

INCLUSIVE URBAN TRANSPORT FOR VULNERABLE GROUPS: THE CASE OF DHAKA CITY

By

Dalia Rahman
17262011

A thesis submitted to the Department of BRAC Institute of Governance and Development
in partial fulfillment of the requirements for the degree of
Master of Development Studies

Brac Institute of Governance and Development
BRAC University
September 2019

© 2019. Dalia Rahman
All rights reserved.

Declaration

It is hereby declared that

1. The thesis submitted is my own original work while completing degree at Brac University.
2. The thesis does not contain material previously published or written by a third party, except where this is appropriately cited through full and accurate referencing.
3. The thesis does not contain material which has been accepted, or submitted, for any other degree or diploma at a university or other institution.
4. I have acknowledged all main sources of help.

Student's Full Name & Signature:

Dalia Rahman
17262011

Approval

The thesis/project titled “Inclusive Urban Transport for Vulnerable Groups: The case of Dhaka City” submitted by

1. Dalia Rahman (Student ID-17262011)

of Summer Semester, 2019 has been accepted as satisfactory in partial fulfillment of the requirement for the degree of Master of Development Studies on 03 September 2019.

Examining Committee:

Supervisor:
(Member)

Niaz Ahmed Khan, Ph.D. (Wales), Post Doc. (Oxford)
Professor and former Chairman, Department of Development
Studies, University of Dhaka
Senior Academic Adviser, BRAC Institute of Governance
and Development (BIGD), BRAC University

Program Coordinator:
(Member)

Niaz Ahmed Khan, Ph.D. (Wales), Post Doc. (Oxford)
Professor and former Chairman, Department of Development
Studies, University of Dhaka
Senior Academic Adviser, BRAC Institute of Governance
and Development (BIGD), BRAC University

External Expert Examiner:
(Member)

Dr. M. Abu Eusuf
Professor and Former Chairman, Department of
Development Studies, University of Dhaka

Departmental Head:
(Chair)

Dr. Imran Matin, Executive Director, BRAC Institute of
Governance and Development (BIGD), BRAC University

Ethics Statement

It is ethical to respect the privacy of respondents of this research. As well, because of confidentiality, some information which might directly or indirectly imply the personality of respondents was not documented and attached.

The fact is all information is kept in secret may not be enough without the participants' exclusive consent towards taking part in the research. Hence consent from all respondents was taken in the beginning of the study. The researcher has also told participants they have the right to refuse to answer to a few or all of the questions or to decide to take part in any manner in the research.

Abstract/ Executive Summary

Public transport system in any city has immense importance for city dwellers particularly for vulnerable groups, such as women, physically challenged persons, senior citizens and low-income groups who have less access to a personal vehicle and rely completely on public transport. Unfortunately, we do not have safe public transport in Dhaka city in general and for vulnerable groups in particular. Dhaka is characterised by both motorised and non-motorised transport using the same roads, maladministration, conflict of jurisdictions and fragile coordination among various government authorities and agencies, which lead to unbearable and terrible traffic bottleneck and unpredictable delays. Nowadays, cities are at the heart of economic growth and centre of all modernizations and empowerment and are the key to accomplish the sustainable development goals (SDGs). Thus the transport system of Dhaka has to be a multi-modal, well-articulated and equipped with the best features that can be inclusive and complement one another.

Keywords: Dhaka; Inclusiveness; Urban Transport; Vulnerable Groups; SDG

Dedication

I dedicate this thesis to my little daughter Junainah Islam Aaeedah. You have made me stronger, better and more fulfilled than I could have ever imagined. I love you to the moon and back.

Acknowledgement

I am grateful to all of my well-wishers and academic mentors for their support and making this dissertation successful. I am grateful to Allah for the good health and wellbeing that was necessary to complete this work.

First of all, I would like to express my sincere gratitude to my respected supervisor Professor Dr. Niaz Ahmed Khan, (Professor & Senior Academic Advisor, BRAC Institute of Governance and Development, BRAC University) for his continuous support of my research. His patience, inspiration, keenness and immense knowledge always encouraged me to reach this stage of my study. His direction helped me throughout the writing of this thesis. I am grateful to him not only for his incredible academic support, but also for giving me the opportunities to complete the thesis. Beside my supervisor, I wish to thank my co-supervisor Professor Dr. Mohammed Abu Eusuf, (Department of Development Studies, University of Dhaka) for his comments during the analysis and write-up process which enhanced my clarity as the progression of the report.

I am very much grateful to BRAC Institute of Governance and Development, BRAC University for supporting me to finalize my paper. I would like to express my genuine gratefulness to all of my friends who always extended their cooperation to complete this study. I would like to thank all the people who assisted me during the survey. Similarly, I am grateful to all respondents who I interviewed for giving their valuable time, insights and information regarding the research topic.

I would also like to thank my family members for all their patience and encouragement.

Dhaka, September, 2019

Dalia Rahman

Table of Contents

Declaration.....	ii
Approval	iii
Ethics Statement.....	iv
Abstract/ Executive Summary	v
Dedication	vi
Acknowledgement	vii
Table of Contents	viii
List of Tables	ix
List of Figures.....	xii
List of Acronyms	xiii
Chapter 1 Introduction.....	1
1.1 Background	1
1.2 Problem Statement	2
1.3 Why inclusiveness matters?	4
1.4 Objectives of the Study	5
1.5 Significance of the Study	5
1.6 Limitation of the Study	6
Chapter 2 Review of Literature.....	7
2.1 Analytical Framework	7

2.2 Transport System in Dhaka.....	9
Chapter 3 Methodology.....	21
3.1 Research Design.....	21
3.2 Research Participants	21
3.3 Data Collection	22
3.4 Sampling	22
3.5 Data Analysis.....	23
3.6 Ethical Consideration.....	23
Chapter 4 Findings and Discussion	25
4.1 Findings.....	25
4.2 Discussions	47
4.3 SDG 11 and Dhaka Transport System	49
Chapter 5 Conclusion and Recommendations	51
References.....	55
Appendix A.....	58
Appendix B	62
Appendix C.....	64

List of Tables

Table 1: Road network within Dhaka Metropolitan Development Plan (DMDP) area.....	11
Table 2: Types of roads in Dhaka city	12
Table 3: Modal share of trips with respect to income groups.....	14
Table 4: Bus fleet distribution by type of fuel in Dhaka city.....	17

Table 5: Distribution of routes by length	18
Table 6: Top ten location of overlapping routes	18
Table 7: Distribution of public bus companies by fleet size.....	19
Table 8: Summary of participants with vulnerable groups	25
Table 9: Bus did not stop at stoppage for vulnerable groups.....	26
Table 10: Prioritized seats for disabled and elderly passengers	27
Table 11: Bus helpers did not announce	27
Table 12: Buses come to a complete stop	28
Table 13: Available transport services exist for vulnerable groups.....	30
Table 14: Sensitivity training for transport personnel	30
Table 15: Discourtesy vulnerable groups	31
Table 16: Roads get flooded during rain.....	32
Table 17: Useful footpath	33
Table 18: Roads and streets are accessible for vulnerable groups.....	34
Table 19: Tangible guideways, within transit terminals, stops and buses	35
Table 20: Pedestrian pathways with inclusive design.....	36
Table 21: Station/stops restroom is inclusive	37
Table 22: Vehicle design with braille prints	38
Table 23: Hand grips and plentiful vertical stanchions at doors and inside vehicles	39
Table 24: Adequate women-only services where female customers can travel safely without the risk of facing any hassle	39
Table 25: Women are sexually harassed when travelling.....	40
Table 26: Respondents' gender.....	41
Table 27: Easy access for women to get into the bus during office hours.....	41

Table 28: Women are safe to travel at night	42
Table 29: Established regulatory mechanisms to enforce safe vehicle operation	43
Table 30: Established traffic rules	44
Table 31: Police personnel for support	45
Table 32: Ticket price is fair	46

List of Figures

Figure 1: Basic features of inclusive transport	9
Figure 2: Location of Dhaka Metropolitan Area (a) in Bangladesh and (b) in Dhaka City Corporation (DCC)	11
Figure 3: Motorized vehicle- a growing trend in Dhaka.....	15
Figure 4: Growth of buses and minibuses in Dhaka	16
Figure 5: Available transport services exist for vulnerable groups	29
Figure 6: Transport system in Dhaka is inclusive.....	47
Figure 7: Collaboration among stakeholders to attain SDG	50

List of Acronyms

ADA	Americans with Disabilities Act
AU	African Union
BRT	Bus Rapid Transit
BRTA	Bangladesh Road Transport Authority
BRTC	Bangladesh Road Transport Corporation
DFID	The Department for International Development
DNCC	Dhaka North City Corporation
DTCA	Dhaka Transport Coordination Authority
FGD	Focus Group Discussion
GoB	Government of Bangladesh
KII	Key Informant Interview
LRT	Light Rail Transit
NMV	Non-Motorized Vehicles
RPGCL	Rupantarita Prakritik Gas Company Limited
SDG	Sustainable Development Goals
UN	United Nations
UNDP	The United Nations Development Programme

Chapter 1

Introduction

1.1 Background

Public transport system in any city has immense importance for city dwellers particularly for vulnerable groups, such as women, physically challenged persons, senior citizens and low-income groups who have less access to a personal vehicle and rely completely on public transport. City buses, trams, metro rails, subways, etc. are some of the examples of public transport available most of the cities in the developed and developing countries. The availability of public transport may also reduce number of personal vehicles which help traffic jam, air and sound pollution and many other difficulties that city dwellers face due to huge number of vehicles in the road.

There are varieties of public transports like buses, commuter train, sky-train, underground train, available in most of the developed and developing countries. They have slopes attached with the footpath in the bus or train station in such a way that a person sitting on wheelchair can easily ride on a bus or train comfortably. They care for each and every citizen of the country. These transports help people to travel the whole city without any hassle and are completely safe for everyone. Women are travelling alone even in the midnight fearlessly. Senior citizens and physically challenged people have proper and reserved seats for them and no one is bothering them regarding those seats. All these rules are being followed by every citizen and tourists in these countries as majority of the citizens are aware of the consequences for breaking rules. Unfortunately, we do not have safe public transport in Dhaka city in general and for vulnerable groups in particular. Though there is a provision to keep some reserved seats in the

city buses and trains for vulnerable groups such as, senior citizens, physically challenged and women which is hardly implemented in practice as there is no one to monitor it.

Government has taken some initiatives recently to improve the condition of public transportation system in Dhaka city. The construction of metro rail is going on, A/C bus named “circular” in some routes are already on board , water taxi services are running, the non A/C BRTC buses are providing services in the whole city.

Rich people usually do not mingle with lower income groups in other places but while using public transport, the lower and middle class travel together. This is the picture in London, New York or even in Bangkok, cities that have mass transit systems. The whole notion of inclusive public transport system is important for economic growth because it reduces transportation costs, and it assist in raising the savings rate of the nation (Sen, B. 2017). With well managed public transport, a large section of the middle and upper classes will have some incentive to invest in human capital or businesses rather investing in private vehicles.

