certain period.
2) Another accident at the Basundhara gate and 1 university student was dead for rough driving of Suprovat's driver (a bus company). Now, Suprovat stop their operation. For this accident all university student protest again for safety road and the study had to stop again for a certain period.

1.6 Benefits of the Research

At present, road accident is one of the primary causes of deaths in Bangladesh. Busses of different routes are competing with each other to go first and as a result accidents take place and more importantly people are suffering. Taking that into consideration, the current research will be helpful for the Bangladesh Road Transport Authority (BRTA) as it will provide with valuable information and evaluation of those information about bus management system and how people wanted it to be improved.

CHAPTER-2

LITERATURE REVIEW

2.1 Introduction

The common transportation mode in the Dhaka city is bus and the service provided by buses is not enough in terms of capacity, safety and comfort. The transit structure of Dhaka city is mainly road-based and NMT (Non-motorized transport) has a fair share too. According to Bangladesh Road Transport Authority (BRTA, 2017) daily about 30 million trips are made in Dhaka city. Among these, about 30% trips have been made by bus.

As population of Dhaka city is increased to almost 20 million, the demand for bus is soaring higher and higher. On the other hand, a large number of motor cars are also plying on the city roads, which result in inefficient use of roads and create more congestion.

The average annual rate of growth of the capital of Bangladesh Dhaka city's population throughout the last 3 decades has been over seven percent - doubling its population every decade. Now Dhaka is a densely populated metropolitan area of almost 20 million people.

2.2 Existing Condition

In Bangladesh, most research studies have focused on the future of transportation system in Dhaka city. Unfortunately not many studies have been done to analyze the current bus management system in Dhaka, and not all studies have been on the same area of Dhaka. It should be noted that there has not been any serious analytical research conducted that is related to the current condition of bus management system in Bangladesh.

2.3 History of Bus Routes

2.3.1 Bus Routes Growth in Dhaka

In Dhaka city in 1992, there were just 27 transport routes in which 8 was transport course and 19 was minibus course. Around then just 304 Busses and 1194 Minibuses were in task (DITS, 1994). From 1994, Route Permit Section of BRTA gave licenses to transport and minibus routes in Dhaka. The proprietors of the transports and minibuses more often than not did not report the scratching of their vehicles, for which BRTA couldn't consider the quantity of vehicles/transports which were decommissioned every once in a while. Along these lines, the enlistment records did not speak to the real number of engine vehicles which were working on the streets of Dhaka. These are additionally excluded in the course records. On the basis of available records at BRTA, a comparative statistics have been prepared showing the increase of Bus routes of Dhaka from 1992 to 2015 shown in the following Table 2.2

Table 2.2: Evolution of the of Bus Routes in Dhaka from 1992 to 2015

Years	No of routes	Bus and Minibus
1992	27	1253
1993	15	1020
1997	16	1055
2001	19	1367
2002	34	2850
2003	37+13 (Sub urban route) = 50	2930+925 (Sub urban) = 3855
2004	71+18 = 89	3645+1130 = 4775
2005	89+27 = 116	4244+1130 = 5374
2006	99+27 = 126	4574+1455 = 6029
2007	108+27 135	4924+1457 = 6381
2008	149	6597
2009	157	7318
2010	160	7053
2013	168	7362
2015	209	9160
2016	289	12526

2.3.2 Growth of Buses and minibuses in Dhaka

Year	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	Grand Total
Bus	453	632	374	779	728	949	1082	1144	914	1231	1501	1218	971	1364	2221	3419	27537
Minibus	831	1924	1051	368	118	75	77	107	112	149	136	103	83	135	103	164	10214
Total	1284	2556	1425	1147	846	1024	1159	1251	1026	1380	1637	1321	1054	1499	2324	3583	37751

CHAPTER-3

STUDY DESIGN AND METHODOLOGY

3.1 Introduction

The methodology to achieve the goals of the project is simple. After review of the research literature, the overall research design was organized. This chapter includes the technique of data collection and the description of the procedures through which the research was executed. In this chapter the overall research methodologies that were followed to achieve the objectives, times of data collection, data collection procedures, analysis and the outlines of the study are described.

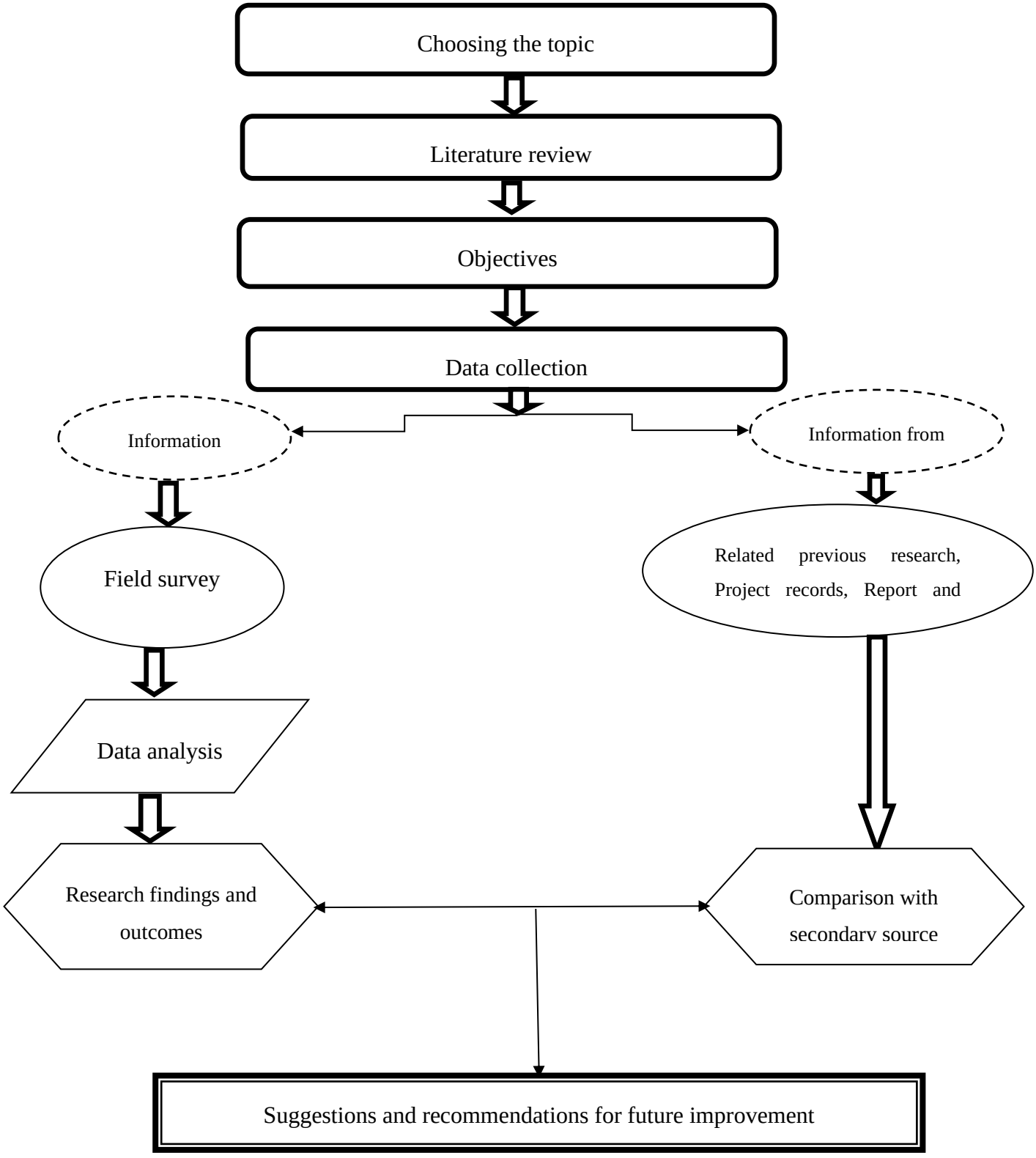
3.2 Conceptual Framework

Conceptual framework is an analytical tool with several variations and contexts. It is applied in this work since an overall picture is needed here. Conceptual framework is used since it helps to make conceptual distinctions and organize ideas and it is an easy way to remember and apply. Overall steps of conceptual framework are given as follows:

- Selection of the topic.
- Available articles, books and other sources on the topic or related to the topic were studied.
- Selection of research objectives.
- Study area and study population were identified.
- Then sampling technique was identified.
- Data collection process was divided into two categories.
- Primary source of information through data collection was field surveying process where secondary source of data collection was available information obtained from available literature.
- The findings and outcomes were obtained from primary source and later compared with the secondary source.
- Based on the findings, final conclusion and recommendations were drawn.

The entire process is shown as a flow chart in Figure 3.2

Figure 3.2: Flow Chart Diagram of a Methodology Process



3.3 Target Area and Sample Population

3.3.1 Target Area

To assess the problems of the driver's and passenger's with the current bus management system and to find out their opinion about the bus management system of Dhaka city

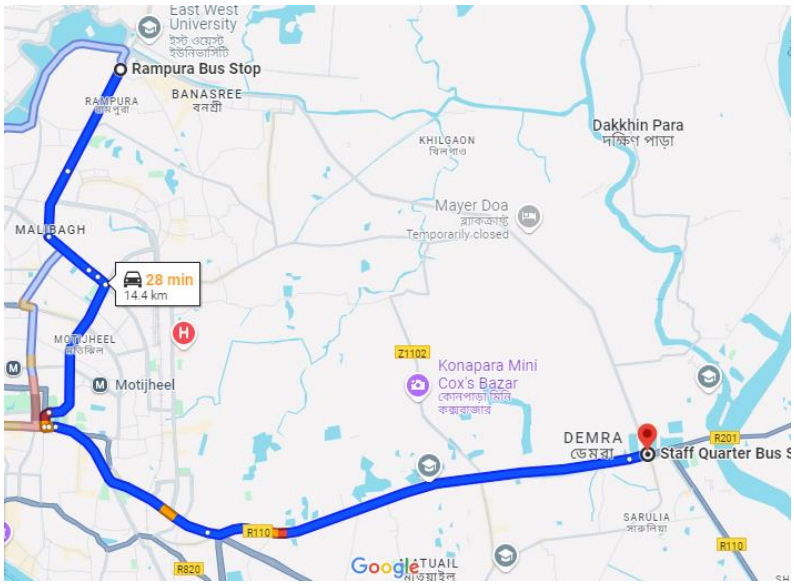


Figure 3.3.1: Route No. R-110

3.3.2 Rampura Bus Stand

Rampura is the starting point of the selected route. The drivers who drive from Rampura – Demra Staff Quarter route were considered for this study purpose. The Rampura Bus Station is shown in Figure 3.2.2



Figure 3.3.2: Rampura Bus Station

3.3.3 Demra Staff Quarter Bus Stand

Demra Staff Quarter bus stand is another point of this route in which the researchers of this study conducted the survey. Several buses start their journey from this bus stand to go along in this route. The Station picture has given in Figure 3.3.3



Figure 3.3.3: Demra Bus Station

3.4 Sample Population

For the research purpose, the drivers and the passengers of the selected route in this study were surveyed. This survey is applicable only for drivers of public bus and passengers of these buses. The drivers and the regular passengers of this route are considered as the sample population of this study.

3.5 Study Period

It was planned that this study would take about six to eight months, depending on the required unpublished data and the time required for surveying process. It was further planned that the field survey data would be collected in two work days and two weekends between 11:30 am to 5 pm.

3.6 Sample Size Calculation

Confidence Level = 95%

Population Proportion, p = 50%

Error, d = 5%

Population Size, N = 30,000

Z score for 95% confidence level = 1.96

3.6.1 Sample size for finite population

Sample size for finite population, n = $\frac{\mathrm{Nz^2pq}}{d(N-1)+z^2pq}$

Where, q = 1- p

n = $\frac{30000\ x\ 1.96^2 x\ 0.5x\ (1-0.5)}{0.05^2 x\ (30000-1)+1.96^2 x\ 0.5\ x\ (1-0.5)}$ = 380

But $\frac{n}{N}$ ratio = $\frac{380}{30000}$ = 0.01 < 0.05

When N is large in compare to n (that is $\frac{n}{N}$ < 0.05) the finite population correlation may be ignored.

3.6.2 Sample size for infinite population

Sample size, n = $\frac{\mathrm{z^2pq}}{d^2}$

= $\frac{1.96^2 x\ 0.5x\ (1-0.5)}{0.05^2}$

= 385

Therefore, the calculated sample size is 385

3.7 Inclusion and Exclusion Criteria

Since the concerns here were bus management system and drivers and passenger's characteristics, so the data will be collected from those selected road drivers who drive in that road and exclude some drivers.

3.7.1 Inclusion

This Study considers -

- Selected one route of drivers and passengers
- Only drivers of public bus.
- Drivers' personal characteristics

3.7.2 Exclusion

This Study does not consider -

- Drivers of non-selected roads in Dhaka city.
- Drivers of private bus.

- Drivers of non-motorized vehicles.
- Current operational condition of roads.

3.8 Data Collection Tools

Problems drivers and passengers faced in the current bus management system were investigated by conducted a survey among the drivers and passengers of the selected road. In this study, problems have been assessed by the percentage in terms of the condition they face every day. A multiple choice type of questionnaire was used for assessing the problems. In addition to the multiple choice type questionnaires, the survey form contained a brief introduction about the purpose of the study, and some specific queries regarding the respondents' demographic, driving and personal characteristics. The questionnaire was divided into two parts. In the drivers survey, the first part of the survey form contained 6 information regarding the respondents' demographic and driving characteristics such as driver name, marital status, age, educational background, license category, driving experience.

3.9 Data Management and Analysis Plan

In this research study, IBM SPSS worksheet was used for data management and statistical analysis. The answer was coded as 1,2,3,4 by their option number. Table 3.1 presents respondents' demographic and driving characteristics code and Table 3.2 presents the passengers' demographic code.

Respondents' Demographic and Driving Characteristics	**Categories**	**Code**
Marital Status	Married	1
	Unmarried	2
Age	0 – 25	1
	26 – 40	2
	41 – 55	3
	≥ 56	4
Educational Background	≤ 4th Standard	1
	5th - 7th Standard	2
	8th - 10th Standard	3
	S.S.C	4

	H.S.C	5
	Honors or Above	6
License Category	Professional	1
	Non-professional	2
	Motorcycle	3
	No License	4
Driving Experience	< 2 Year	1
	2 - 5 Year	2
	6 - 10 Year	3
	≥ 11 Year	4

Table 3.9.1: Respondents' Demographic and Driving Characteristics Code

Passengers' Demographic Code	**Categories**	**Code**
Marital Status	Married	1
	Unmarried	2
Age	0 – 25	1
	26 – 40	2
	41 – 55	3
	≥ 56	4
Passengers' Demographic Code	Categories	Code
Gender	Male	1
	Female	2
	Other	3

Table 3.9.2: Passengers' Demographic Code

3.10 Timeline of the Survey

- 01-07-2019: Sample size was determined.
- 02-07-2019: Study area was selected.
- 03-07-2019: Sampling technique was finalized.
- 04-07-2019: Questionnaire for surveying purpose was prepared.
- 05-07-2019: Surveying process started.
- 01-08-2019: Surveying process ended.

CHAPTER-4

RESULT ANALYSIS

4.1 Introduction

This chapter shows the data collected by the researchers. In the following sections, drivers' characteristics and their perception about bus management system and passenger's characteristics and their perception about bus management system has been investigated. In order to achieve the general objective of the research, which is to determine drivers' characteristics and their perception about bus management system and passenger's characteristics and their perception about bus management system, the questionnaire was prepared. The collected data was then presented in the different chart in percentage form, which would give a good idea about the drivers' drivers' characteristics and their perception about bus management system and passenger's characteristics and their perception about bus management system.

4.2 General Information of Survey Respondents

As discussed earlier, total 385 passengers and 30 drivers of the selected roads were surveyed in this study. Table 4.1 summarizes the survey sample distribution according to passengers' demographic and characteristics. And table 4.2 summarizes the survey sample distribution according to drivers' demographic and characteristics.

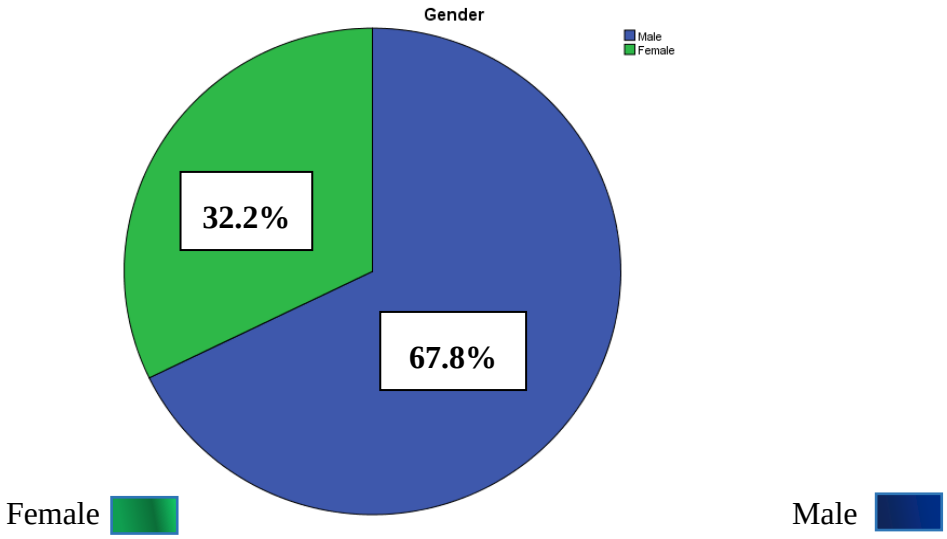


Figure 4.1: Gender

Among the 385 passengers that the researchers of this study have surveyed, the number of male passengers is more than double compared to female passengers. This is because more male passengers travel in bus compared to female passengers. Most of the people who travel regularly in bus are employees. In Bangladesh the number of male job holders

is more than female. Also, a lot of the large companies and the Government of Bangladesh provide staff buses which most of the female employees use. This may be the reason why the number of female passengers in public bus is less than the male passengers. Figure 4.1 are shown that 32.2% females and 67.8% males use the bus.

4.3 Passenger Age

A survey was conducted on 385 passengers among which 180 of the passengers (46.8%) are between the age of 26-40 years – it is the maximum among all the respondents. This is because most of the between this age are job holders and they uses the public bus service daily as it is one of the cheap and affordable modes transportation. About 25% of the passengers are between the age of 41-55 years. Around 25.5 percent which is 98 of the passengers are between the age of 0-25 years.

Age Group	Frequency	Percent	Valid Percent	Cumulative Percent
0-25	98	25.5	25.5	25.5
26-40	180	46.8	46.8	72.2
41-55	98	25.5	25.5	97.7
>56	9	2.3	2.3	100.0
Total	**385**	**100.0**	**100.0**	

Table 4.3 Passenger Age

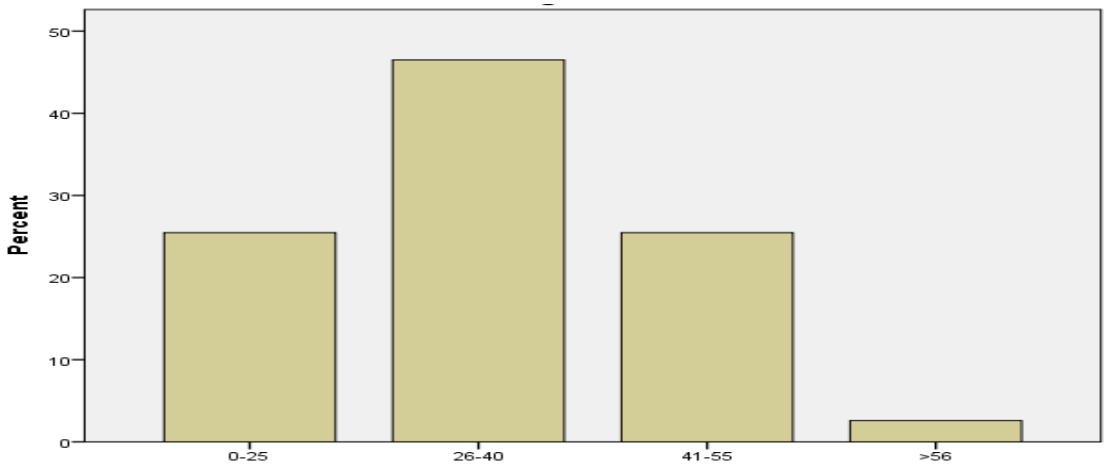


Figure 4.3: Passenger age

4.4 Travel Duration of Passengers

385 passengers were surveyed. They were asked about their travel duration in a daily work day. In table 4.3 overall travel duration percentages was shown.

Duration	Frequency	Percent	Valid Percent	Cumulative Percent
Less than 30 minutes	19	4.9	4.9	4.9
30 minutes – 45 minutes	21	5.5	5.5	10.4
45 minutes– 60 minutes	35	9.1	9.1	19.5
60 minutes– 75 minutes	44	11.4	11.4	30.9
75 minutes – 90 minutes	56	14.5	14.5	45.5
90 minutes– 105 minutes	48	12.5	12.5	57.9
105 minutes– 120 minutes	42	10.9	10.9	68.8
More than 120 minutes	120	31.2	31.2	100.0
Total	**385**	**100.0**	**100.0**	

Table 4.4: Overall Daily Travel Duration

In Figure 4.3, travel duration of both male and female are shown and in Figure 4.4 travel duration of males are shown and in the Figure 4.5 travel duration of females are shown.

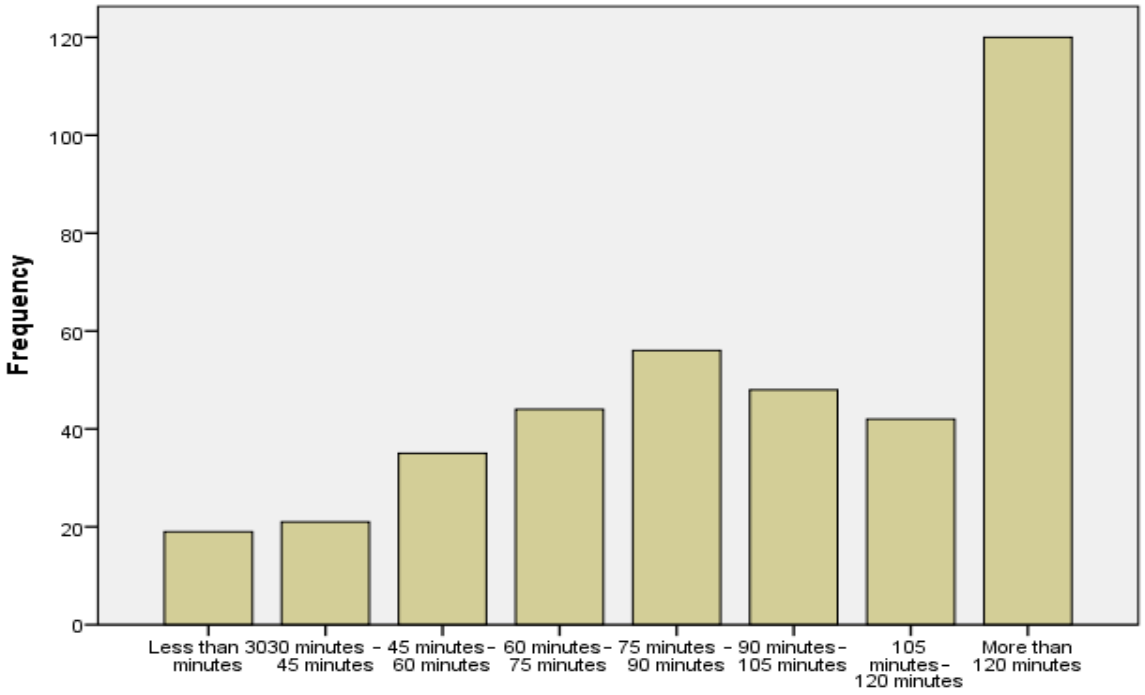


Figure 4.4: Daily Travel Duration (overall)

Travel Duration	Frequency	Percent	Valid Percent	Cumulative Percent
Less than 30 minutes	11	4.2	4.2	4.2
30 minutes – 45 minutes	14	5.4	5.4	9.6
45 minutes– 60 minutes	25	9.6	9.6	19.2
60 minutes– 75 minutes	25	9.6	9.6	28.7
75 minutes – 90 minutes	41	15.7	15.7	44.4
90 minutes– 105 minutes	26	10.0	10.0	54.4
105 minutes– 120 minutes	26	10.0	10.0	64.4
More than 120 minutes	93	35.6	35.6	100.0
Total	**261**	**100.0**	**100.0**	

Table 4.4: Daily Travel Duration (Male)

4.5 Perception of Passengers on Bus Management System

In the following sections passenger's perception on different bus management system will be discussed. The following section will also include special services provided by the bus companies. Also different problems passengers faced will be discussed.