1.2 Problem Statement

Urban public transport in Dhaka represents social divisions. Different groups in terms of income in Dhaka city are bluntly noticeable when we look at the public transport system in Dhaka or any other city in Bangladesh. The more a public transport system is inclusive, the more a society is democratic and the higher the level of equity and equality as people of all ethnicities and socioeconomic classes travel together without showing cast or class differences. This is why in highly developed countries like the United States, United Kingdom, Germany, commuters of all classes use public transport such as buses, metro-rails, and trains to reach their destination. For example, a Google official would go to his office in New York by using a public transport but that is not the case in Dhaka (Sen, B.2017).

Dhaka, the capital of Bangladesh, is one of the fastest growing megacities in the world. In 1971, the population was just 3 million which has boomed to 20 million today (Ministry of Planning, 2018). This unanticipated urban population growth has made this city even more densely inhabited than Mumbai, Tokyo, Shanghai, Bangkok, or any other major cities in the world. Dhaka's growth partly represents the progress of the Bangladeshi economy, which has grown at over 6 percent annually (Robert Gallagher, 2016). The transport system in this city, however, hasn't kept up, and Dhaka now has some of the worst traffic congestions in the world. Two main elements contribute to Dhaka's existing traffic is lack of planning and policies. In addition, wrong policy implementation, for example, the DEMU (Diesel Electronic Multiple Unit) train project failed to generate passenger enthusiasm as lack of comfort and other amenities like, suffocating inside environment, haphazard atmosphere during rainy season or high door height on board still kept the city dwellers away, construction works like, road repairing and digging works are being carried out in the capital is awfully slipshod. Elderly and female passersby along with small children frenetically negotiating the carelessly dug out roads are a common spectacle in Dhaka cause hindrances to smooth public movement, and an over-reliance on private vehicles. In the Dhaka city, though, there are 33 times more private cars than public buses, private cars responsible for only 13 percent of commuter transportation, while public buses are carrying 49 percent of commuters (Robert Gallagher, 2016). Currently, the usual traffic speed within the Dhaka city is 6.4 kph, but if the current growth of vehicle expansion continues at its existing rate, provided there will be no big push in the public transport sector, the average traffic speed might decrease at 4.7 kph by 2035 which is almost as slow as walking (The Daily Star, 2016).

Around 8,000 buses were there in Dhaka city in 2018 (BRTA, 2018). Most of these buses are not suitable and fit to run in the city. Only approximately 2,600 buses can be repaired and

upgraded while the rest are totally unfit for the capital city (The Daily Star, 2018). The existing public transport services in Dhaka city are far below the minimum standard than the other cities, for example, in Bangkok or Mumbai what city dwellers are getting. Not only most of the buses in Dhaka are unfit but also the drivers and helpers are unqualified for running vehicles. They are also engaged in feuds for passengers that lead to deadly accidents.

In addition, the demographic of the public transport with narrow doors, steep door stairs and congested seats with inadequate leg space make the bus rides a terrible experience to all commuters including women, physically challenged people and senior citizens. Government policies for more and more roads, fly-over and street constructions have undoubtedly failed to cope with ever increasing transport demand from rapid urbanization.

Thus the transport system of Dhaka has to be a multi-modal and well-articulated one, and equipped with the best features of all modes of transportation system that can be inclusive and complement one another.

1.3 Why inclusiveness matters?

Inclusive urban transport matters for at least three reasons:

- Inclusive urban transport creates job opportunities for urban poor, and can facilitate safe accessibility for women, differently able, and elderly persons. Inclusive public transport, integrated services and ticketing can improve affordability and convenience so that the poor can manage their long complex journeys to their destinations (Rehabilitation Council India, 2014). Investment in safety and security services with adequate washroom facilities can make transport systems more accessible for women. For elderly persons and persons with disability, suitable transport system would bring access to all (UNDP, 2010).

- Inclusive urban transport can help to mitigate the negative consequences of traffic congestion and unplanned city growth that lacks safety (Rodrigue, J-P, et.al, 2009).

1.4 Objectives of the Study

To explore the nature and extent of inclusiveness in urban public transport system in Dhaka city with a particular focus on vulnerable groups i.e. women, elderly persons, poor and people with disabilities.

In particular it will explore following research questions:

- What are the existing physical measures to ensure accessible, available, acceptable, affordable and safe urban public transport system in the Dhaka city?
- What are the steps to ensure maximum accessibility of transport system suitable for women, senior citizen and people with disabilities in transport system of Dhaka?
- Does regulatory mechanism promote inclusiveness in urban public transport system?

1.5 Significance of the Study

This study enables researchers, policy makers and practitioners to examine barriers to inclusive urban transport that vulnerable groups (poor, women, people with disabilities and senior citizens) face and help urban planners, transport companies and community organizations to design new transport infrastructures and services more inclusive to vulnerable groups.

Thus, in particular it will shed light on few goals and sub goals of SDG and New Urban Agenda including SDG sub goal 11.2 which aims to ‘provide access to safe, affordable, accessible and sustainable transport systems for all by 2030, and improve road safety, notably by expanding

public transport with special attention to the needs of those in vulnerable situations such as women, children, persons with disabilities and older persons (UNDP, 2016).

Therefore, by focusing on improving accessibility and safe transport system in one hand this research will focus on broader aspect of increasing chances of finding decent work and thus reducing poverty and on the other hand enhancing participation in the labour force to support economic growth.

1.6 Limitation of the Study

With the motive that the existing problem at hand is more challenging in Dhaka the researcher decided this city to be the study site. However, a better picture would have been obtained if other cities had been assessed. Thus, the study lacks less coverage and broader context.

The study also lacked focusing on vulnerable groups. In fact, people with multiple disabilities including physical disability, women, senior citizens and poor were included in the study. So, other city dwellers were excluded in this research.

During data collection one of the strong challenges was reaching respondents particularly the drivers and helpers. Given the shortage of time and inadequate budget the researcher was in pressure to reach the study population regularly. Besides, some of the participants from government agencies were unavailable and busy on their post because of work load they have.

Moreover, the research would have been demonstrated more applicability if all parts of Dhaka city and respondents representing the study population were reached.

Chapter 2

Review of Literature

2.1 Analytical Framework

The word 'Inclusion' is perhaps best explained in terms of its opposite word 'Exclusion' (AU, 2010). To be excluded meaning unable to access the opportunities in life. Public transport system has played key role in tackling exclusion by providing people the opportunities to get the jobs, services and social networks to which everyone should be entitled (ADA, 2006). Obviously, only the provision of proper and inclusive transport alone cannot solve the complex form of situations that lead to the provision of exclusion, however, it is an important instrument in ensuring people the ways to be connected to the wider world and the opportunities it has to offer. Transport can help people in terms of getting into the jobs, education and activities that help them to move forward and improve their long term prospects (Denzin NK, Lincoln YS, 2000). A lack of public transport leave people deserted and cut off from all possible opportunities and therefore causing vulnerable to social exclusion.

People who are at particular risk of being excluded includes (DFID, 2003):

- People without a car: Majority of the people do not have access to a private car and must rely primarily on public transport to roam around.
- Low income people: Rely on public transport where transport fares can be excessively high.
- People with physical impairments or senior citizens who may need extra support or design features to be able to use public transport effectively.
- Senior citizens who may no longer be fit, or feel able, to drive or be able to afford to run a vehicle.

- Poor people, for whom public transport is a primary means of getting around, mostly when the journey is not suitable for walking.

Inclusive transport has four basic features (Figure 1). These are illustrated below:

Transport Accessibility

- Accessibility of routes to and from transport centers (Marriott, A., 2007).
- Vehicle accessibility features may be fully utilized in practice.
- Vulnerable people have certainty around whether every stage of their journey will be accessible (Directgov, 2011).

Transport Affordability

- Bus fare is reasonable, so low income people can enjoy public transport (Emmett, T., 2006).
- Tickets for commuters in transport system are also fairly reasonable (Gleeson B., 1999).
- City corporations and different agencies work together to make public transport more cost effective for low income people and vulnerable groups.

Transport Acceptability

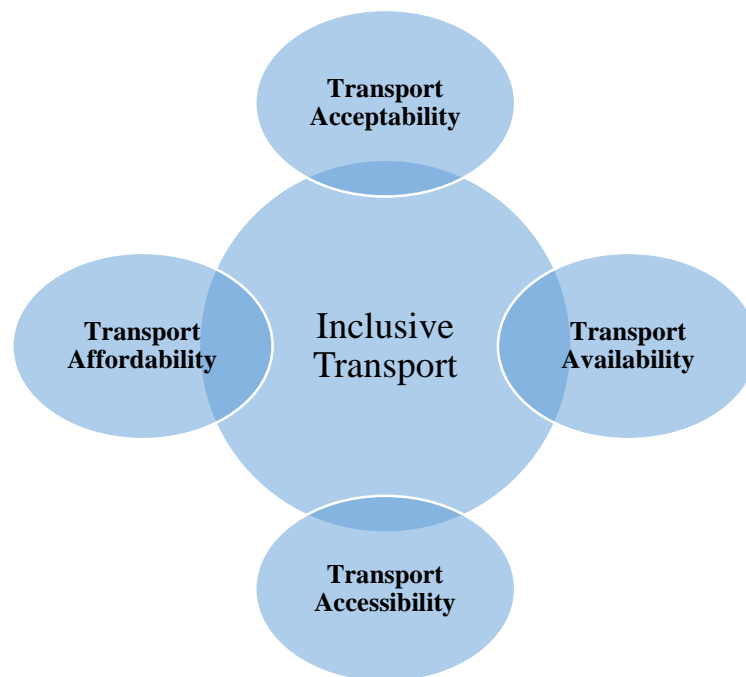
- Vehicles are available for passengers and less waiting time (Lundebye, S., Svensson, H. and Dotson, E., 2011).
- Bus commuters have high level of satisfaction with safety and security about the service in city areas (Kottenhoff, K., 2012).
- Vulnerable groups feel safe in public transport (Indian Government, 1995).

Transport Availability

- Most of the people including vulnerable groups have easy reach of basic bus service and key amenities (Odufuwa, 2007).

- The amenities people can get by public transport are satisfactory (Longtree, 2010).
- Public transport personnel and bus service have been fast to respond to the needs of passengers (Pane, 2010).

Figure 1: Basic features of inclusive transport



Source: Author's compilation, 2019

2.2 Transport System in Dhaka

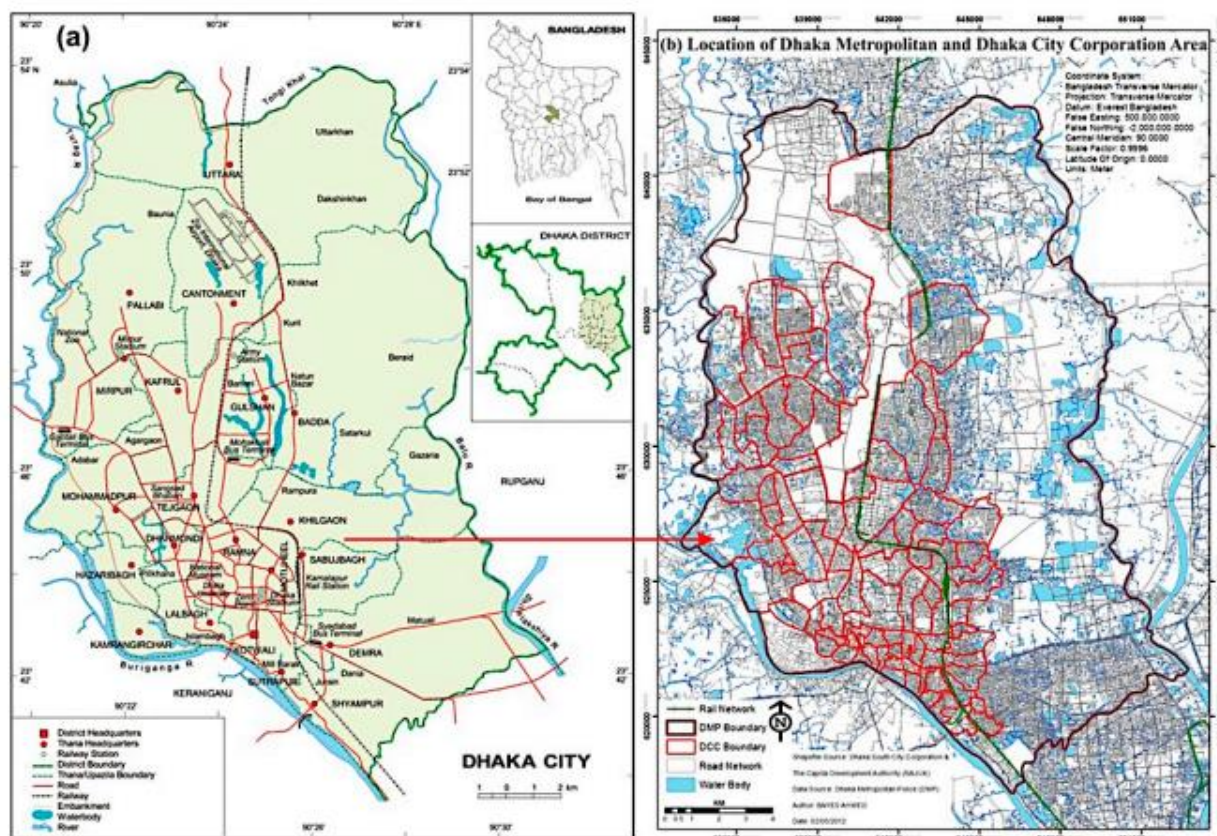
Since the independence of Bangladesh in 1971, Dhaka has been experiencing unanticipated population growth and economic development, transforming its status into the capital of a nation from a mere provincial capital. Dhaka is one of the seven growing megacities in the world where urban population growth higher than 2.4% in between 1975 to 2015. Nonetheless, because of lack of well-integrated planning and execution of decisions especially since 1990 when democratic government reinstated, Dhaka (Figure 2) has ranked a position in the list of most unlivable cities in the world several times (World Bank, 2016).

One of the major concerns of Dhaka city is its public transport system. The city is specially recognized for its incessant traffic grid locks and severe lack of traffic discipline. Like every other growing megacities in the third world countries, speedy growth of urban population and development works, ballooning low income groups, poor parking facilities, lack of civic sense and extreme inequality of city dwellers are among the fundamentals of transport problems in Dhaka.

Because of high growth of vehicular movement, Dhaka roads are always stuck with traffic congestion which deteriorates the city traffic system. This long standing situation is basically due to lack of insufficient road space, unplanned road network and human based traffic control system. Among the prevailing public transport system, particularly public buses are considered as the least desirable mobility option for vulnerable people, specifically in terms of dependability, coziness, rapidity and security.

Figure 2: Location of Dhaka Metropolitan Area (a) in Bangladesh and (b) in Dhaka City

Corporation (DCC)



Source: (a) Banglapedia, National Encyclopedia of Bangladesh, 2014, and (b) the Capital Development Authority (RAJUK), Dhaka, Bangladesh, 2014.

Road Network

Road network of Dhaka city is poorly configured with a very limited number of feeder roads and main roads. The characteristics of road artery in Dhaka city planned and constructed by different government agencies are provided in the below table (Table 1).

Table 1: Road network within Dhaka Metropolitan Development Plan (DMDP) area

Type of Roads	Length (km)	%
Primary (Primary roads are defined as road having bus bay, footpath etc.	200	6.7
Secondary	110	3.7
Feeder	152	5
Other narrow roads	2540	21
Total	3002	84.6

Source: Author's compilation, 2019 (The data articulated from documents available in the BRTA website)

Only 10.4% roads are perfect for proper vehicular movement (DTCA, 2018). Feeder and connector roads are appropriate as transit corridors, but there are only 30% of roads available for that service which is approximately 400 km only (Table 2).

Table 2: Types of roads in Dhaka city

Type of Roads	Definition	Length (km)	Percentage
Primary	Minimum of 31m wide, 6 lanes of 3.25m, footpath and median	68.45	5.29
Secondary	Minimum of 25.50m wide, 4 lanes of 2.5m, 2 NMV lanes of 2m wide, footpath and median	108.20	8.37
Connector	Minimum of 22m wide, 2 lanes of 3.25m each, 2 NMV lanes of 2m wide, footpath and median	221.35	17.12
Local	Minimum of 8.75m wide, 2 lanes of 1.36m and footpath (1.5m each way)	573.75	44.37
Narrow	Minimum of 4.5m wide with 2 lanes of 1.36m	321.27	24.85
Total		1,293.02	100.00

Source: Author's compilation, 2019 (The data was articulated from documents available in the BRTA website)

Moreover, the road space is also shared by Non-Motorized Traffic (NMT) for example, bicycles, rickshaws, vans, push carts etc. and sometimes priority of public buses become suspended when they compete for road space with other modes of transportation.

Modal Share

The existing traffic situation is deteriorated by the sharing of this insufficient road space by both motorized and non-motorized traffic and vehicles with different characteristics, for example, bicycles; flat-topped rickshaws; horse-drawn carriages, CNGs, human haulers, vans and rickshaws etc.). The survey conducted for ‘Clean Air and Sustainable Environment’ (CASE) project acknowledged features are as follows:

- Large size public buses and mini buses comprise 9.7% of the total vehicle mix (DNCC, 2018)
- Of all vehicles, rickshaws and vans comprise 28.4% (BRTA, 2018);
- CNGs (36.8%) and cars/ light vehicles (43%) comprise a considerable part of all motorized vehicles;
- Though public buses constitute a small portion (9.7%) of the vehicle mix but buses accounted for carrying 77% passengers (BRTA, 2018).

Table 3 illustrates modal share (in terms of trips) by city dwellers particularly by different income groups. The table demonstrates that low income people typically commute on foot (73%), whereas for most of the middle income people (59%) preferred rickshaw for their mobility. The low income and middle income people mainly use public transport services in Dhaka, which is an encouraging indication for city planners. The importance of walking,

rickshaws and public buses are obvious as they provide service for almost 97% of Dhaka people.

Table 3: Modal share of trips with respect to income groups

Income Group	Proportion of Income Groups	Modal share			
		Walk	Rickshaw	Transit	Motorized
Low (<12,500)	48	73	38	41	14
Medium (12,500-55,000)	49	26	59	56	66
High (>55,000)	3	1	3	3	20
Total	100	100	100	100	100

Source: Author's compilation, 2019 (The data was articulated from documents available in the DTCA website)

Usually, only very few in the lower quintile people, for example, day laborers, small vendors, garments workers etc.) can afford bus fares of sitting public buses services nowadays, although most of their trips are short, forcing them to walk, resulting lower levels of movement and accessibility.

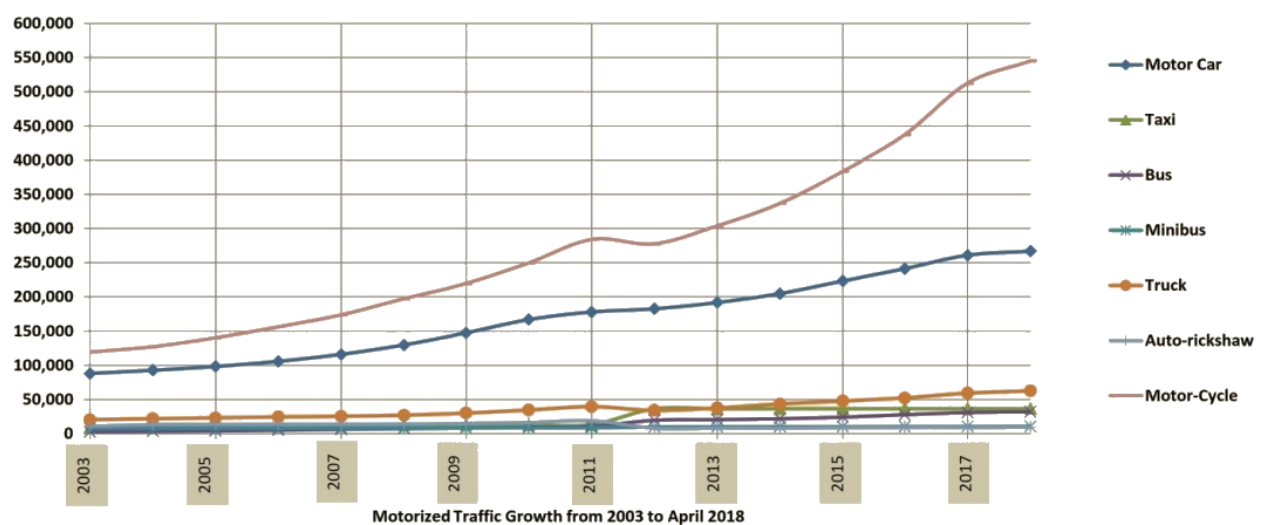
Vehicular Growth

Rapid urbanization, economic development paired with poor public transport infrastructure and strategies implementation has created a situation where private cars and motorbikes are gradually essential for the middle class and upper class people to roaming around the Dhaka city because of safety and security reason. Moreover, with the increasing number of non-motorized vehicles, the absence of a well-organized public transport system and ineffective and manual traffic control system enhances the traffic congestion and deteriorate sound pollution, air pollution, and personal security issues. In April, 2018, number of registered

motorized vehicle stands at 1,255,402 which was only 303,215 in 2003 (a fourfold rise in 15 years). More than 36% of all registered vehicles in Bangladesh are registered in Dhaka (total 3,419,884 in Bangladesh) (BRTA, 2018).

The worrying trend is that though the number of buses and minibuses remained the same or decreased a little, the demand curve for private vehicles such as cars and motorbikes almost four folded. Public transports via public buses have grown at an insignificant rate even if the demand for public transport service is increasing. Motorbikes and private cars comprise approximately 54% and 26% of total motorized vehicles respectively.