4.5.1 Internal Sitting Arrangements

In this survey the researchers of this study asked about the internal space and sitting arrangement of the bus to the people, and the researchers of this study came up with a shocking result. Most of the people are not happy with the internal space and sitting arrangement of the local buses. Only 22.9% people said that they are happy with the sitting arrangement and internal spacing and the rest of the people that means 77.1% people said that they are not happy with it and wants a developed one. The results is shown on the below 4.6 Figure. The reason behind it, can be the limited space a local bus provides which is not enough for a person to move freely and the sits are too congested that people can't sit comfortably means the spacing of the sits are very small. They have 47 seats in a bus where the capacity should be within 43 seats.

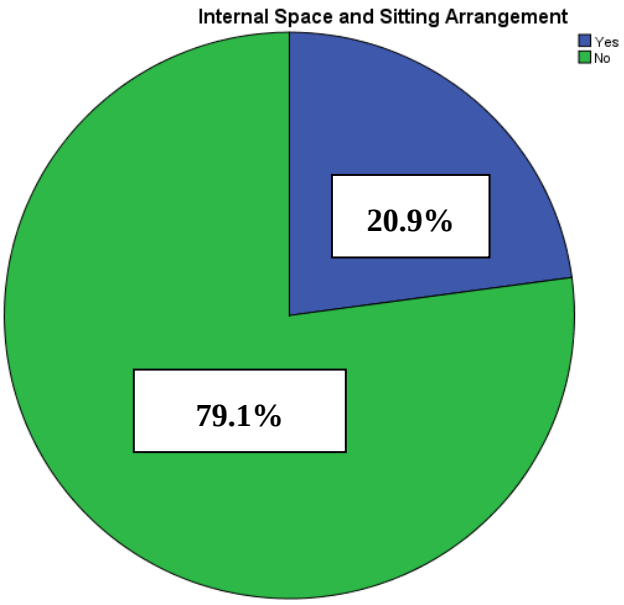


Figure 4.5.1: Comfort in Internal Space and Sitting Arrangements

4.5.2 Travel Cost

In this survey the researchers of this study asked people about the fare of the bus. But this time also most of the people think bus fare is high. As a result only 20.9% people said that they are happy with the travel cost and 79.1% people said that they are not happy with the travel cost. The result is shown on the Figure 4.6. The reason can be the specific buses called seating service.

4.5.3 Evaluation of Bus Driver's and Conductor's on Different Category

The respondents were asked to evaluate the drivers on three categories which is their carefulness about driving, their fitness and their addiction to cigarettes. And the conductors on three categories which is their behavior, their helpfulness and their dressing sense.

	Yes	**No**
Carefully driving	37.1%	62.9%
Fitness of drivers	53.5%	46.5%
Smoking cigarettes while driving	29.9%	70.1%

Table 4.5.3: Overall Condition of Drivers on Different Categories based on Satisfaction

4.5.4 Crowdedness of Public Buses

The respondents were asked in a question about the crowdedness of public buses. In overall about 71.9% respondents think that the public bus is always crowded. 28.1%

respondents are against the public buses being always crowded. The data is given in table 4.5.4

Table 4.5.4: Public Bus Crowded

	Frequency	Percent	Valid Percent	Cumulative Percent
Yes	293	76.1	76.1	76.1
No	92	23.9	23.9	100.0
Total	**385**	**100.0**	**100.0**	

4.5.5 Quality of Services

Table 4.5.5: Quality of service

	Frequency	Percent	Valid Percent	Cumulative Percent
Yes	126	32.7	32.7	32.7
No	259	67.3	67.3	100.0
Total	**385**	**100.0**	**100.0**	

In the survey the researchers have asked people about the improvements of the quality of services provided by the bus companies in recent years. Among all respondents 67.3% answered that the quality of bus services provided by the bus companies has not been improved in recent years.

4.5.6 Recommendation of Using Bus Service to Others

Table 4.5.6: Recommendation of Using Bus Services to Others

	Frequency	Percent	Valid Percent	Cumulative Percent
Yes	180	46.8	46.8	46.8
No	205	53.2	53.2	100.0
Total	**385**	**100.0**	**100.0**	

During the survey the researchers asked people if they would recommend others for using bus services and 53.2% respondent answered that they would not recommend it to others. The main reason of this is because the bus companies are not improving their quality of

services. Among all respondents 46.8% said that they would recommend others for using the bus services. The reasons they gave were that travelling in bus costs less than other modes of transportation in Dhaka city and it is safer during day and also at night when there are some chances of being robbed. Also, if more and more people use the bus services there would be fewer private cars on the road which will greatly reduce traffic jam.

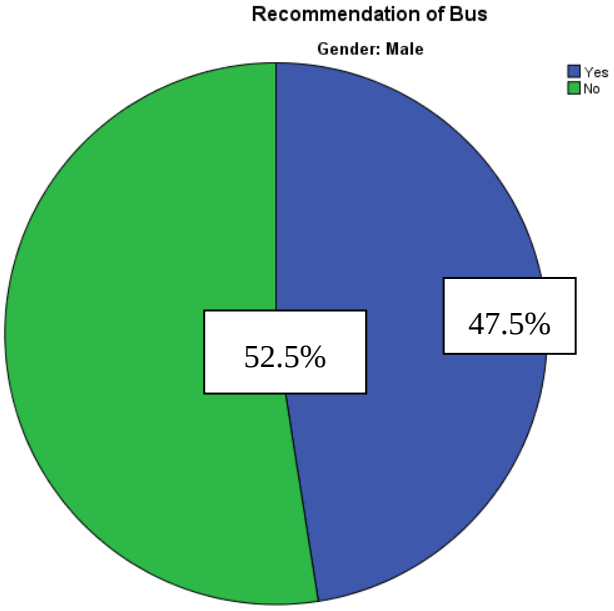


Figure 4.5.6: Recommendation of Using Bus Services to Others (Male)

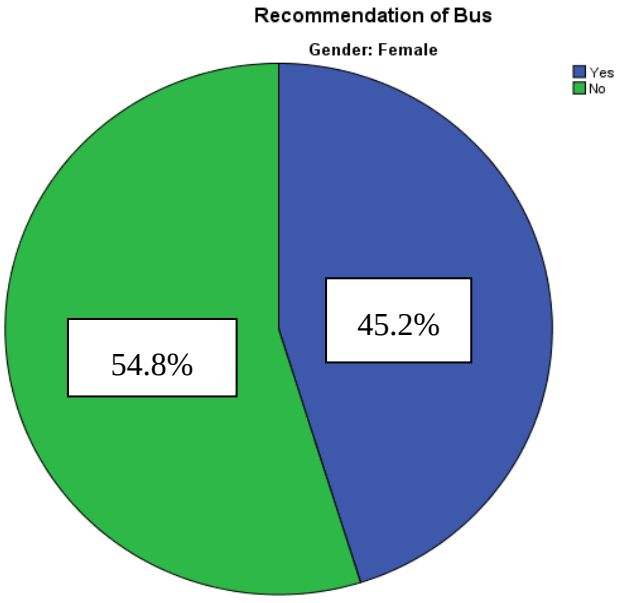


Figure 4.5.6: Recommendation of Using Bus Services to Others (Female)

From Figure 4.13 and 4.14 it is evident that 47.5% male respondents would recommend the bus services to others and 52.5% would not recommend it. Among all the female respondents 54.8% would not recommend the public bus services to others and 45.2% would recommend it. The answers of both male and female respondents are almost same

4.5.7 Services Provided in the Bus

The respondents were asked about the services that are provided in the bus. Mainly in Dhaka city there are three common services that are provided in the bus by the bus companies. The services are 50% discounts for students, 100% discounts for autistics & reserved seats for women and children. About 31.9% respondents mark the 50% discounts for students. About 19.7% respondents mark the 100% discounts for autistics. And about 48.3% mark the reserved seats for women and children. Figure 4.15 shows the result. The result of such outcomes can be the sitting services. They don't have any opportunities for the students as they have to pay the full fare. As a result, students and conductors are always fighting over the discount for students but it is not available in all buses. And though 19.7% mark for the discounts for autistics, this service is provided in almost every bus in Dhaka city. But generally the conductors don't allow the autistics in the bus. In term of reserved seats for women and children it is often seen that the seats are used by others. Though all the people know about the services still they don't follow it. As a result, women and children are still suffering.

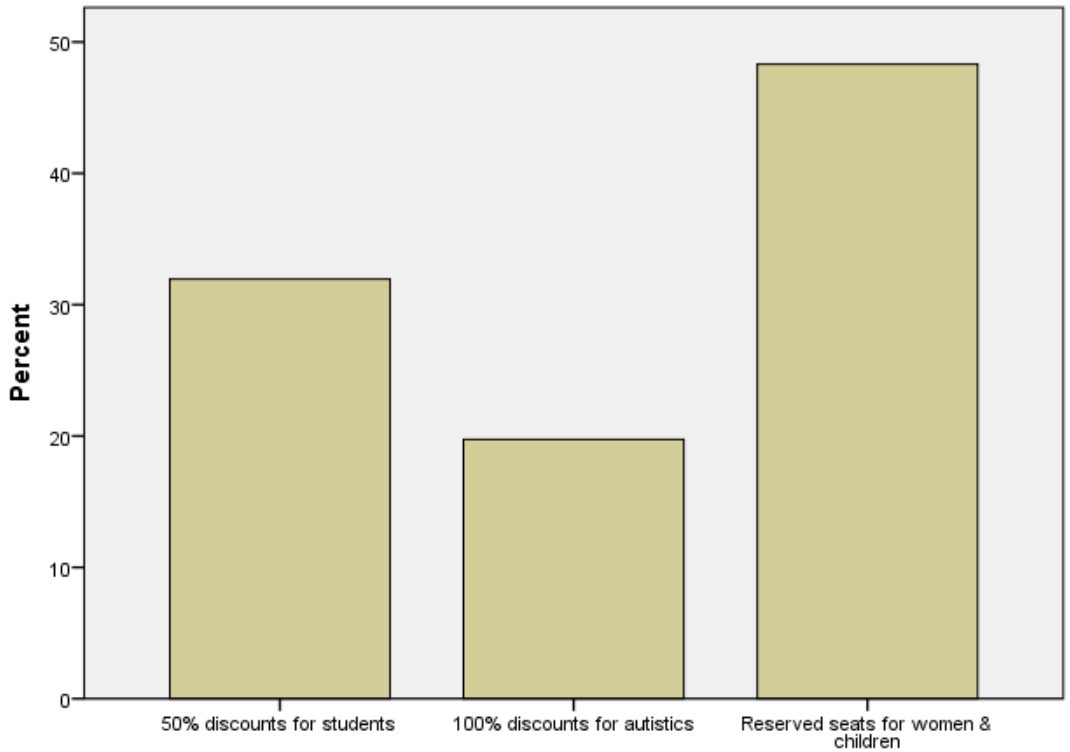


Figure 4.5.7: Services Provided in the Bus

4.5.8 Types of Accidents

In the last part of the questionnaire the respondents were asked about if they face any accidents in buses and if they had, what was the reason behind the accident. From the 385 respondents that were surveyed, total 203 respondents faced either fatal or crash accidents. About 17.4% respondents face fatal accidents in buses in Dhaka city and about 36.6% respondents face normal crash accidents in Dhaka city. And in those 17.4% fatal accidents there were about 3.9% people died and 12.2% people suffer injury.