Figure 3: Motorized vehicle- a growing trend in Dhaka

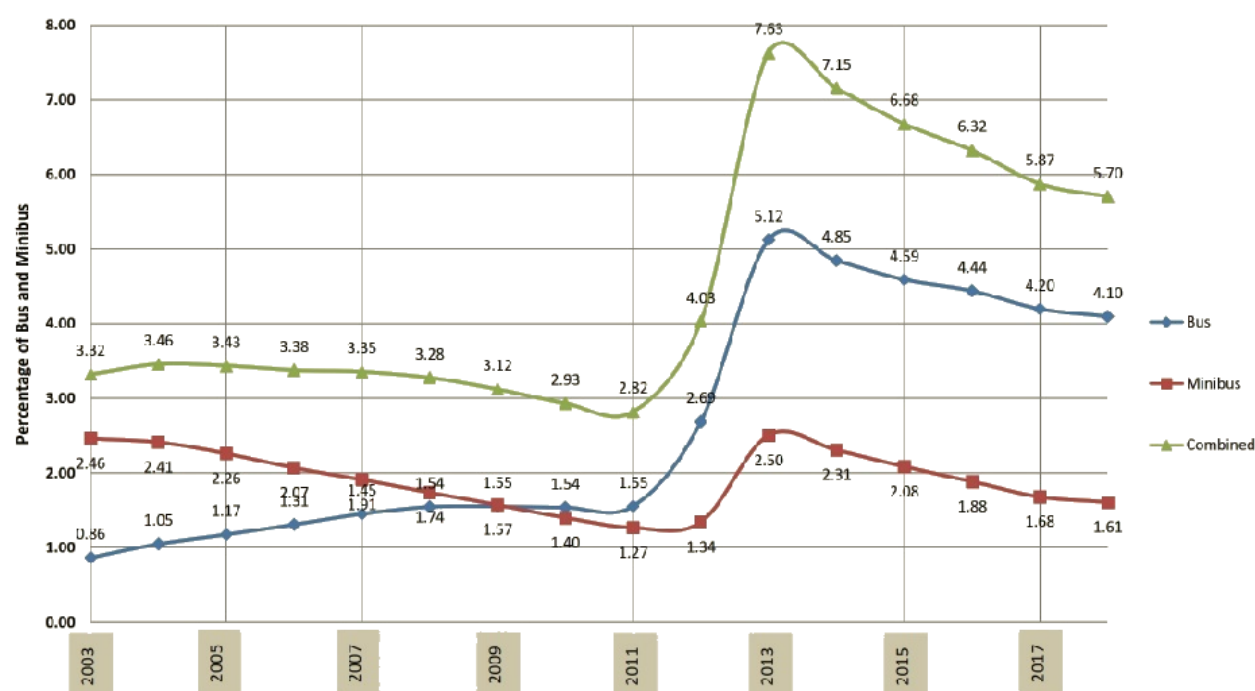


Source: Author's compilation, 2019 (The data was articulated from documents available in the BRTA website)

Present Situation of the Bus Service

As on April 2, 2018, total 31,922 buses and 10,441 minibuses registered in Dhaka (BRTA, 2018) which constitutes only about 5.7% of total motorized vehicle. Despite the number of large buses and minibuses increased in the last 5 years (hovering around 5%-7% of total traffic), the number of bus fleets have been declining gradually (Figure 4) which demonstrate increasing supply cannot cope with the huge travel demand. Salient features about Dhaka's bus service and fleet are presented in the below figure.

Figure 4: Growth of buses and minibuses in Dhaka



Source: Author's compilation, 2019 (The data was articulated from documents available in the BRTA website)

Though the number of buses and minibuses has increased noticeably, they are insufficient to meet the demand. Most of the newly registered vehicles are CNG (Compressed Natural Gas)

converted, primarily due to spiraling imported fuel prices. There was a government initiative to make all government vehicles CNG-fuelled to reduce air pollution and crude oil import. With the help from development partners, ‘Dhaka Clean Fuel Project’ by Rupantarita Praktik Gas Company Ltd., encouraged and helped convert vehicles from octane or diesel driven to CNG driven.

The data tabulated in Table 4 from the period of 2008-2010 demonstrates that though large number of heavy duty vehicles moving in the city is CNG driven but there are still huge chunk of diesel driven vehicles left (RPGCL, 2012).

Table 4: Bus fleet distribution by type of fuel in Dhaka city

Type of Buses	Number	%
CNG driven	1,178	25.66
Diesel driven	439	9.56
CNG driven minibus	548	11.94
Diesel driven minibus	2,425	52.83
Total	4,590	100

Source: Author’s compilation, 2019 (The data was articulated from documents available in the RPGCL website)

The public bus fleet of Dhaka city is not very old as the government banned buses older than 20 years in 2002 and public transport owners had to launch new buses on the road in that time (as seen in Figure 2), but due to poor operations and maintenances, insufficient technology support, mismanagement, unavailability of quality workshop facilities are the central to their substandard condition and buses are look like very scratchy. Moreover, the initiation of CNG driven three wheelers and support from the government for the conversion of octane and diesel driven buses to CNG driven made an impact on environment since 2003.

Table 5 demonstrates that about 70% of the route length is within 11 to 30 km, which crisscrossed the city by north-south direction mostly. These routes network make spider net in the city and serving the passengers moderately well.

Table 5: Distribution of routes by length

Route length (km)	Number of routes	%
<10	1	0.97
11-20	39	37.86
21-30	31	30.10
31-40	17	16.50
41-50	5	4.85
51-60	7	6.80
>71	3	2.91
Total	4,590	100

Source: Author's compilation, 2019 (The data was articulated from documents available in the DTCA website)

However, the facts state that there are redundant and intional overlapping of routes, with the only aim of profit maximization and operational advantages by the public bus companies (BRTA, 2017), as observed in Table 6.

Table 6: Top ten location of overlapping routes

Location	Number of routes overlapping	Number of permits issued to pass through
Paltan	56	2,337
GPO	50	1,889
Motijheel	59	1,838
Shahbag	48	2,203
Press Club	43	1,847
Gulistan	41	1,368
Airport	36	1,767
Jatrabari	35	1,703
Abdullahpur	34	1,551

Mohakhali	33	1,339
-----------	----	-------

Source: Author's compilation, 2019 (The data was articulated from documents available in the BRTA website)

Most of the public bus companies in Dhaka city are predominantly small and medium enterprise sort of, approximately 70% of the owners have only 11 to 30 buses, in the Table 7.

Table 7: Distribution of public bus companies by fleet size

Fleet size	Number of companies	%
1-10	2	2.67
11-20	21	28
21-30	31	41.33
31-50	14	18.67
51-70	4	5.33
71-99	1	1.33
100-150	1	1.33
More than 150	1	1.33
Total	75	100

Source: Author's compilation, 2019 (The data was articulated from documents available in the DTCA website)

The majority bus companies such as, *Balaka*, do not have individual ownership rather a group of individual person own either one or a few buses with the same name as *Balaka*. These individual persons form a group and run a public transport company together and share their business profit. For example, *Balaka* is a brand now, if any individual want to launch a bus by using the band name of *Balaka* then s/he contact with that group of people who run *Balaka* currently and put his/her money to them to run a bus then the owners' group launch the bus.

Cross Country Experiences

It is experienced that Dhaka, which is one of the most densely populated and congested cities in this universe, is moving toward becoming the world's largest slum if it fails to take immediate corrective actions. Its traffic gridlock not only incurs increased burden of expense, loss of valuable time and psychological pressure, but also poses a serious threat to our socioeconomic development and sustainable environment (Strategic Transport Plan, 2005).

The Japanese system of urban transportation by buses and rail network with its medium-range, high-speed railway, is a model for all to replicate. Japan's mass transit systems are the jealousy of the world: fast, clean, frequent, and prompt. They are the burning example to the other nations of what can be achieved when government, business and science make synergy for the benefit of their citizens (Rahman S., 2018).

South Korea, Singapore, Malaysia and Taiwan have also adopted modern urban transport system. Singapore is one of the best examples of modern urban transport systems and Bangkok as well. To facilitate the rapid urbanisation of Manila, light rail transit (LRT) is being expanded with the active participation of the private sector together with public sector. The two most rapidly growing nations of Asia, China and India, have introduced bus rapid transit (BRT), urban rail network, particularly the metro rail in many of their big cities in consideration of its capacity to cope with long-term demand (Morshed A., 2010).

It is estimated that by 2024, the population of Dhaka city will be 36 million with around 70 million person commute a day (Strategic Transport Plan, 2005). To carry this huge load and considering the long-term return on investment (RoI), a heavy-rail based metro (subway) system like, in New Delhi would be perfect for Dhaka city.

Chapter 3

Methodology

3.1 Research Design

In this study both quantitative and qualitative research methods were employed. During quantitative study the main focus was on the vulnerable population of Dhaka city. Since the issue of inclusive transport in Dhaka depends on the physical and social barriers, this research design helps to explore the richness, depth, and complexity of the issue based on interpretation. In such instance identifying phenomena and understanding how they are perceived by the respondents in a situation is an important aspect. In doing so, the researcher depended on phenomenological qualitative method for this study purpose.

3.2 Research Participants

In this study the main research participants are people of vulnerable groups. However, to enrich the study, participants from government and nongovernment institutions were included. Participants of government institutions were selected from the Ministry of Transport, Dhaka Transport Co-ordination Authority, and City Corporations. The other participants were selected from public transport service providers. Participants from government and private institutions were selected based on the issues they were facing.

3.3 Data Collection

In this research, data from both primary and secondary sources were used. Structured interview, key informant interviews and focus group discussion methods were used as primary sources of data. These methods helped the researcher to dig out solid information about the issue by giving flexibility to elucidate unclear questions during interviews. The researcher has also referred to different books and policy and legal documents in order to supplement the study with secondary data.

In order to conduct interviews, key informant interviews, the focus group discussion, the researcher has developed three different questionnaires. The questionnaires for the interviews, key informant interviews and focus group discussions consist of structured and semi-structured questions. In all data collection process the researcher had taken notes.

3.4 Sampling

Selection of respondents who have adequate knowledge in Dhaka transport system was purposive. The researcher outlined vulnerable groups, experts and government officials related to this study as a criterion which is relevant to the topic.

Keeping this in mind, the researcher although initially intended to interview 70 participants, only engaged with 60 participants because of their availability during survey. Out of this number, 43 participants were interviewed and the remaining 10 participants were included in the focus group discussion. In addition 07 interviewed as key informants.

In the event of any individual's refusal to give interview, other respondent who is willing to be interviewed was chosen. Interviews were conducted on the basis of a pre-tested questionnaire for interview and checklist guideline for FGD and KII. Each interview took about 30 minutes. The reference period for the survey was 10-27 June, 2019.

3.5 Data Analysis

Quantitative data was edited, coded and computerized. Analysis was mostly done electronically by using SPSS. Tables and figures were done either manually and or exported from SPSS analysis page and respective website.

The researcher has used interpretive analysis method to analyze qualitative data. As described by Bernard (2000), interpretive analysis is a process by which the researcher continually interprets any raw data to understand their meaning and their directives. Therefore, qualitative or interpretive data analysis method was used in this study with which data analysis were simultaneously done during data collection.

3.6 Ethical Consideration

It is ethical to respect the privacy of respondents of this research. As well, because of confidentiality, some information which might directly or indirectly imply the personality of respondents was not documented and attached.

The fact is all information is kept in secret may not be enough without the participants' exclusive consent towards taking part in the research. Hence consent from all respondents was

taken in the beginning of the study. The researcher has also told participants they have the right to refuse to answer to a few or all of the questions or to decide to take part in any manner in the research.

Chapter 4

Findings and Discussion

4.1 Findings

Demographic Characteristics of Participants

Participants for the interview were selected from vulnerable groups, government officials, and private individuals who are policy makers, experts, users and engaged in giving transport service. Participants for the focus group discussion on the other hand were bus helpers, drivers, users, bus owners, and traffic police. The total number of participants in the interview, KII and the focus group discussion was 60. Among these number 43 participants participated in a face to face interview out of which 42 persons are those with physical impairment mainly including wheelchair and crutch users, and those with other impairments. From the total number of participants, 32 are male and 28 are female. 50 participants are above the age of 30. In relation to their occupation status 5 of them work in governmental institutions, however, 7 of them are employed in non-governmental organizations and private sector, 27 of them are engaging on business, and the remaining 21 are retired from services.

Table 8: Summary of participants with vulnerable groups

No	Participant Status	Gender		Age		Occupation		
		Female	Male	<30	>30	Service	Business	Retired
1	Wheel chair user	5	4	-	9	4	2	3
2	Crutch user	10	7	-	17	5	6	6
3	Other impairments	11	12	7	16	2	12	9
4	Older adults	1	7	-	8	1	4	3
5	Poor	1	2	3	-		3	
Total		28	32	10	50	12	27	21

Source: Survey, 2019 conducted by the author

Among the total participants of key informant interview 7 of them were selected from Ministry of Transport, city corporations, Dhaka Transport Coordination Authority, transport experts and private transport service giving individuals.

DHAKA TRANSPORT SYSTEM AND TRANSPORT SERVICES:

Bus stop at stoppage

In Dhaka city 53% respondents told that public transport didn't stop at bus bay, whereas 47% people told that bus did stop at stoppage. Usually in Dhaka city public buses stop at bus bay from where every passenger get on the buses. Details are stated in Table 9 below:

Table 9: Bus did not stop at stoppage for vulnerable groups

No	Participant Status	%
1	Strongly agree	24
2	Agree	23
3	NA	-
4	Disagree	13
5	Strongly disagree	40
Total		100

Source: Survey, 2019 conducted by the author

Seat for vulnerable groups

Only 6% respondents told that in Dhaka public buses reserve seats for disabled and elderly passengers (Table 10). One of the *Raida* bus drivers said in regret that, choosing to remain anonymous,

Although in our bus we have reserved six seats for women and children but no seats are reserved for physically challenged and older citizen. Sometimes we

cannot provide reserved seat for women and children due to heavy crowd. Government and bus owners must launch special services for them otherwise in regular services it is almost unmanageable.

Table 10: Prioritized seats for disabled and elderly passengers

No	Participant Status	%
1	Strongly agree	2
2	Agree	4
3	NA	-
4	Disagree	16
5	Strongly disagree	68
Total		100

Source: Survey, 2019 conducted by the author

Audible announcements at transit terminals

Table 11 indicates that almost all (93%) of the bus helpers or drivers did call out stops or transfer points when they reach the stop (especially assists passengers who are blind or with low vision).

Table 11: Bus helpers did not announce

No	Participant Status	%
1	Strongly agree	5
2	Agree	2
3	NA	-
4	Disagree	33
5	Strongly disagree	60
Total		100

Source: Survey, 2019 conducted by the author

Buses stop for vulnerable groups

57% Buses come to a complete stop at bus stops and remain stopped until passengers have entered and positioned themselves for their ride, whereas 43% buses take passengers when they are on the move (Table 12).

Table 12: Buses come to a complete stop

No	Participant Status	%
1	Strongly agree	23
2	Agree	34
3	NA	-
4	Disagree	33
5	Strongly disagree	10
Total		100

Source: Survey, 2019 conducted by the author

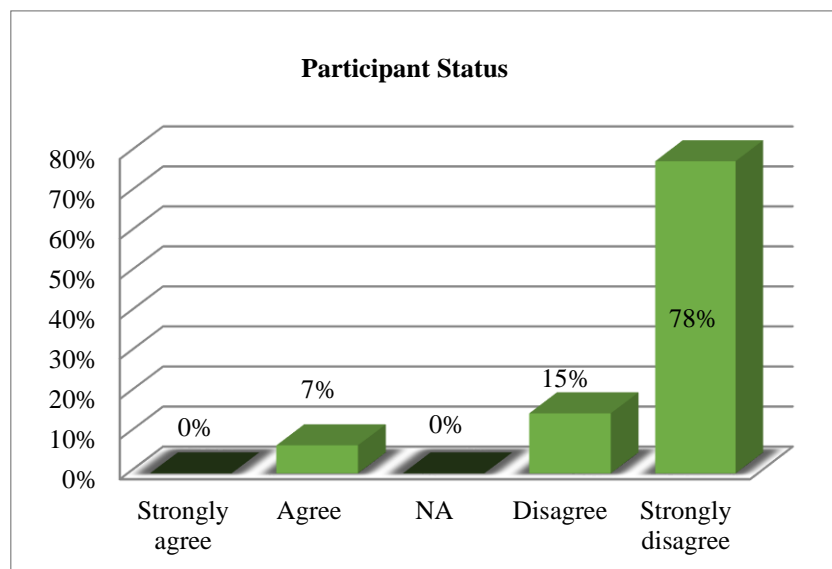
Transport services exist for vulnerable groups

In Dhaka city, 93% of the respondents told that there are no transport services available particularly for vulnerable groups which limit their mobility and accessibility (Figure 5). Transport service vehicles in Dhaka include buses, mini buses, human hauler and *legunas*. With these transport vehicles, the majority of the city dwellers commute to work places, markets, social gatherings such as recreation, education, health centers and so forth. All the vehicles which the researcher observed are designed without any assistive devices. Because of the absence of assistive devices, these vehicles appear totally inaccessible for physically impaired people, especially wheel chair and crutch users. Almost all vehicles are with high slope, most of them, especially, buses have stairs. In agreement with this one wheel chair user interviewee stated in anonymous that:

Every transport giving vehicles in Dhaka was designed only to accommodate the needs and interests of people who don't belong to vulnerable groups. For people like me boarding without the help of third party means a magic. This is because; buses usually have three or four stairs which is wheel chair inaccessible. I have never seen access ramps and lower floor buses or buses with any assistive instruments which help people like me can board independently.

Because of this discriminatory design, most disable people are discouraged from going out far from their neighborhood. If they are not moving around they may not have a chance to lead an independent life. Accordingly, they become dependent on their family. They always need family support to fulfill their basic needs.

Figure 5: Available transport services exist for vulnerable groups



Source: Survey, 2019 conducted by the author

DHAKA TRANSPORT SYSTEM AND TRANSPORT PERSONNEL:

Sensitivity training for transport personnel

Not surprisingly, only 4% of the Transport personnel (bus drivers, helpers and fare collectors) are being received sensitivity training regularly so that they interact sensitively with vulnerable groups. All these bus drivers, helpers and fare collectors are less educated and work under tremendous pressure. On the other hand, they don't know how to cordially handle a vulnerable person. Thus researcher observed that their behavior to vulnerable groups is very insensitive and sometimes cruel.

Table 13: Sensitivity training for transport personnel

No	Participant Status	%
1	Yes	4
2	No	96
	Total	100

Source: Survey, 2019 conducted by the author

Discourtesy by transport personnel

Bus drivers and helpers didn't do courteous behavior with vulnerable groups. Sometime they just ignored them to take them in the buses. 80% people told that they received discourteous behavior from them (Table 14).

Table 14: Discourtesy vulnerable groups

No	Participant Status	%
1	Strongly agree	64
2	Agree	16
3	NA	-
4	Disagree	12
5	Strongly disagree	8
	Total	100

Source: Survey, 2019 conducted by the author

DHAKA TRANSPORT SYSTEM AND ROAD NETWORK:

Flooded roads and pavements

In Dhaka city, 88% people told that roads get flooded during rain which causes lots of problems for them (Table 15). The pathways in this season become greasy causing, especially wheelchair/crutch users to fall and get trapped in deep hole. Available footpaths during the rainy season usually get covered by water and they become muddy and inconvenient. It would have been convenient if the roads and streets itself were free of water. However, because of poor drainage, roads and streets itself is covered by water and continue to be a challenge for this group of people.

Table 15: Roads get flooded during rain

No	Participant Status	%
1	Strongly agree	4
2	Agree	8
3	NA	-
4	Disagree	57
5	Strongly disagree	31
Total		100

Source: Survey, 2019 conducted by the author

An interview held with a male wheelchair user participant could be taken as evidence. He stated the following, choosing to remain anonymous:

In a bright sunny morning in 2017 I went to office. After work, it started to rain.

On my way home after the rain stopped, the road was covered with water. First I used main road to escape the water, but, after a passing car splashed water on me, I decided to move to my right to avoid any more splashing. However, the right wheel of my wheelchair trapped in a hole and I fell. I was lucky I was not

injured and many people helped me up, but I got entirely drenched. After this terrible incident, I have never left home during the rainy season.

Useful footpath

In Dhaka city 80% (Table 16) of the stair steps and footpath floor surfaces are filled with non-skid materials which are useful for vulnerable groups. However, the problem is most of the footpaths are seriously crowded by illegal street vendors, debris and other objects left on the streets limit the mobility of vulnerable groups. On an interview with an older adult female the challenge related to Illegal Street vendors revealed are shocking. She shared her experience, choosing to remain anonymous:

I was returning home after doing some groceries around Mirpur 2, which was very crowded as usual. All of a sudden, I saw street vendors started to run with their unsold goods as police officers were chasing them to seize their illegal products. While they were running, one of the vendors pushed me to the ground and left. Although I was looking for help at that time, I did not get any. Later, I was taken to hospital after suffering severe injury.

Table 16: Useful footpath

No	Participant Status	%
1	Strongly agree	15
2	Agree	5
3	NA	-
4	Disagree	26
5	Strongly disagree	54
Total		100

Source: Survey, 2019 conducted by the author

Accessible roads and streets

88% roads and streets are not vulnerable groups friendly (Table 17). Vulnerable groups cannot walk and move freely when they use roads, streets or footpaths. It is because of street vendors block the footpaths, illegal markets on the roads or damaged roads where wheelchair users cannot move freely. A motorized wheelchair user who can easily move within the Basundhara residential area expressed his concern that, choosing to remain anonymous,

Although I can move within Basundhara residential area, I cannot go to Gulshan 1 because there is no pavement that I can use; besides roads are always under construction for culvert placement or expanding. Pavements are also used by illegal vendors. So I have to depend on my relatives for buying something necessary. However, nowadays I can use online shopping for purchasing my necessary items.

Table 17: Roads and streets are accessible for vulnerable groups

No	Participant Status	%
1	Strongly agree	-
2	Agree	12
3	NA	-
4	Disagree	22
5	Strongly disagree	66
Total		100

Source: Survey, 2019 conducted by the author

DHAKA TRANSPORT SYSTEM AND INCLUSIVE DESIGN:

Guide ways

In transit terminals, stops and buses, 62% respondents told that there were no travel guidelines. Sometimes they cannot even find out a wash room. As well, there is no direction with arrow sign. Furthermore, even if there is an arrow sign, it is faded, dirty and not readable. One older

passenger came to Dhaka to visit his son's house and was waiting for bus in Abdullapur bus stand stated that in anonymous,

Although I'm an educated person, I didn't have any clue how to reach Kathalbagan from Abdullahpur. There is no sign or direction in any place that can help us to reach any destination. In each stop I had to ask a local person to get the direction. Sometimes people get irritated when I asked them for direction as they are busy.