Table 4.5.8: Fatal Accident

	Frequency	Percent	Valid Percent	Cumulative Percent
Yes	62	17.4	17.4	17.4
No	323	82.6	82.6	100.0
Total	**385**	**100.0**	**100.0**	

Table 4.5.8: Types of Fatal Accident

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	**Died**	**15**	**3.9**	**24.2**	**24.2**
	Injured	**47**	**12.2**	**75.8**	**100.0**
	Total	**62**	**16.1**	**100.0**	

Table 4.5.8: Crash Accident

	Frequency	Percent	Valid Percent	Cumulative Percent
Yes	141	36.6	36.6	36.6
No	244	63.4	63.4	100.0
Total	**385**	**100.0**	**100.0**	

Table 4.5.8: Types of Crash Accident

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	**Injury**	48	12.5	47.1	47.1
	Non-Injury	54	14.0	52.9	100.0
	Total	**102**	**26.5**	**100.0**	

From the 385 respondents that were surveyed, total 203 respondents faced either fatal or crash accidents. About 17.4% respondents face fatal accidents in buses in Dhaka city and about 82.6% said that they don't face any fatal accidents. But in this small percentage of fatal accidents the passengers have seen to die 15 people and 47 people were injured as per as their comments. The matter is not only about the numbers but also about the life. So even a single accident should not be ignored.

4.5.9 Reason of Accidents According to Passengers

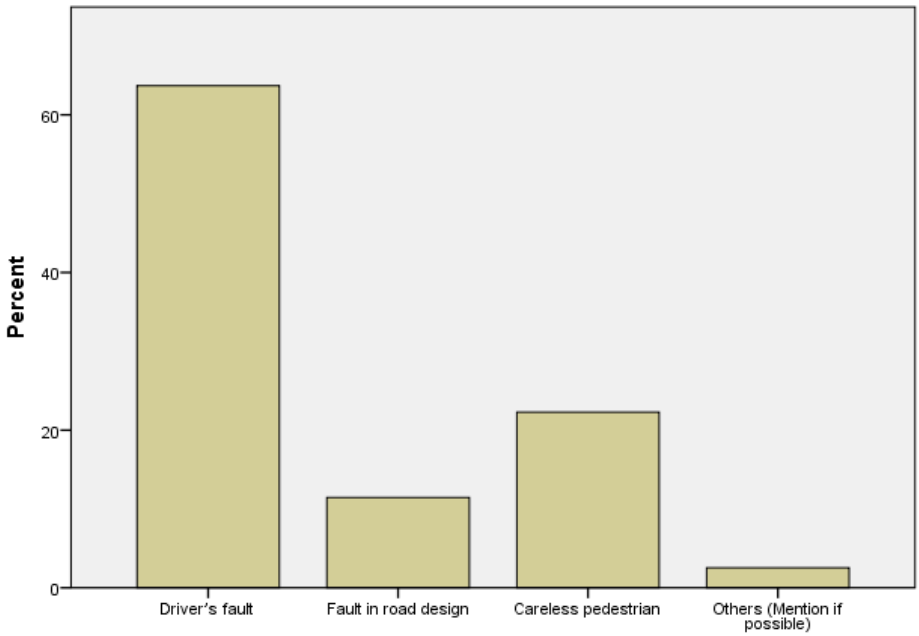


Figure 4.5.9: Probable Accident Reason

In Figure 4.16 shown 64% reason of accidents according to passengers is driver fault. They said they drive buses very reckless. Nearly 10% told that faulty road is also responsible of accidents. 22% people said that careless pedestrian is also responsible for the accident they came the road suddenly for crossing they don't use zebra crossing and use their phone when crossing the road.

4.6 Perception of Bus Drivers on Bus Management System

In the following sections driver's perception on different bus management issues will be discussed. The following section will also include the mismanagement of bus companies according to bus drivers. Also different problems drivers faced will be discussed. The survey on drivers was interview type as some of them cannot even read Bangla.

4.7.1 Average Duration of Driving Per Day

There were about 30 drivers that were surveyed. They were asked about the average duration of driving per day. From the data that were gathered it can be seen that in minimum they driver for 7 hours per day and in maximum they drive up to 19 hours. The average duration of driving per day is 15 hours. Usually when they drive to maximum they take a break the next day.

Table 4.7.1: Statistical Data for Average Duration of Driving Per Day

Valid	**30**
Mean	**15.02**
Median	**15.00**
Mode	**12**
Minimum	**7**
Maximum	**19**

4.7.2 Drivers' Age

Among the 30 drivers that the researchers have surveyed or interviewed 23.3% which is 7 of the drivers are between the age of 0-25 years, while 23.3% of the drivers are between the ages of 41-55 years. Around 46% which is 14 of the drivers are between the age of 26-40 years which is the maximum among all the respondents. In the survey only two drivers are found whose age is over 56 years.

Table 4.7.2: Drivers' age

	Frequency	Percent	Cumulative Percent
0-25	7	23.3	23.3
26-40	14	46.7	70.0
41-55	7	23.3	93.3
>56	2	6.7	100.0
Total	**30**	**100.0**	

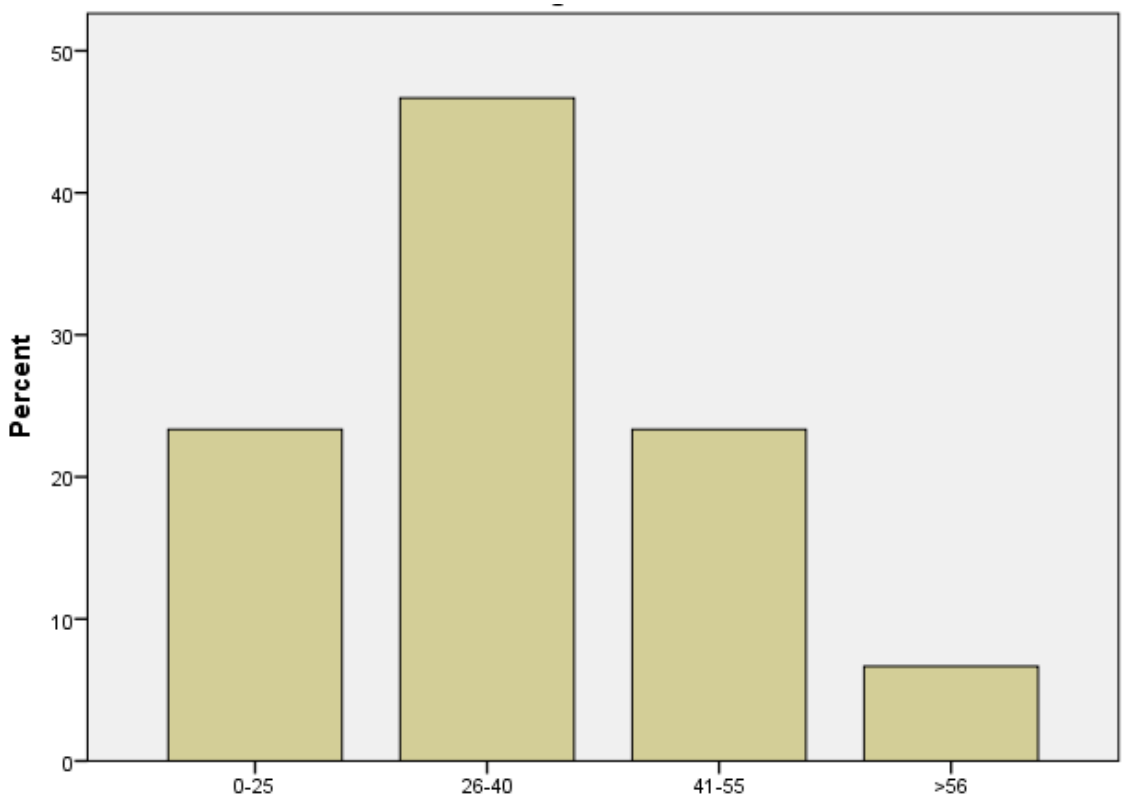


Figure 4.7.3: Driver's age

CHAPTER-5

CONCLUSIONS AND RECOMMENDATIONS

5.1 Conclusions

In this research study the researchers basically assessed the passenger's and driver's perception on the bus management system of Dhaka city. The researchers chose one route (Uttara Diabari to Saydabad, i.e. A-317 Route) of Dhaka city and the survey was conducted on the passengers and drivers of this route. There were total 14 questions for passengers on the questionnaire related to the bus management system. There were another 10 questions for drivers on the questionnaire. The data was assessed by the percentage of total passengers and drivers. According to results obtained by data analysis, the following conclusions can be made:

- About 77% passengers think that the sitting arrangement and internal space is not comfortable. This is because all most all of the bodies of the buses are made in Bangladesh and during their establishment the capacity is always exceeded and more seats are introduced reducing the internal space of the buses. So, the bus companies should focus on the internal spaces and make sure about the comfort level of the passengers.

- Around 64% people are not happy with the travel cost as it should be minimized, especially for the students. The only authorized bus in Route A-317 known as Raida Enterprise introduces a sign inside all their buses that says "No Half Pass", which means no half fare for the students.

- About 76% passengers think that the bus stops are not in this particular location. So, the bus stops should be increased to reach up to the demand of the passengers.

- About 57% passengers think that the route covered by the bus is satisfactory. But there are also a large percentage of people against it.

- Overall 70% passengers, especially most of the female passengers, think that smoking cigarette while driving must be prohibited. The seats reserved for females are beside and just behind the bus driver. As a result, female passengers suffer most from the drivers' smoking of cigarette while driving.

- Around 63% passengers think that drivers are careless while driving.

- About 80% passengers think that conductors dressing sense is not okay. So, a dress code should be made for the bus conductors. Also 64.7% people are not satisfied with the behavior of the conductors.

- About 76% passengers think that the public bus is always crowded. Bus is one of the cheapest and affordable modes of transportation due to which a huge number of people uses the bus service daily and compared to this huge population there are only a few amount of buses available. So, number of buses should be increased or introduce a new way of transport to reduce the crowd in buses as government has already started project like metro rail.

- Around 67% passengers think that the quality of service provided by the bus companies has not improved in recent years. So, the bus companies should be focused on their quality of service.

- Around 60% passengers think that the accidents happened for the driver's fault and around 25% passengers think that the reason is careless pedestrian.

- In the survey, it was found that there is no proper training system for bus drivers in Dhaka city. Many drivers and passengers suggested that the Government should make an institute to train all the drivers and guide them to know and follow the traffic rules.

- Many drivers and passengers suggested that dishonest traffic police should be revoked because they create unnecessary problem for the driver which make them driving miserably sometimes.

- According to the survey a driver roughly drives 19 hours which is a long time and as a result they have to rest for the next day.

- Around 52% drivers said that they are happy with the daily income. Most of them are paid according to the number of round trips they complete per day.

- About 37.7% drivers said that they have faced accident in their driving carrier. There were about 12 accidents reported by those 11 drivers.

- According to the bus drivers maximum passenger occupancy is seen between 9 am-11am and 4pm-7pm.