Table 18: Tangible guideways, within transit terminals, stops and buses

No	Participant Status	%
1	Strongly agree	21
2	Agree	17
3	NA	-
4	Disagree	27
5	Strongly disagree	35
Total		100

Source: Survey, 2019 conducted by the author

Pedestrian pathways with inclusive design

78% Pedestrian pathways (narrow streets, lanes, *galli* path) are not serving the vulnerable groups which incorporate inclusive design (Table 18). Vulnerable groups are highly dependent on other people for getting around. Their social life, health care, and so forth depend on their convenient commuting from one place to another. Whatever the reason for their movement could be, movement from place to place entirely requires accessible transport environment. The role that accessible streets play in achieving mobility needs proper public transport system. Pathways can be seen as the main enabling factor for people with physical impairment, especially in the areas where the public transport vehicles totally discriminates them. The study has identified several problems specific to the inaccessibility of different pathways from the

data collected through interviews, KIIs and FGD, and based on the researcher's own observation in study areas. The inconvenience of the pathways environment seriously hinders their movement. The most challenging factors with the streets of Dhaka include:

- Damaged, unpaved, poorly maintained, and crowded footpath; and even absence of footpaths in some areas. This is evident in every corners of the city.
- Narrow streets, which is used by vehicles, other manually operated machines, and people. These pavements seriously affect vulnerable groups, especially, disabled and older adults.
- Construction of different roads and feeder roads. Lots of construction machineries, raw materials, and others equipment are left in the road for construction purpose. There might also be holes made to make or maintain the drainage of the main roads, but long being uncovered.
- Bad slope of the road. The road divider and footpaths in most places is with high slope hindering passengers with wheelchairs.
- Footpaths crowded by street vendors. Illegal street vendors, nowadays, are a bottle neck for the city. They make sidewalks very crowded and challenging for physically challenged people. For example, in new market area, it was once crowded with vendors, but now the road is free to move as they are being evicted from there.

Table 19: Pedestrian pathways with inclusive design

No	Participant Status	%
1	Strongly agree	7
2	Agree	15
3	NA	-
4	Disagree	40
5	Strongly disagree	38
Total		100

Source: Survey, 2019 conducted by the author

Inclusive restroom

91% respondents told that in bus station or in stop, restrooms are not inclusive for vulnerable groups. Rest rooms don't have ramp so wheel chair users cannot access rest rooms. One of the passengers who was going to Mymensing and was waiting for her bus in Mohakhali bus terminal told that, choosing to remain anonymous,

Because of my knee joint pain I cannot sit on squatting latrines but once I needed to go to a toilet in Mohakhali bus terminals, and although there was a high commode but there was no rail that I could hold to sit properly. As well, there was inadequate water supply and broken toilet seat.

Table 20: Station/stops restroom is inclusive

No	Participant Status	%
1	Strongly agree	2
2	Agree	7
3	NA	-
4	Disagree	64
5	Strongly disagree	27
Total		100

Source: Survey, 2019 conducted by the author

Braille prints

100% people are in favor of braille prints so it can assist those with visual impairments. In Dhaka city a visually impaired person cannot walk on the roads and buses move haphazardly and there are no facilities for them to understand. One older man with lack of vision stated that, choosing to remain anonymous,

When my vision was alright I went to Singapore and saw that there was braille print on the seats, hand grips and even on the roads but in Dhaka city it is beyond my expectation as we have very fragile transport system.

Table 21: Vehicle design with braille prints

No	Participant Status	%
1	Strongly agree	81
2	Agree	19
3	NA	-
4	Disagree	-
5	Strongly disagree	-
Total		100

Source: Survey, 2019 conducted by the author

Hand grips and vertical stanchions

100% people told that sufficient hand grips and plentiful vertical stanchions at doors and inside vehicles are useful so vulnerable groups can hold it but currently it does not exist in Dhaka transport. In city buses, lots of people travel standing. When buses suddenly break or use bumpy road passengers' bump into one another. One of the FGD physically challenged participants expressed that, choosing to remain anonymous,

Although I can walk and use CNG auto rickshaw, I could hardly use public buses because of lack of hand grips. In most of the public buses there are handle rod which very high that I cannot hold if there is no available seat, so if there are hand grips and vertical stanchions, it would be easier for us to ride on public buses.

Table 22: Hand grips and plentiful vertical stanchions at doors and inside vehicles

No	Participant Status	%
1	Strongly agree	92
2	Agree	8
3	NA	-
4	Disagree	-
5	Strongly disagree	-
Total		100

Source: Survey, 2019 conducted by the author

DHAKA TRANSPORT SYSTEM AND WOMEN:

Women-only services

In Dhaka city 100% people told that there is no adequate women-only services where female passengers can travel safely without the risk of being getting harassed by men (Table 22). As well, drivers, helpers and other passengers do not cooperate and interact improperly with passengers. The situation is more discouraging since drivers and helpers usually try to ignore the issues to help the female passengers. A female user pointed out that in anonymous:

Most of the time I encounter people who do not want to share a sit with me in a bus. One day when I got a seat beside a man, he was reluctant to give it as I am a female. Similarly, bus drivers and helpers do not want us to get on the buses. Most of them usually say 'sorry, please wait for another bus as the female seats are already taken'. The decision as to whether I want a ride even without a female seat is already taken by them. In fact, it is an excuse to refuse me entering the buses.

Table 23: Adequate women-only services where female customers can travel safely without the risk of facing any hassle

No	Participant Status	%
1	Strongly agree	-
2	Agree	-
3	NA	-
4	Disagree	34
5	Strongly disagree	66
Total		100

Source: Survey, 2019 conducted by the author

Sexual harassment

52 (87%) respondents told (Table 24) that women are sexually harassed while commuting which is horrible. In public transport, harassment includes verbal and non-verbal behaviors such as rude remarks, whistling, touching, pinching, groping and obstructing female commuters' way and so forth. One of the key informants told that, choosing to remain anonymous:

Women of all ages are subjected to different kinds of verbal and sexual harassment in public transport. Only a few incidents come to notice or reported to law enforcement agencies. Evening and night travels are most shocking. Neither the bus staff, nor other passengers show any respect for women in most of the cases.

Table 24: Women are sexually harassed when travelling

No	Participant Status	%
1	Strongly agree	44
2	Agree	43
3	NA	

4	Disagree	13
5	Strongly disagree	-
Total		100

Source: Survey, 2019 conducted by the author

If the response is disaggregated by gender then it is found that 100% female respondents express their concern in favor of sexual harassment that women are sexually harassed during commuting. On the other hand, 75% male respondent told that women are sexually harassed inside the public vehicles (Table 25).

Table 25: Respondents' gender

No	Participant Status	Number	%
1	Male	24	75%
2	Female	28	100%

Source: Survey, 2019 conducted by the author

Easy access for women

96% respondents told that women do not have easy access to get into bus during office hours (Table 26). One female interviewee in confirmation to this pointed out that, choosing to remain anonymous:

Waiting for a bus takes sometimes more than an hour and this problem is very serious during rush hours between 8 am-10 am, and 5 pm-7 pm (the time when people move to work, school, etc., and returns). Because of this reason I decided not to leave home between this time ranges.

Table 26: Easy access for women to get into the bus during office hours

No	Participant Status	%
1	Strongly agree	-
2	Agree	4
3	NA	-
4	Disagree	24
5	Strongly disagree	72
Total		100

Source: Survey, 2019 conducted by the author

Are women safe to travel at night?

Only 5% respondents told that women are safe to travel at night. A female interviewee stated, choosing to remain anonymous:

As a working woman living in this city, I can affirm that living in this city is awfully dangerous. From the shocks of sexual harassment in the public transport to the dangers that a woman is exposed to in her daily life is unbearable. The risks that a girl or woman faces depend on a number of factors (socioeconomic condition, location, age, and so on. It makes me think of the millions of women who have it much worse than me.

Table 27: Women are safe to travel at night

No	Participant Status	%
1	Strongly agree	-
2	Agree	5
3	NA	-
4	Disagree	6
5	Strongly disagree	89
Total		100

Source: Survey, 2019 conducted by the author

DHAKA TRANSPORT SYSTEM AND REGULATORY MECHANISMS:

Regulatory mechanisms to enforce safe vehicle operation

66% people told that there are established regulatory mechanisms to enforce safe vehicle operation (Table 28) but nobody practice that. The researcher observed that:

Although it is unpleasant, the truth is, in Dhaka, drivers and pedestrians are undisciplined and have no respect for traffic rules and regulations. Unlike the modern world, traffic is managed by policemen. In different important junctions policemen are unable to manage the traffic. Many of the city dwellers break the law and many do not even realize that they are doing something horribly wrong.

Table 28: Established regulatory mechanisms to enforce safe vehicle operation

No	Participant Status	%
1	Strongly agree	11
2	Agree	23
3	NA	-
4	Disagree	35
5	Strongly disagree	31
Total		100

Source: Survey, 2019 conducted by the author

Traffic rules

77% respondents told that the current traffic rules do not promote inclusiveness of all passengers. Architect Mubasshar Hussain, one of the key informants, told that:

In this city we do not have separate lane or pavements for wheelchair user or vision impaired people although we are claiming this city as megacity. There

is no privilege for senior citizens though they serve the nation for quite a long time. Women are not safe inside the public buses. Poor people cannot afford so-called get-locked services. Police personnel are not sensitive to the special passengers or passersby. Due to lack of inclusive facilities for vulnerable groups, this city is becoming a mega slum.

Table 29: Established traffic rules

No	Participant Status	%
1	Strongly agree	5
2	Agree	18
3	NA	-
4	Disagree	40
5	Strongly disagree	37
Total		100

Source: Survey, 2019 conducted by the author

Traffic Police for support

87% respondents observed that traffic police personnel didn't exist in stations, or in trains to support vulnerable groups (Table 29). Even if they exist they are not supportive to the vulnerable groups. One older adults told that, choosing to remain anonymous:

The other day I went to Mohakhali bus stand to go to Mymensingh. But I could not find the buses to Mymensingh, so I asked one of the duty polices if he could find my buses. His behavior was so rude and he didn't cooperate with me instead he started interrogating me.

Table 30: Police personnel for support

No	Participant Status	%
1	Strongly agree	-
2	Agree	13
3	NA	-
4	Disagree	32
5	Strongly disagree	57
Total		100

Source: Survey, 2019 conducted by the author

Institutional Deficiency

71% respondents told that there are no active government agencies who are working for inclusiveness in urban transport rather transport systems are going on haphazardly because of lack of coordination among them. The researcher observed that:

There are 23 government agencies responsible for Dhaka transport system including Dhaka City Corporations, Dhaka Metropolitan Police, BRTA, BRTC etc. The institutions which are linked to transport sector, in general, have weak and fragile structure. Lack of capacity and resources constraints seriously weaken their capability for good governance, comprehensive policymaking and implementation management. Political economy dimension, powerful vested interests and legal constraints further accelerate the problem. The manifestations of all these are reflected in the poor and malgovernance of the transport sector, the outcomes of which are loss-making state enterprises like BRTC, lack of proper investments in transport infrastructure, increasing corruption, worsening in the institutions of law and order, weak law enforcement affecting safety, security, environment, private sector participation, etc. Several ministries and government departments are

responsible for public transport sector are currently following a sectoral approach with almost no or very little coordination among themselves resulting lax policy implementation. The fundamental problem here is the lack of harmonization among numerous government agencies and the absence of a clear policy framework with regard to transport sector in the Dhaka city.