- About 62% drivers think that the possible reason of accidents is the careless pedestrian. Some of the drivers said that a lot of time they have to press the hard break to stop the bus due to some pedestrian crossing the road while talking on mobile phone. According to the drivers most of the pedestrians are not using the foot-over bridges or zebra crossing. So, the pedestrian should also follow the rules

In few questions like the income of drivers, the researchers have the answer in the positive way. But it cannot cover up the problems of bus management system of Dhaka city. It can be clearly seen from the data that the bus management system of Dhaka city does not meet the global standard. So a more advanced bus management system is essential in Dhaka city for better livings.

5.2 Recommendations

Few problems came out on bus management system in Dhaka city from this limited study. Safety, Security, Service, Fare, Behaviors are the major one. There have total 366 routes in Dhaka city. This study is only for one route.

There has different point of views mostly the passenger's and driver's point of view. Here is the sum of all point of views and suggest that the following recommendations:

- The result of the study should be shared with BRTA and other relevant government agencies for helping them to know the real problems and give realistic solution and make the bus management system more effective and secured.

- All over the world, the bus management system is becoming digital day by day. Bangladesh Government should be more proactive to fully digitalize the bus management system for making it more efficient and user friendly that will also help in enforcing the traffic rules and regulations as well as reducing the traffic jam in Dhaka city.

- Bus stations need to be more visible and fixed for disciplining the bus management system.

- Bus drivers need to have more professional training and attitude, who would know the traffic and driving rules, and obey the related rules and regulations.

- Traffic police and their system need to be more digitalized and professional.

- Bus companies need to be more helpful for drivers and should think about good services for passengers.

- Road structure and the right alignment should provide a smooth and safe journey. So, the distresses of the road should be minimized.

- The buses also need to be introduced with the photo and ID of the drivers so that the passengers can be assured of the identity and qualifications of the driver that would help enhancing their safety too.

- Passengers need to know and obey the rules for journey of a bus, for example they need to understand they are not able to come out or enter the bus from anywhere, they must use zebra crossing for crossing the road (where available), etc.

- Drivers must slowdown their vehicles near the zebra crossing.

5.3 Recommendations for Future Work

During the survey the researchers found some limitations of bus management system that can be developed through future research work. So, in future there should be more research work about bus management system. The following recommendations are for the future development of bus management system.

- Laminated copy of driver's photo and ID should be placed in the front glass of all the buses so that the passengers can feel safe while using the bus services. As sometimes the researchers found that the conductors are driving the bus, which should be strictly controlled. So, if the driver's photo and ID are displayed, the passengers can easily identify who is driving the bus and assure their safety.

- Different bus can be introduced for different route in order to satisfy all sections of people.

- Well-planned stations are needed for selected locations as the people can reach their desired locations.

REFERENCES

1) Mahmud, S.M.S., Rahman, M.H., and Hasanat-E-Rabbi, S. (2013). Transport System in Bangladesh. *Issues and Options for Sustainable Development*, pp. 2-3. (http://ari.buet.ac.bd/)

2) Smith, M. (2017). Bus Management System. Retrieved from http://services.lovelycoding.org/bus-management-system/

3) Ahmed, M. (2016,November). Public Transport in Dhaka. *Dhaka Tribune*. Retrieved from https://www.dhakatribune.com/magazine/2016/11/18/public-transport-dhaka/

4) Paul, R.C. (2018, July 21). Local Bus Route of Dhaka City. *Life in Bangladesh*. Retrieved from http://lifebd360.blogspot.com/2017/08/local-bus-route-of-dhaka-city.html

5) Rahman, H. (2018,August 19). Jabal-e- Noor driver Jubair denied bail. *The daily Star*. Retrieved from https://www.thedailystar.net/news/city/jabal-e-noor-paribahan-bus-driver-denied-bail-Airport-road-accident-in-dhaka-1622971

6) Khan, P. (2019, March 22). Students call for countrywide class boycott. *The daily Star*. Retrieved from https://www.thedailystar.net/city/road-accident-in-dhaka-today-bup-student-killed-by-bus-in-gulshan-1717237

7) Citivas Archimedes, IASI T76.1 Bus Management System in Iasi, May 2012.

8) Heather Allen, Bus reform in Seoul, Republic of Korea, 2013

9) *Bradley Schroeder, Case study: Vientiane Sustainable Urban Transport Project, 2017*

10) Yusak O. Susilo and Wimpy Santosa, "A Reflection of Motorization and Public Transport in Jakarta Metropolitan Area", 2007

11) Luis Antonio Lindau, Dario Hidalgo and Daniela Facchini. "*Built Environment".* Vol. 36, No. 3, Bus Rapid Transit: A Public Transport Renaissance (2010), pp. 274-282

12) UITP Europe (2015). "Bus Systems in Europe: Towards a Higher Quality of Urban Life and a Reduction of Pollutants and CO^2 Emissions".

13) Md. AnisurRahman. "Business Model for Bus Operation in Dhaka City under Proposed BRT System Scenario". April, 2017.

APPENDIX

Appendix – A

Table A.1: Organizations to Regulate and Manage the Public Transport System

Organization	Jurisdiction	Main Purpose
Dhaka Transport Coordination Authority (DTCA)	Greater Dhaka	Coordinate transport policy, infrastructure and strategic planning: - Preparation of Strategic Planning - Approval of transport infrastructure in Dhaka City - Coordinate transport agencies
Bangladesh Road Transport Authority (BRTA)	National	Administration of road transport system: - Registration of vehicles - Route permits for Land Transport - Collection of road fees and taxes
Bangladesh Road Transport Corporation(BRTC)	National	- Public Transport Operator
Dhaka North City Corporation (DNCC) Dhaka South City Corporation (DSCC)	Dhaka City	- Owner of Transport Infrastructure - Maintenance and Development public transit infrastructure in Dhaka City.
Dhaka South City Corporation (DSCC)	Dhaka City	- Owner of Transport Infrastructure - Maintenance and Development public transit infrastructure in Dhaka City
Dhaka Metropolitan Police (DMP)	Dhaka Metropolitan Area	Application of traffic polices in Dhaka Metropolitan Area - Traffic Enforcement
Dhaka Metropolitan Regional Transportation Committee	Dhaka Metropolitan	Regulate public transport:

Organization	Jurisdiction	Main Purpose
(DMRTC)	Area	- Planning public transport routes - Regulate the number of buses allowed by route
Dhaka BRT company Ltd	Dhaka	System manager of Dhaka BRT

Table A.2: Evolution of the of Bus Routes in Dhaka from 1992 to 2015

Years	No of routes	Bus and Minibus
1992	27	1253
1993	15	1020
1997	16	1055
2001	19	1367
2002	34	2850
2003	37+13 (Sub urban route)	2930+925 (Sub urban)
2004	71+18	3645+1130
2005	89+27	4244+1130
2006	99+27	4574+1455
2007	108+27	4924+1457
2008	149	6597
2009	157	7318
2010	160	7053

Years	No of routes	Bus and Minibus
2013	168	7362
2015	209	9160
2016	289	12526

Year	Up to 2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	Grand Total
Bus	**1155**	**453**	**632**	**374**	**779**	**728**	**949**	**1082**	**1144**	**914**	**1231**	**1501**	**1218**	**971**	**1364**	**2221**	**3419**	**27537**
Minibus	**3654**	**831**	**1924**	**1051**	**368**	**118**	**75**	**77**	**107**	**112**	**149**	**136**	**103**	**83**	**135**	**103**	**164**	**10214**
Total	**4809**	**1284**	**2556**	**1425**	**1147**	**846**	**1024**	**1159**	**1251**	**1026**	**1380**	**1637**	**1321**	**1054**	**1499**	**2324**	**3583**	**37751**

Table A.3: Number of Registered Buses and Minibuses in Dhaka (Yearly)

Table A.4: Bus Fares in Dhaka (Urban and Suburban routes)

Year	Bus Fare (Tk./Km)
1992	0.31
2007	0.87
2009	1.20
2011	1.55
2012	1.60
2015	1.70

Appendix – B

Survey Questionnaire

B-1 Survey Questionnaire [Bangla Version]

যাত্রীদের বৈশিষ্ট্য এবং তাদের ধারণা মতে ঢাকায় বাস ব্যবস্থাপনা ব্যবস্থার সম্পর্কিত একটি জরিপ

নির্দেশনা: সঠিক উত্তরটি চিহ্নিত করুন (✓)

এই জরিপটি সোনারগাঁও ইউনিভার্সিটির "সিভিল ইঞ্জিনিয়ারিং" প্রোগ্রামের অধীনে পরিচালিত একটি গবেষণা প্রকল্পে ব্যবহারের জন্য পরিচালিত হচ্ছে। এই প্রশ্নাবলীর উদ্দেশ্য হচ্ছে যাত্রীদের বৈশিষ্ট্য এবং ঢাকায় বাস ব্যবস্থাপনায় তাদের ধারণার মধ্যে সম্পর্ক নির্ধারণ করা। আপনি যে তথ্য সরবরাহ করছেন সেটি আমাদের গবেষণায় অবদান রাখবে এবং এই জরিপে আপনার অংশগ্রহণ আমাদের জন্য খুবই গুরুত্বপূর্ণ। এটি সড়ক নিরাপত্তার জন্য ব্যাপকভাবে অবদান রাখবে যা অবশেষে আমাদের জীবনধারার জন্য উপকারী হবে। আপনার ব্যক্তিগত তথ্য গোপন থাকবে।

<table>
<tr><td colspan="2">তারিখ: ১২/০৬/২০২৪</td></tr>
<tr><td colspan="2">রাস্তার নাম: রামপুরা টু স্টাফ কোয়ার্টার</td></tr>
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<tr><td colspan="2">রাস্তা এবং যানবাহন তথ্য:আলিফ পরিবহন</td></tr>
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<tr><td colspan="2">যাত্রী সম্পর্কিত তথ্য</td></tr>
<tr><td colspan="2">আপনার নাম (ঐচ্ছিক):রাকিব</td></tr>
<tr><td>বৈবাহিক অবস্থা:
A) বিবাহিত ✓
B) অবিবাহিত</td><td>লিঙ্গ:
A) পুরুষ✓
B) মহিলা
C) অন্যান্য</td></tr>
<tr><td colspan="2">বয়স: A) 0 – 25 B) 26 - 40 ✓ C) 41 -55 D) ≥ 56</td></tr>
</table>

1. একটি কাজের দিন বাসে আপনার ভ্রমণের সময়কালের মোট দৈনিক সময়কাল কত?
   - 30 মিনিটের কম
   - 30 মিনিট – 45 মিনিট
   - 45 মিনিট – 60 মিনিট
   - 60 মিনিট – 75 মিনিট
   - 75 মিনিট – 90 মিনিট✓
   - 90 মিনিট – 105 মিনিট
   - 105 মিনিট – 120 মিনিট
   - 120 মিনিটের বেশি

2. অভ্যন্তরীণ জায়গা এবং বসার ব্যবস্থা আপনি আরামদায়ক মনে করেন?

- হ্যাঁ
- না✓

3. আপনি ভ্রমণ খরচ সম্পর্কে সন্তুষ্ট?

- হ্যাঁ✓
- না

4. আপনি কি মনে করেন যে এই বিশেষ রুটে বিভিন্ন বাস স্টপগুলির অবস্থান সঠিক?

- হ্যাঁ
- না✓

5. নিম্নলিখিত বৈশিষ্ট্যগুলোতে কন্ডাক্টরকে রেট দিন (সন্তুষ্টি ভিত্তিক)

	ঠিক আছে	ঠিক নেই
কন্ডাক্টরদের আচরণ		✓
সহযোগীতার মনোভাব	✓	
পোশাক	✓	

6. নিম্নলিখিত বৈশিষ্ট্যগুলোতে ড্রাইভারদের রেট দিন (সন্তুষ্টি ভিত্তিক)

	ঠিক আছে	ঠিক নেই
ড্রাইভিং		✓
ড্রাইভারদের শারীরিক অবস্থা	✓	
গাড়ি চালানোর সময় ধূমপান করা		✓

7. আপনি কি একমত যে পাবলিক বাস সর্বদা ভীড় হয়?