Table 31: Active government agencies for inclusiveness

No	Participant Status	%
1	Strongly agree	-
2	Agree	29
3	NA	-
4	Disagree	40
5	Strongly disagree	31
Total		100

Source: Survey, 2019 conducted by the author

Ticket fare is fair

Public transport system particularly bus services are branded as “local”, “sitting bus service”, “gate lock”, “sitting get lock”, “non stop”, “time controlled” and “counter service” etc. Bus owners charge higher fare even though those buses stop at almost everywhere on the way to their destination and ticket price is charged arbitrarily. One woman passenger stated that, choosing to remain anonymous:

All the sitting services are cheating service. They are making money at the cost of passengers’ expense. To collect the extra fare, bus companies are charging the commuters fares at their will by ignoring the government-set fare and use their self-regulated system. If government increases fuel price 1 taka/liter then

they increase fare as if price increase at 5 taka. On the other hand, if fuel price decrease in the international market then there is no evidence I haven't seen so far that price decreased. We are living in a very strange system.

Table 32: Ticket price is fair

No	Participant Status	%
1	Strongly agree	3
2	Agree	21
3	NA	-
4	Disagree	50
5	Strongly disagree	26
Total		100

Source: Survey, 2019 conducted by the author

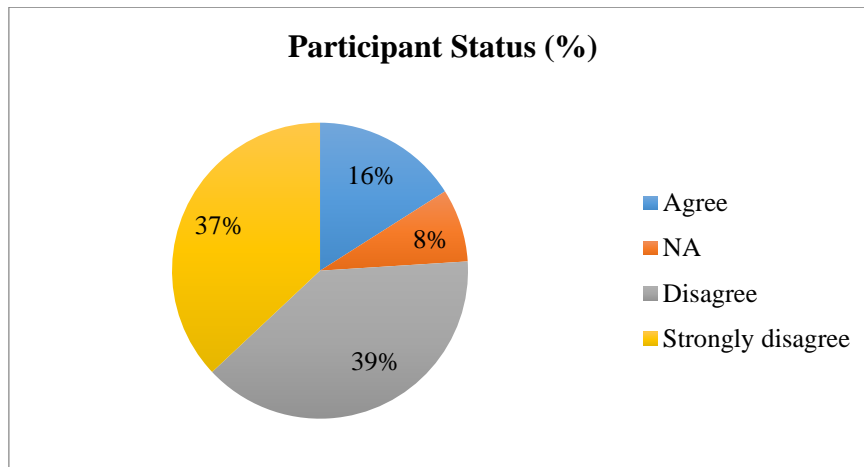
Is Dhaka transport system inclusive?

74% respondent told that transport system in Dhaka is not inclusive for all passengers. A male senior citizen interviewee discussed about the public transport, based on his own experience, choosing to remain anonymous:

I have two bad experiences because of the ill managed transport system. The first one happened while I was waiting for a bus to buy some medicines. When a bus arrived, there were a lot of passengers who were pushing each other to get in. At that time I along with other passengers with mobility problem faced severe problem just to get in. The other event took place when I was on a bus. I got a ride from the bus stop and there were few passengers, but after a while lots of passengers started getting on the bus and when they started pushing each other. Then I got pushed by someone and fell on the ground. It is very

challenging to get a ride on the buses in Dhaka. Not only they are inaccessible, they are also not enough in number.

Figure 6: Transport system in Dhaka is inclusive



Source: Survey, 2019 conducted by the author

4.2 Discussions

Like other developing cities, Dhaka is also leading toward urbanization. However, one of the consequences of this process is that Dhaka is facing extreme level socio-economic and environmental challenges because of severe traffic congestion. The geometric increase in population has resulted substantial travel demands as well as several transportation difficulties in Dhaka and therefore, public transport holds a major role in future growth and development of any uprising city.

Transport environment in Dhaka is characterised by mixed-modes of transports (both motorised and non-motorised) using the same roads, maladministration, conflict of

jurisdictions and fragile coordination among various government authorities and agencies, which lead to unbearable and terrible traffic bottleneck and unpredictable delays.

In addition, there are no effective footpaths. Though a 39 km long railway passes through the core city areas, due to policy limitations it has little influence to reduce Dhaka's transport congestion. Similarly, Dhaka is blessed with circular waterways, but it is not designed to serve the city dwellers yet.

Dhaka's transport is not inclusive at all as it doesn't show any indicators that can say in favor of it. Poor, older adults, person with disabilities and women have experienced serious problem in using public transport, that's why, 76% respondents was against inclusive status. This vulnerable people cannot move freely within the city. Actually, the situation of Dhaka is at a level that a normal person cannot even roam around with the way they wanted to. Transport system problems in Dhaka city that hinders inclusiveness are listed below:

- i. Narrow doors, high floors with steep steps and clogged-up seats with inadequate leg spaces make the public bus rides a nightmare to not only women and children but also other vulnerable commuters
- ii. Roads have not amplified that much compared to growing population of Dhaka
- iii. No transport signs painted in a bright contrasting color
- iv. Women are sexually harassed during travelling
- v. Transport design are not inclusive
- vi. No separate lanes for vulnerable groups
- vii. Insensitive transport personnel
- viii. Station/stops restroom is unclean
- ix. Ticket price are volatile
- x. Transport authorities have not provided adequate women-only services where female can travel safely without the risk of encountering men

- xi. Pedestrian pathways serving the public don't incorporate inclusive design (level pathways of adequate width, curb ramps serving wheelchair users and all other pedestrians, accessible bathrooms, etc.)
- xii. Pedestrian pathways are not free of obstacles and almost inaccessible
- xiii. Lax regulatory mechanisms to enforce safe vehicle operation by private and public sector transit operators
- xiv. Lack of coordination among government agencies who are working for inclusiveness of urban transport
- xv. There is formal or informal sensitivity training to transit personnel (including bus drivers, helpers and fare collectors) so that they will do cordial behave to them
- xvi. Police personnel observed in stations, parking spots, on trains are not supportive to vulnerable groups
- xvii. Transit terminals and stations don't have well-located signs with high-contrast large print to assist deaf and visually impaired passengers
- xviii. No prioritized seat for vulnerable groups

4.3 SDG 11 and Dhaka Transport System

Nowadays, cities are at the heart of economic growth and centre of all modernizations and empowerment and play a vital role in our everyday life and are the key to accomplish the sustainable development goals (SDGs).

Dhaka's urban transport system has to be a sustainable one that emphasizes the use of public transport and walking, and discourages the use of individual vehicles like private cars and motorbikes. In order to achieve Target 11.2 of SDG by 2030, Dhaka's transport system has to expand to a well-managed public transport system which can provide accessibility, affordability, availability and sustainability for all. Cities that are inclusive, safe, robust, and

sustainable require intensive policy support, coordination and investment options. Therefore, city-level actions will be a central part of sustainable development initiatives, where the Dhaka needs inclusive and sustainable urbanisation as a milestone in the path towards socio-economic development, as recognised by SDG Goal 11: Sustainable Cities and Communities. To do this all stakeholders must work together in a collaborative way so synergy will come. This could be displayed in a below chart.

Figure 7: Collaboration among stakeholders to attain SDG



Source: Author's compilation

If so then it will improve road safety and put special attention to the needs of vulnerable groups like, poor, women, people with physical challenges and older adults.

Chapter 5

Conclusion and Recommendations

Dhaka is perhaps one of the few growing megacities in this planet having improperly planned and disorganized public transport system. Dhaka currently poses a population density of about 43,000 people per square kilometer. As per projections, around 24 million and 35 million people will reside in Dhaka city in 2030 and in 2050 respectively. Thus if Dhaka needs to be survived, it must rearrange its public transport system by integrating a suitably planned and solid public transportation system.

Buses, minibuses, human haulers, legunas etc. are the cheapest public transport types available in the city are defined by very poor service delivery mechanism for vulnerable groups. Extended time for getting vehicles, lot of stoppage and intentional delays, overcrowded and long walks from the house or the work place to bus stops are a few of the key problems that passengers encounter every day. This unexpected situation leads to deterioration in terms of accessibility, service delivery mechanism, protection, coziness and operational efficiency and resulting increased expenditure, loss of valuable time, air pollution, sound pollution, psychophysical pressure, posing a serious threat to the economic growth of the city and the sustainability of its environment.

Due to insufficient road network and limited space for future expansion, only public bus services alone will not be able to meet the future transport demands as it increases rapidly. Government and stakeholders need to agree on an inclusive transport plan which can ensure the co-existence of different modes of transport. A strong political commitment and capable management will be required for proper implementation of transport policies and strategies in order to protect rights of the vulnerable groups.

Recommendations for making Dhaka city transport system inclusiveness:

Category	Description	Recommendation
Persons with Disabilities	Mobility and physical impairments, vision impaired, hearing impaired, cognitive or learning disabilities, psychological disorders (Disabled World, 2019)	a. Few seats have to keep for vulnerable groups. b. Introduce special bus services for them. c. Transport personnel, traffic police etc. will require regular sensitivity training so they can handle vulnerable groups with care.
Senior Citizen	People aged above 60 years (bdnews24, 04 December, 2017)	
Poor	People lived at or below \$1.90 a day (World Bank, 2015)	d. Roads, streets, pavements will be designed, constructed and maintained in a way so vulnerable people can move smoothly.
Women	A woman is an adult female human being	e. Design of vehicle, station, bus stop and other transport related amenities incorporate inclusiveness to support vulnerable people. f. Public buses must be stop at bus bay completely so vulnerable groups can get into that easily. g. Discounted fare for senior citizens and person with disabilities. h. Increase awareness among mass people about this issue.