- হ্যাঁ✓
- না

8. আপনি যে বাসে ভ্রমণ করেন সেটি যতটুকু রুট যাতায়াত করে আপনি তাতে সন্তুষ্ট?

- হ্যাঁ✓
- না

9. সাম্প্রতিক বছরগুলিতে বাস দ্বারা সরবরাহিত সেবাগুলির মান উন্নত হয়েছে , আপনি কি একমত?

- হ্যাঁ
- না✓

10. ঢাকায় বাস সার্ভিস ব্যবহার করার জন্য আপনি কি অন্যদের সুপারিশ করবেন?

- হ্যাঁ
- না✓

11. বাসে যেসব পরিষেবাগুলি সরবরাহ করা হয়েছে তা চিহ্নিত করুন।

- শিক্ষার্থীদের জন্য 50% ডিসকাউন্ট✓
- প্রতিবন্ধীদের জন্য 100% ডিসকাউন্ট✓
- নারী ও শিশুদের জন্য সংরক্ষিত আসন✓

12. আপনি কি কখনও বাসে কোন ধরনের মারাত্মক দুর্ঘটনার মুখোমুখি ছিলেন?

- হ্যাঁ✓
- না

দুর্ঘটনা সংখ্যা _____ প্রকার: নিহত / আহত✓

13. আপনি কি কখনো বাসে সংঘর্ষের মুখোমুখি হন?

- হ্যাঁ✓
- না

সংঘর্ষ সংখ্যা _____ প্রকার: আঘাত / কোন আঘাত নেই✓

14. যদি হ্যাঁ, তাহলে কেন মনে হয় দুর্ঘটনা ঘটেছে?

- ড্রাইভার এর দোষ
- রাস্তা নষ্ট✓
- উদাসীন পথচারি
- অন্যান্য (সম্ভব হলে উল্লেখ করুন) _____

B-2 Survey Questionnaire [English Version]

A Survey Related to Passengers' Characteristics and their Perception of Bus Management System in Dhaka

Instruction: mark (✓) the correct option

This survey is being conducted to utilize in a research project that is being directed under the program of "Civil Engineering" of Sonargaon University. The objective of this questionnaire is to determine the relation between drivers' characteristics and their perception of bus management system in Dhaka. Your participation in this survey is very important for us since the information you are providing will contribute to this research study. It will also contribute greatly to road safety which will ultimately be beneficial to your life style. Your personal information will remain undisclosed.

Date:12.06.2024	Road number or code:R110
Road Name:Rampura to Staff Quarter	
Location:Rampura	
Route & Vehicle Info:Achim Paribahan	
No. of Lanes:	
Information Related to Respondent	
Your Name (Optional):Rifad	
Marital Status: A)Married B) Unmarried✓	Gender: A) Male ✓ B) Female C) Other
Age: A) 0 - 25 B) 26 - 40 ✓ C) 41 - 55 D) ≥ 56	

- What is the total daily duration of your travel time in buses in a working day?
  - Less than 30 minutes
  - 30 minutes – 45 minutes
  - 45 minutes – 60 minutes✓
  - 60 minutes – 75 minutes
  - 75 minutes – 90 minutes
  - 90 minutes – 105 minutes
  - 105 minutes – 120 minutes
  - More than 120 minutes

- Are Internal space and sitting arrangement of the buses you use comfortable?
  - Yes
  - No✓

- Are you satisfied about the travel cost?
  - Yes
  - No✓
- Do you think that location of different bus stops in this particular route is justified?
  - Yes
  - No✓
- Rate the conductors on the following parameters (based on satisfaction).

	Yes	No
Behavior of conductors	✓	
Helpfulness	✓	
Dress Sense	✓	

- Rate the drivers on the following parameters (based on satisfaction).

	Yes	No
Carefully driving		✓
Fitness of driver		✓
Smoking while driving	✓	

- Do you agree that the public buses are always crowded?
  - Yes✓
  - No

- Are you satisfied with the route covered by the bus you travel in?
  - Yes✓
  - No

- Do you agree if that the quality of services provided by the bus improved in recent years?
  - Yes
  - No✓
- Will you recommend others to use bus services in Dhaka?
  - Yes
  - No✓
- Mark the services those are provided at those buses that you are aware of.
  - 50% discounts for students✓
  - 100% discounts for autistics
  - Reserved seats for women & children✓

- Did you ever face any kind of fatal accident in buses? If yes, how many & what type?
  - Yes✓
  - No

  Accident number ___5_____, Type: Death / Injury✓

- Did you ever face any kind of Clash in buses? If yes, how many & what type?
  - Yes✓
  - No

  Clash number ___2_____ & Type: Injury✓ / Non- injury

- If yes, then why do you think the accident occurred?
  - Driver's fault✓
  - Fault in road design
  - Careless pedestrian
  - Others (Mention if possible) _____

APPENDIX – C

Some Pictures during the Survey





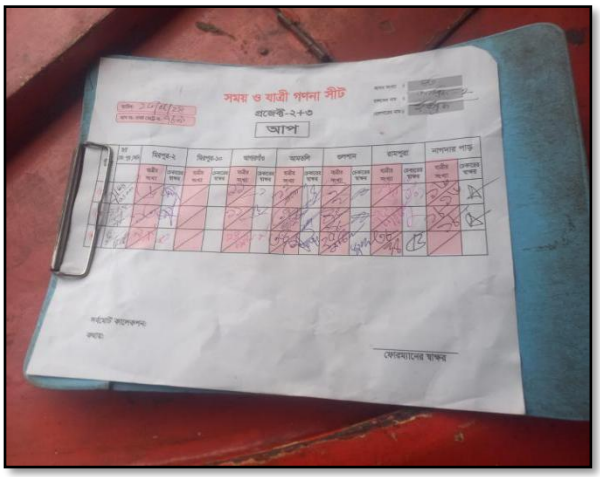
“Achim Bus” At Rampura stoppasge’’





During Survey at Rampura station





Asking questions from drivers at Rampura station

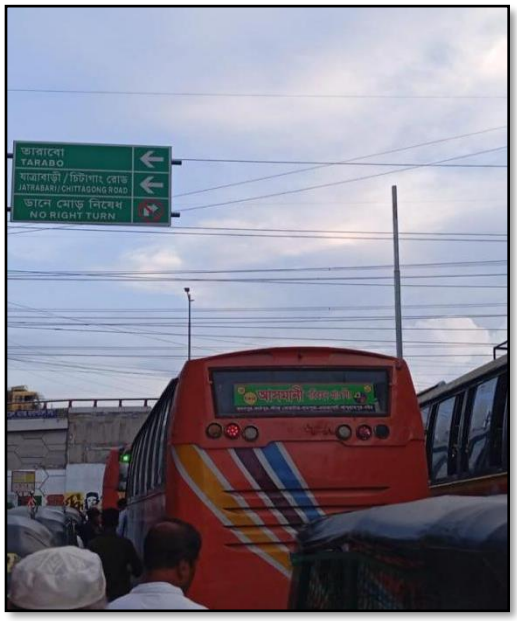




During Survey at Demra Staff Quarter station



During Survey at Demra Staff Quarter station



Appendix – D

List of Survey Response for Passengers

Abbreviations

Resp No.: Respondent Number

Ms: Marital Status

G: Gender

NFA: Number of Fatal Accidents

TFA: Types of Fatal Accidents

NCA: Number of Crash Accidents

TCA: Types of Crash Accidents

	MS	G	Age	Q1	Q2	Q3	Q4	Q51	Q52	Q53	Q61	Q62	Q63	Q7	Q8	Q9	Q10	Q11	Q12	NFA	TFA	Q13	NCA	TCA	Q14
1	1	2	1	7	2	2	1	2	2	2	2	2	2	1	2	1	2	3	2	0		2			
2	2	2	1	4	2	1	2	2	2	2	2	2	2	1	1	1	2	3	1	2	2	1	2	2	1
3	1	2	3	6	2	1	2	2	2	2	2	2	2	1	1	1	1	3	2	0		2	0		
4	2	1	1	4	1	2	1	1	1	1	1	1	1	1	2	1	2	3	2	0		2	0		3
5	2	2	1	3	1	2	1	1	1	1	1	1	1	1	2	1	1	2	2	0		2	0		
6	1	1	1	3	2	2	1	2	2	1	2	1	2	2	2	1	1	1	1	1	2	2	0		
7	2	2	3	6	2	1	2	1	1	1	1	1	1	1	1	1	2	2	1	1	2	2	0		
8	2	1	4	1	2	2	1	1	2	1	2	1	2	2	1	2	2	3	2	0		2	0		
9	1	2	1	8	2	1	2	2	2	2	2	2	2	1	1	2	1	2	2	0		1	2	2	1
10	2	1	2	2	2	1	1	2	1	2	2	2	2	1	2	1	2	3	2	0		2	0		
11	1	1	3	8	2	1	1	2	2	2	2	2	1	1	2	1	2	1	1	6	1	1	2	1	1
12	1	2	2	5	2	1	1	1	2	2	1	1	2	2	1	2	1	1	1	1	2	2	0		
13	1	2	2	5	2	1	1	2	2	2	2	1	1	1	1	1	2	1	1	1	2	2	0		
14	1	1	4	1	2	1	2	2	2	2	2	2	2	1	2	1	2	2	2	0		2	0		
15	2	1	3	8	1	2	1	1	2	1	1	2	1	1	1	2	2	1	2	0		1	5	1	
16	1	2	3	8	2	1	1	1	1	2	2	2	1	1	1	2	2	1	2	0		2	0		
17	1	2	1	4	1	1	2	2	2	2	1	1	1	2	2	1	2	1	2	0		1	1	1	3
18	1	2	2	8	2	2	2	2	2	2	2	2	2	1	1	1	2	3	1	2	2	1	2	2	1
19	2	2	1	6	2	1	2	2	2	2	2	2	2	1	2	1	2	3	2	0		2	0		
	MS	G	Age	Q1	Q2	Q3	Q4	Q51	Q52	Q53	Q61	Q62	Q63	Q7	Q8	Q9	Q10	Q11	Q12	NFA	TFA	Q13	NCA	TCA	Q14
20	1	1	2	4	1	2	1	1	1	2	1	1	1	1	1	1	1	3	2	0		2	0		
21	2	1	2	3	2	1	2	2	2	2	2	2	2	1	2	1	1	1	1	2	2	2	0		
22	1	2	2	3	2	2	2	2	2	2	2	2	2	1	2	1	2	1	2	0		2	0		
23	1	2	1	7	2	2	2	2	2	2	2	2	2	1	2	2	1	1	2	0		1	2	2	1
24	1	1	3	4	2	2	2	2	2	2	2	2	2	1	2	2	2	1	1	1	2	1	12	1	
25	1	1	2	8	2	2	2	2	1	2	1	1	2	1	2	2	2	3	2	0		2	0		
26	1	1	3	6	2	2	2	1	2	1	2	1	1	1	1	2	2	3	2	0		2	0		
27	2	1	2	7	2	2	2	2	2	2	2	2	2	2	2	2	2	3	1	4	2	1	1	2	1

28	1	1	2	5	2	2	2	2	2	2	2	2	2	1	2	2	2	2	1	5	2	2	0		
29	2	2	3	4	2	2	2	2	2	2	2	2	2	1	2	2	2	1	2	0		2	0		
30	1	2	2	8	1	1	2	1	1	1	1	2	1	1	2	1	2	1	1	1	2	2	0		
31	1	1	3	2	2	2	2	2	2	2	2	2	2	1	2	1	1	1	1	1	2	2	0		
32	1	1	2	8	2	1	2	2	2	2	1	2	1	1	2	2	1	2	2	0		2	0		
33	1	1	3	8	2	2	2	2	2	2	2	1	2	1	2	2	1	2	1	1	2	1	1	1	
34	1	1	2	1	2	1	2	2	2	2	2	2	2	1	1	1	1	1	2	0		2	0		
35	1	2	2	4	2	2	2	1	2	2	2	2	2	1	2	2	2	1	2	0		2	0		
36	1	1	2	8	2	1	2	2	2	2	2	2	2	1	2	2	1	1	2	0		2	0		
37	2	1	3	2	2	1	2	2	2	2	2	2	2	1	2	2	2	2	2	0		2	0		
38	1	1	2	8	2	2	2	2	2	2	2	2	2	1	2	2	1	3	1	2	2	1	1	2	
39	2	2	1	5	2	2	1	1	1	1	1	1	1	1	1	1	1	3	2	0		2	0		
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42	1	1	3	4	2	2	2	1	1	2	1	1	2	1	2	1	1	2	2	0		1	4	2	3
43	1	1	3	4	1	1	1	1	1	1	2	1	2	1	1	1	2	3	2	0		2	0		
44	1	1	3	5	1	1	1	1	1	1	1	1	2	1	1	2	2	3	2	0		2	0		
45	2	1	3	4	1	1	2	1	1	1	1	1	2	1	1	1	2	3	2	0		2	0		
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49	2	2	1	5	2	1	2	2	2	2	2	2	2	2	1	2	1	2	2	0		1	1	1	1
50	1	1	2	4	2	1	2	2	1	2	2	2	2	2	1	2	2	1	2	0		2	0		
51	1	1	2	7	2	2	2	2	2	2	2	1	2	1	2	2	1	1	2	0		1	1	2	
52	2	1	3	8	2	2	2	2	2	2	2	2	1	1	1	1	1	1	2	0		1	1		1
53	2	2	1	8	2	2	2	2	2	2	2	1	2	1	2	2	2	1	2	0		2	0		
54	1	1	3	7	2	1	2	2	1	2	2	2	2	2	1	1	2	2	2	0		1	1	2	1
55	1	1	2	4	1	1	2	1	1	2	1	1	2	1	1	1	2	3	2			2	0		
56	1	1	3	5	2	1	2	2	1	2	1	1	1	2	1	2	1	2	2			1	4	1	
57	1	1	3	7	2	1	2	2	2	2	1	2	1	1	1	2	2	3	2	0		2	0		
58	1	2	1	6	2	1	2	2	2	2	2	2	2	1	2	1	1	2	2	0		2	0		
59	1	2	1	2	2	1	2	2	1	2	2	2	2	2	1	2	2	1	2	0		1	2	2	2
60	1	2	3	7	2	1	2	2	2	2	2	2	2	2	1	2	2	2	2	0		1	2	1	1
61	2	2	1	4	2	1	2	2	2	2	2	2	2	2	1	2	2	2	1			1	2	1	3
62	2	2	1	2	2	1	2	2	1	2	1	1	1	2	1	2	1	2	2	0		2			
63	1	1	2	4	4	2	2	2	2	1	1	1	2	2	1	2	1	1	2	0		2	0		
64	1	1	2	6	2	1	2	2	1	2	2	2	2	2	1	2	2	2	2	0		1	3	2	3
65	1	2	2	8	1	1	2	1	2	2	2	2	2	1	1	2	2	1	2	0		2	0		
66	1	2	1	3	2	1	2	2	2	2	2	2	2	2	1	2	1	2	2	0		2	0		
	MS	G	AGe	Q1	Q2	Q3	Q4	Q51	Q52	Q53	Q61	Q62	Q63	Q7	Q8	Q9	Q10	Q11	Q12	NFA	TFA	Q13	NCA	TCA	Q14
67	2	1	1	8	2	2	2	2	1	1	2	2	2	1	1	2	1	3	2	0		2	0		
68	2	1	3	5	2	1	2	2	1	2	2	2	2	2	1	2	2	2	2	0		2	0		
69	2	1	2	7	2	1	1	2	1	2	2	2	2	2	1	2	2	2	1	1	2	1	5	2	3
70	1	1	3	5	2	2	2	2	2	2	2	2	2	1	1	2	2	1	2	0		2	0		
71	1	2	1	8	2	2	2	2	2	2	2	1	2	1	2	2	1	1	2	0		1	3	1	1
72	2	2	1	4	2	2	1	2	2	2	2	2	2	1	2	2	1	1	2	0		2	0		
73	1	1	3	5	2	2	2	1	1	2	1	1	2	1	1	1	2	3	2	0		2	0		

74	1	2	1	8	2	2	2	1	1	2	2	1	1	1	2	2	1	2	2	0		1	10	1	
75	1	2	1	4	2	1	2	2	1	2	2	2	2	2	1	2	2	2	1	3	1	1	3	1	1
76	2	1	1	8	2	1	2	1	1	2	2	2	1	1	1	2	1	3	2	0		2	0		
77	1	1	3	5	2	2	1	2	2	2	2	2	2	2	2	2	1	3	2	0		2	0		1
78	2	1	2	8	2	2	2	1	1	2	1	1	2	1	2	2	2	1	2	0		2	0		1
79	1	1	2	4	1	2	2	1	1	2	1	1	2	1	2	2	1	2	1	1	2	2	0		4
80	2	2	1	4	2	1	2	2	1	2	2	2	2	2	1	2	1	3	2	0		1	3	1	1
81	2	1	3	8	2	2	2	2	2	2	1	1	1	1	2	2	1	1	2	0		2	0		
82	2	1	2	3	2	2	1	2	2	2	2	2	2	2	1	1	2	2	2	0		2	0		2
83	1	1	3	8	1	1	1	1	1	1	1	1	1	1	1	1	2	1	2	0		1	2	1	1
84	2	2	2	8	1	2	2	1	1	1	1	1	2	1	1	1	2	1	2	0		2	0		
85	2	1	1	6	2	2	2	2	1	2	2	2	2	1	1	2	1	1	2	0		2	0		
86	2	1	2	4	2	2	2	1	1	1	1	1	2	1	1	2	2	2	2	0		1	1	1	1
87	1	1	2	4	1	1	2	1	1	2	1	1	2	1	1	1	2	2	2	0		2	0		
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247	2	1	3	7	2	2	2	2	2	2	2	2	2	1	1	2	1	3	1	4		1	12		
248	2	1	4	8	2	2	1	1	1	2	2	1	2	1	2	2	2	1	2	0		1	1	1	1
249	2	2	1	1	2	2	2	2	1	1	2	2	2	1	1	2	1	1	2	0		2	0		
250	1	2	2	5	2	1	2	2	1	2	2	2	2	1	2	1	1	2	2	0		2	0		
251	1	2	1	3	2	2	2	2	1	2	2	2	2	1	1	2	1	1	2	0		2	0		
252	1	1	3	7	1	1	1	1	1	1	1	1	2	1	1	1	2	2	2	0		2	0		
253	1	1	3	4	1	2	2	2	1	2	2	2	2	1	1	2	2	1	2	0		2	0		
254	2	2	1	6	2	2	2	1	2	2	1	2	2	1	1	2	1	3	2	0		2	0		
	MS	G	AGe	Q1	Q2	Q3	Q4	Q51	Q52	Q53	Q61	Q62	Q63	Q7	Q8	Q9	Q10	Q11	Q12	NFA	TFA	Q13	NCA	TCA	Q14
255	1	2	1	2	2	2	2	2	1	1	2	2	2	1	1	2	1	3	2	0		2	0		
256	1	2	2	6	2	2	2	2	1	2	2	2	2	1	1	2	1	1	2	0		2	0		
257	1	1	2	4	2	1	1	1	1	1	1	1	2	1	1	2	1	2	2	0		2	0		

258	2	1	3	6	2	1	1	1	1	2	1	1	2	1	1	2	1	1	2	0		2	0		
259	2	1	2	4	2	2	2	2	1	1	2	2	2	1	1	2	1	1	1	1	2	2	0		
260	2	1	2	4	2	2	2	2	2	2	2	2	2	1	2	2	2	2	2	0		2	0		
261	1	2	1	8	2	1	2	1	1	2	2	2	2	1	2	1	2	3	1	1	2	2	0		
262	1	1	2	5	1	1	1	1	1	1	1	1	1	1	1	1	2	2	2	0		2	0		
263	1	1	2	8	2	2	2	1	1	2	2	2	2	1	2	2	1	1	2	0		2	0		
264	1	1	2	5	2	1	1	1	1	2	2	2	2	1	1	1	1	1	2	0		2	0		
265	2	2	2	4	2	1	2	2	1	2	2	2	2	2	1	2	1	2	2	0		2	0		
266	2	1	2	4	2	1	2	2	2	2	2	2	2	2	2	2	1	2	2	0		2	0		
267	1	2	1	4	2	1	2	2	1	2	2	2	2	2	2	2	2	2	2	0		2	0		
268	1	1	3	6	2	1	2	2	2	2	2	2	2	1	1	2	2	3	2	0		1	1	2	1
269	2	1	3	6	2	1	2	2	2	2	2	2	2	2	1	2	2	3	2	0		2	0		
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271	2	2	1	8	2	2	2	2	2	2	2	1	1	1	2	2	1	3	2	0		1	4	2	1
272	2	2	2	1	2	2	2	2	1	2	2	2	2	1	1	2	1	1	2	0		1	2	1	1
273	2	2	1	1	2	2	2	2	1	1	2	2	2	1	1	2	2	1	2	0		2	0		
274	1	1	2	3	2	2	2	2	2	2	2	2	2	2	2	1	2	3	2	0		1	1	2	1
275	2	1	1	6	2	2	1	2	2	2	1	2	2	2	2	1	2	2	2	0		1	2	2	3
276	2	2	3	7	1	1	2	1	1	2	1	1	2	1	1	1	1	3	2	0		2	0		
277	2	1	2	7	1	1	1	1	1	2	1	1	2	1	1	1	2	1	2	0		2	0		
278	1	1	2	6	1	1	1	1	1	2	1	1	2	1	1	2	2	3	2	0		2	0		
279	2	2	2	3	2	1	1	2	1	2	2	2	2	2	2	1	1	3	2	0		2	0		
280	1	2	2	8	2	2	2	2	1	1	2	2	2	1	1	2	2	1	2	0		2	0		
281	2	1	2	8	2	1	2	2	1	2	2	2	2	2	1	2	1	2	1	2	1	2	0		
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283	1	1	1	8	2	2	2	2	2	2	2	1	2	1	2	2	2	1	2	0		2	0		
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288	1	1	3	8	2	1	2	2	2	1	1	2	2	1	2	2	1	1	1	1	1	1	5	2	1
289	2	1	2	7	2	2	1	2	2	2	2	2	2	1	1	2	1	3	2	0		1	2	2	1
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291	1	1	2	8	2	2	2	2	2	2	2	2	2	1	2	2	1	1	2	0		2	0		
292	2	2	1	3	1	2	1	1	1	1	1	1	1	1	2	1	1	2	2	0		2	0		
293	1	2	2	6	2	2	1	1	1	1	1	1	2	1	1	1	2	1	2	0		2	0		
294	2	2	1	6	2	2	2	2	2	2	2	2	2	2	2	2	2	3	2	0		2	0		4
295	1	2	2	8	2	2	2	2	1	1	2	2	2	1	1	1	1	3	2	0		1	1	2	1
296	2	2	1	2	2	1	1	2	2	2	1	2	2	2	1	2	2	3	2	0		2	0		
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298	2	2	2	8	1	2	2	1	1	1	1	1	2	1	1	1	2	1	2	0		2	0		
299	2	1	1	6	2	2	2	2	1	2	2	2	2	1	1	2	1	1	2	0		2	0		
300	2	2	1	3	1	2	1	1	1	1	1	1	1	1	2	1	1	2	2	0		2	0		
301	1	1	1	3	2	2	1	2	2	1	2	1	2	2	2	1	1	1	1	1	2	2	0		
	MS	G	Age	Q1	Q2	Q3	Q4	Q51	Q52	Q53	Q61	Q62	Q63	Q7	Q8	Q9	Q10	Q11	Q12	NFA	TFA	Q13	NCA	TCA	Q14
302	2	2	3	6	2	1	2	1	1	1	1	1	1	1	1	1	2	2	1	1	2	2	0		
303	2	1	4	1	2	2	1	1	2	1	2	1	2	2	1	2	2	3	2	0		2	0		

304	1	2	1	8	2	1	2	2	2	2	2	2	2	1	1	2	1	2	2	0		1	2	2	1
305	2	2	1	6	2	2	2	2	2	2	2	2	2	2	2	2	2	3	2	0		2	0		4
306	1	2	2	8	1	1	1	1	1	1	1	1	1	1	1	1	1	3	2	0		2	1	2	1
307	1	1	2	8	2	2	2	2	1	1	2	2	2	1	1	2	1	3	2	0		2	0		
308	1	1	2	4	2	2	2	2	1	2	2	1	2	2	2	2	2	3	2	0		1	2	1	1
309	1	2	2	8	2	2	2	1	1	1	1	1	1	2	2	2	2	3	2	0		2	0		
310	1	2	1	2	2	2	2	2	1	1	1	2	1	2	2	2	1	1	2	0		2	0		
311	1	1	2	6	1	1	2	1	1	1	1	1	2	1	1	1	1	3	2	0		2	0		
312	2	2	2	4	2	2	2	2	2	2	2	2	2	2	2	2	2	3	2	0		1	2	1	1
313	1	1	3	1	2	2	2	2	1	2	1	2	2	2	2	1	2	1	2	0		2	0		
314	2	1	3	3	2	2	2	2	2	2	2	2	2	2	2	2	2	3	2	0		1	2	1	1
315	1	1	2	5	2	2	2	1	1	1	2	2	2	2	1	2	1	3	2	0		2	0		
316	1	2	2	3	2	2	2	2	2	2	2	2	2	2	2	2	2	3	2	0		2	0		
317	1	2	2	8	2	2	2	2	2	2	2	2	2	1	2	2	1	3	2	0		1	5	1	1
318	1	1	3	5	2	2	2	1	1	2	1	1	2	1	1	1	2	1	2	0		2	0		
319	1	2	1	8	2	2	2	1	1	2	2	1	1	1	2	2	1	1	2	0		1	10	1	
320	1	2	1	4	2	1	2	2	1	2	2	2	2	2	1	2	2	2	1	3	1	1	3	1	1
321	2	1	1	8	2	1	2	1	1	2	2	2	1	1	1	2	1	2	2	0		2	0		
322	1	1	3	5	2	2	1	2	2	2	2	2	2	2	2	2	1	3	2	0		2	0		1
323	1	1	2	8	2	2	2	2	2	2	2	2	2	1	2	2	1	3	1	2	2	1	1	2	
324	2	2	1	5	2	2	1	1	1	1	1	1	1	1	1	1	1	1	2	0		2	0		
325	2	1	2	8	1	1	1	1	1	2	2	2	1	1	1	2	1	1	1	1	2	1	1	1	1
326	1	2	1	2	2	2	2	1	1	1	2	2	2	1	2	2	1	3	1	2	2	1	3	1	
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328	2	1	1	8	2	2	2	2	1	1	2	2	2	1	1	2	1	3	2	0		2	0		
329	2	1	3	5	2	1	2	2	1	2	2	2	2	2	1	2	2	2	2	0		2	0		
330	1	2	1	1	2	2	2	2	1	1	2	2	2	1	1	2	1	1	2	0		2	0		
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333	1	1	2	3	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	0		2	0		
334	2	1	3	8	1	2	2	1	1	2	1	1	2	1	1	1	2	3	2	0		2	0		
335	1	2	1	8	2	2	2	1	1	2	1	1	1	1	2	2	1	3	2	0		1	2	2	1
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338	1	1	3	7	2	2	2	2	2	2	2	2	2	1	2	2	2	3	1	1	2	1	2	2	2
339	1	1	3	7	2	2	2	2	2	2	2	2	2	1	1	2	2	2	1	3	2	1	5	2	3
340	1	1	2	8	2	2	2	2	2	2	2	2	1	1	2	1	2	3	1	1	2	1	1	2	3
341	2	1	3	8	2	2	2	2	2	2	1	1	2	1	2	2	2	2	1	1	2	1	2	2	2
342	1	1	3	8	2	2	2	2	2	2	2	2	2	1	2	2	2	3	2			2			1
343	1	1	3	8	2	2	2	2	2	2	2	2	2	1	2	2	2	3	2			2			1
344	1	1	3	8	2	2	2	2	2	2	2	2	2	1	2	2	2	3	2			2			1
345	1	1	2	5	2	2	2	2	2	2	2	1	2	1	2	1	2	3	2			1	5	2	2
346	1	1	2	2	2	1	2	1	2	2	2	1	2	1	2	1	2	3	2			1	4	2	2
347	2	2	2	5	2	2	2	2	2	2	2	1	2	1	2	2	2	1	2			1	3	2	3
348	1	2	1	4	2	2	2	2	2	2	1	1	2	1	2	2	2	1	2			1	4	2	3
	MS	G	Age	Q1	Q2	Q3	Q4	Q51	Q52	Q53	Q61	Q62	Q63	Q7	Q8	Q9	Q10	Q11	Q12	NFA	TFA	Q13	NCA	TCA	Q14
349	2	2	1	6	2	2	2	2	2	2	1	2	2	1	1	2	2	1	1	1	2	1	4	2	3

350	1	1	2	8	2	2	2	2	2	2	2	2	2	1	1	2	2	3	1	3	1	1	6	1	3
351	1	1	2	8	1	1	2	1	1	2	2	2	2	1	1	2	2	3	2			1	1	2	3
352	1	1	3	8	2	2	2	2	2	2	2	2	2	1	2	2	2	3	2			2			3
353	1	1	2	7	2	2	2	2	2	2	2	2	2	1	2	1	2	1	1	2	2	2			1
354	1	2	1	7	2	2	2	2	2	2	2	2	2	1	1	1	2	3	1	2	2	2			1
355	2	1	2	7	2	2	2	2	1	2	1	1	2	1	2	1	2	1	2			2			3
356	1	2	2	8	1	2	2	2	2	2	2	1	2	1	1	1	2	3	2			1	4	2	3
357	2	2	1	7	2	2	2	2	2	2	2	1	1	1	2	2	1	1	2			1	1	2	2
358	2	1	3	8	2	2	2	2	2	2	2	2	2	1	1	2	2	3	2			1	4	1	2
359	1	2	1	7	2	2	2	2	2	2	2	2	2	1	2	2	2	1	1	1	2	1	2	2	2
360	1	1	2	3	2	2	2	2	2	2	1	1	2	1	1	2	2	3	1	4	1	2			3
361	2	2	2	6	1	1	2	1	2	1	2	1	2	1	2	2	2	1	1	4	1	2			3
362	1	2	2	6	2	2	2	1	1	2	2	2	2	1	2	2	2	3	2			1	5	1	1
363	2	1	2	6	2	2	2	2	1	2	2	2	2	1	2	2	2	1	1	1	2	2			1
364	1	2	3	4	2	2	2	2	2	2	2	2	2	1	2	2	1	1	2			2			1
365	2	2	3	8	2	2	2	2	2	2	1	2	1	2	2	1	2	1	2			2			3
366	1	1	2	7	2	2	2	1	2	1	2	2	2	1	1	1	2	3	2			2			3
367	1	1	2	8	2	2	1	2	2	2	1	2	2	1	2	2	2	3	2			1	5	1	1
368	2	1	3	7	1	2	1	2	1	2	2	2	2	1	1	1	2	1	2			1	6	2	1
369	1	1	3	8	1	1	2	2	2	2	2	2	2	1	2	2	2	1	2			1	2	2	1
370	1	2	1	7	2	2	2	1	2	2	2	1	2	1	2	2	2	1	2			1	3	2	3
371	1	1	3	8	2	2	1	2	2	2	2	1	2	1	2	1	2	3	2			1	1	1	3
372	2	2	2	7	2	2	2	2	2	2	2	2	2	1	1	1	2	3	2			1	3	2	2
373	2	1	3	7	1	2	2	2	2	2	2	2	2	1	1	1	2	3	2			1	2	2	2
374	2	1	3	7	2	2	2	1	1	2	2	2	2	1	2	1	2	3	2			2			2
375	1	1	3	8	2	1	2	2	2	2	2	2	2	2	2	1	2	3	2			2			3
376	2	2	2	8	2	2	1	1	2	2	2	2	2	1	2	2	2	2	2			2			3
377	1	2	1	8	2	2	2	2	2	2	1	1	2	1	2	2	2	3	2			1	2	1	1
378	1	1	4	8	2	2	2	2	2	2	2	1	2	1	2	2	2	2	2			1	1	2	1
379	1	1	4	3	1	1	2	2	2	2	2	2	2	1	2	2	2	3	2			1	3	2	1
380	1	2	2	6	2	2	2	2	2	2	2	2	2	1	2	2	2	2	1	3	1	1	2	2	1
381	1	1	3	7	2	2	2	2	2	2	2	2	2	1	2	2	2	3	1	1	1	1	6	1	1
382	2	2	1	7	2	2	2	1	1	2	2	1	2	1	1	2	2	2	1	3	2	1	1	2	3
383	1	1	3	8	1	1	2	2	2	2	2	2	2	1	2	2	2	3	2			2			3
384	2	1	2	8	2	2	2	2	2	2	2	2	2	1	2	2	2	1	2			2			3
385	2	1	2	8	2	2	2	2	2	2	2	2	2	1	2	2	2	1	2			2			2

Note: For details of codes, see section 3.8 (data management and analysis plan) in Chapter 3

Appendix – E

List of Survey Response for Drivers

Abbreviations
Resp No.: Respondent Number
Ms: Marital Status
G: Gender
EB: Educational Background
LC: License Category
DE: Driving Experience
NA: Number of Accidents
TA: Types of Accidents
Note: For details of codes, see section 3.8 (data management and analysis plan) in Chapter 3.

	Ms	Age	EB	LC	DE	Q1	Q2	Q4	Q5	Q6	NA	TA	Q7
1	1	2	2	1	3	19	1	1	1	2			3
2	1	1	1	1	1	8	5	1	2	2			3
3	1	2	2	1	2	10	5	1	2	2			4
4	1	2	2	1	2	8	5	1	1	1	2	2	3
5	1	4	1	1	4	14	5	1	1	1	3	2	2
6	1	2	2	1	3	15	5	1	1	1	4	2	3
7	1	3	4	1	4	16	5	1	1	2			4
8	1	3	3	1	4	14	5	1	1	2			3
9	1	2	3	1	2	8	5	1	1	2			3
10	1	2	3	1	2	10	5	1	1	2			3
11	1	3	3	1	4	12	5	1	1	1	6	2	3
12	1	3	3	1	3	10	5	1	1	1	2		3
13	1	2	4	1	2	10	5	1	1	1			3
14	1	3	5	1	4	15	1	1	2	2			3
15	1	3	2	1	2	14	1	1	1	2			3
16	1	2	4	2	4	12	5	1	1	2			1
17	1	3	3	1	4	12	5	1	1	1	11	2	2
18	1	1	2	2	2	15	5	1	2	1	3	2	3
19	1	2	6	1	3	12	5	1	2	2			4
20	2	1	2	2	2	18	5	1	2	2			3
21	2	1	2	4	3	10	5	1	1	2			3
22	1	4	1	1	3	16	5	1	2	2	6	2	3
23	1	2	2	1	4	12	5	1	2	1	6	2	3
24	1	2	4	2	3	12	5	1	2	2			3
	Ms	G	EB	LC	DE	Q1	Q2	Q4	Q5	Q6	NA	TA	Q7
25	2	1	1	2	1	15	1	1	1	2	2		3
26	2	1	1	2	3	12	5	1	1	2			1
27	1	2	3	1	3	12	5	1	1	2			2
28	1	2	4	1	3	12	1	1	2	2			3
29	2	1	1	2	3	16	5	1	1	2			3
30	2	2	5	1	4	12	1	1	2	2			3