		<p>i. Increase awareness among vulnerable groups about existing facilities provided by the government and other stakeholders.</p> <p>j. Nowadays considerable number of female passengers are commuting across the Dhaka city. To make their journey safe and secured, all stakeholders must play active role in this regard.</p>
Traffic System	Vehicles movement on the roads	To ensure hassle-free traffic in Dhaka, Intelligence Traffic System (ITC) needs to be introduced across Dhaka city.
Alternative Transportation	Different way of commuting other than roads	Circular water ways could be introduced in all water ways within the Dhaka city.
Bus Services	-	<p>a. To develop an inclusive transport system, an umbrella transport companies require to develop where existing transport owners will be incorporated and get their share.</p> <p>b. Qualified drivers and ticket collectors from the current bus service can be hired for the new bus service and entitled under a permanent pay-roll system.</p>

Coordination	-	Strong collaboration and cooperation need to increase among government departments.
--------------	---	---

References

- [1] Americans with Disabilities Act (ADA), *Standards for Transportation Facilities*. Adopted by the U.S. Department of Transportation, 2006. Available on <http://www.accessboard.gov/attachments/article/1417/ADAdotstandards.pdf>.
- [2] AU (2010), Continental Plan of Action for the African Decade of Persons with Disabilities 2010-2019
- [3] Bernard H.R (2000). *Social Research Methods: Qualitative and Quantitative approaches*. Thousand Oaks, CA: Sage Publication
- [4] Denzin NK, Lincoln YS (eds.). *Handbook of Qualitative Research*. London: Sage Publications, 2000.
- [5] Department for International Development (DFID) *Planning and access for disabled people: a good practice guide*, 2003, available at www.communities.gov.uk
- [6] Directgov (2011). 'About the Blue Badge Scheme', available at: http://www.direct.gov.uk/en/disabledpeople/motoringandtransport/dg_4001061
- [7] Emmett, T. (2006) Disability, Poverty, Gender and Race. *Disability and Social Change: a South African Agenda*. Child, Youth, Family, and Social Development Research Program of the Human Sciences Research Council, South Africa.
- [8] Gleeson B. (1999), *Geographies of Disability*. Routledge, UK
- [9] Indian Government (1995) 'Persons with Disabilities Act', available at: <http://www.disabilityindia.org/pwdacts.cfm>
- [10] Kottenhoff, K. (2012). Public Transport course Compendium. School of Architecture and the Built Environment, the Royal Institute of Technology, SE-10044 Stockholm, Sweden.
- [11] Kruger, L.W. & Neuman, W.L (2006). *Social Work Research Methods: Qualitative and Quantitative Applications*. Boston and New York: Pearson Education, Inc.
- [12] Lomborg B. (2016, May 09), The smartest ways to deal with traffic congestion in Dhaka, *The Daily Star*
- [13] Longtree (2010), Different Models in Understanding Disability. Available at <http://www.disabled-world.com/definitions/disability-models.php>

- [14] Lundebye, S., Svensson, H. and Dotson, E (2011). *Accessible Transport: Lessons from Urban Transport Projects from Asia*. Report to the World Bank, Washington, D.C.
- [15] Marriotti, A. (2007). *Social Assistance and Disability in Developing Countries*. Supported by DFID and Sight savers International
- [16] Mikkelesen, B. (2005). *Methods for Development Work and Research: A New Guide for Participation* (2nd ed). New Delhi: Sage Publication.
- [17] Morshed A. (2010), Towards a Sustainable Dhaka, Forum, Volume 3 Issue 3, *The Daily Star*
- [18] Odufuwa (2007) 'Towards Sustainable Public Transport for Disabled People in Nigerian Cities' Published in Stud. Home Comm. Available at: <http://www.krepublishers.com/Text/HCS-01-2-093-07-011-Odufuwa-B-O/HCS-01-2-93-07-011-Odufuwa-O-B-Tt.pdf>
- [19] Pane (2010). *Disability and Development (Annual Report, 2010)*, 2014, available at <http://www.pane.org.et/LinkClick.aspx?fileticket=0ycqbaDzOA0%3D&tabid=67&mid=4>
- [20] Rahman S. (2018, February 22), Urbanisation trends and sustainable transport, *The Daily Star*
- [21] Rehabilitation Council India (2014) 'Access for All: Training Manual to promote a 'barrier-free environment' Guidelines for Training Trainers. Available at: <http://rehabcouncil.nic.in/pdf/module6.pdf>
- [22] Renaud, B. (1987), "Urban Development Policies in Developing Countries." In George S. Tolley and Vinod Thomas (eds). *The Economics of Urbanization and Urban Policies in Developing Countries*. A World Bank Symposium. The World Bank. Washington D.C.
- [23] Robert Gallagher (2016), Prioritising Dhaka's Urban Transport System, Wiley, USA
- [24] Rodrigue, J-P, et.al (2009), *The Geography of Transport Systems*, Second Edition, New York: Routledge.
- [25] Strategic Transport Plan (2005), Dhaka Transport Co-ordination Board, Ministry of Communications, Government of The People's Republic of Bangladesh
- [26] Sen B. (2016), Inclusive transport system a must for city commuters, <http://old.dhakacourier.com.bd/inclusive-transport-system-a-must-for-city-commuters/>

- [27] UN (1983), World Programme of Action Concerning Disabled Persons, G.A. Res. 37/52, at 185, U.N. GAOR, 37th Sess., Supp. No. 51, U.N. Doc. /RES/37/52.
- [28] UN (2008), Resolution adopted by General Assembly “Realizing the Millennium Development Goals for Persons with Disabilities” (A/RES/64/131). Available at http://www.un.org/disabilities/documents/gadocs/a_res_64_131.doc
- [29] UNDP (2010), *A review of international good practice in accessible transport for PwDs*. Available online at: <http://www.undp.my/uploads/Int%20Best%20Practice%20Transport%20Disabilities%202010.pdf>
- [30] Urban Transport Policy (2015), The Project on the Revision and Updating of the Strategic Transport Plan for Dhaka
- [31] Venter C. et al (2012). “Enhanced Accessibility for People with Disabilities living in Urban Areas”. Unpublished report PR/INT/248/02, DFID (UK): available at <http://www.globalride.sf.org/images/DFID.pdf>
- [32] WHO (2009), “Mainstreaming Disability in Millennium Development Goals (MDGs) Policies, Processes and Mechanisms: Development for All”. Report of the Expert Group Meeting. Geneva: WHO, April 14-16. <http://www.un.org/disabilities/default.asp?id=1470>

Appendix A

QUESTIONNAIRE

Inclusive Urban Transport

This survey is being conducted to find out the inclusiveness of urban transport system in Dhaka city. The survey is being supported by BRAC University (BRACU). The results of this survey will be made public. We would appreciate your taking a few minutes to respond to the following questions. For the sake of confidentiality please do not identify yourself anywhere on the questionnaire. Thank you for your cooperation.

1	Age					
2	Gender					
3	Occupation					
4	Are you regular passenger of public transport?	Strongly Agree	Agree	Strongly Disagree	Disagree	NA
5	If agree, then continue; if not, then discontinue here.					
6	Bus did not stop at curb for Vulnerable Groups (disabled, senior citizen, poor and women passenger)					
7	Do you know there are prioritized seats for disabled and elderly passengers?					
8	Bus helper did not ask priority seats to be vacated for Vulnerable Groups					
9	Discourtesy by driver and helper to Vulnerable Groups					
10	Pass-up of Vulnerable Groups by bus					
11	Bus helper did not call out stops or transfer points (especially assists passengers who are blind or with low vision)					

12	Bus driver pass-up wheelchair users					
13	Buses come to a complete stop at bus stops and remain stopped until passengers have entered and positioned themselves for their ride					
14	Drivers/helpers to call out key stops and require audible announcements at transit terminals, as an aid to special passengers					
15	Available bus services exist for vulnerable groups					
16	Roads and streets are accessible for vulnerable groups					
17	Transit personnel (bus drivers, helpers and fare collectors) are being received sensitivity training regularly so that they will have direct experience of vulnerable groups					
18	Vehicle design should include braille prints to assist those with visual impairments					
19	Adequate hand grips and plentiful vertical stanchions at doors and inside vehicles so vulnerable groups can hold					
20	Transport signs painted in a bright contrasting color					
21	Non-skid materials for step and floor surfaces					
22	Transit terminals and stations should have well-located signs with high-contrast large print to assist deaf and visually impaired passengers					
23	Transit terminals and stations should have well-located signs with					

	high-contrast large print to assist to assist passengers who cannot read					
24	Tangible guideways, within transit terminals, stops and buses					
25	Tangible warning strips at curbs and platform edges to assist blind persons.					
26	Having system of arrival announcements-transfer announcements-destination announcements					
27	Pedestrian pathways serving the public which incorporate inclusive design					
28	Pedestrian pathways are free of obstacles and maintained in as accessible as possible ¹					
29	Station/stops restroom is clean					
30	Ticket is available for all passengers including vulnerable groups					
31	Ticket is fairly priced					
32	In response to gender-based violence rise in public transport, transport authorities have provided adequate women-only services where female customers can travel safely without the risk of encountering men.					
33	Women are sexually harassed ² during travelling					

¹ Level pathways of adequate width, curb ramps serving wheelchair users and all other pedestrians, accessible bathrooms, etc.

² In public transport, harassment can include verbal and nonverbal behaviours ranging from lewd remarks, cat calls and whistling, touching, pinching, groping and obstructing female commuters' way.

34	Women reserve seats are usually being occupied by male passengers					
35	Easy access for women to get into the bus during office going and office closing time					
36	Women are safe to travel at night					
37	Established regulatory mechanisms to enforce safe vehicle operation by ride sharing operators					
38	Established regulatory mechanisms to enforce safe vehicle operation by public sector transit operators					
39	Established reward and punishment system to encourage safety and courtesy to all passengers					
40	Established traffic rules which promote inclusiveness of all passengers					
41	Police personnel observed in stations, parking lots/garages, on trains to support vulnerable groups					
42	There are active government agencies ³ who are working for inclusiveness of urban transport					
43	Do you think transport system in Dhaka is inclusive for all passengers?					
44	Suggestion for inclusiveness of urban transport					

³ BRTA, DTCA, Traffic Police, BRTC, DNCC, DSCC etc.

Appendix B

Date of interview:

Socio-Demographic information

Gender:

Age:

Educational Level:

Occupation:

I. Ministry of Road Transportation

1. What Legal and Policy Frameworks Advocate for Inclusive Urban Transport for Vulnerable Groups in Dhaka? What role does your office play in this regard? If no, whose role is it?
2. Do you have any special consideration to the needs and interests of Vulnerable Groups?
3. Is there any specification requiring the transport service giving vehicles to be accessible for Vulnerable Groups? If there is, what is it? If no, why not?
4. As a lead agency what measures did your institution took so as to make the National Plan of Action Vulnerable Groups, especially concerning transport inclusiveness, effective?

II. Dhaka Transport Co-ordination Authority

1. What Legal and Policy Frameworks Advocate for Inclusive Urban Transport for Vulnerable Groups in Dhaka? What role does your office play in this regard? If no, whose role is it?

2. Do you have any special consideration to the needs and interests of Vulnerable Groups?
3. Is there any specification requiring the transport service giving vehicles to be accessible for Vulnerable Groups? If there is, what is it? If no, why not?
4. As a lead agency what measures did your institution took so as to make the National Plan of Action Vulnerable Groups, especially concerning transport inclusiveness, effective?

III. City Corporations

1. Do you think that designs of roads in Dhaka accessible for Vulnerable Groups? If not, what measures your office did take/taking?
2. Do your designs consider mobility needs of Vulnerable Groups, especially, for those with limited mobility in the outset? If yes, in what way would it consider?
3. Would the design and its implementation conform?
4. What factors hinder constructing all inclusive roads? Is it costly to construct roads with full access to Vulnerable Groups?

IV. Public Transport Service Providers

1. Are your buses accessible for Vulnerable Groups? If not, in what way do you provide transport services for this group of people?
2. What could be the reason(s) hindering you from making your buses inclusive?
3. Have your office done anything in relation to this? If yes, what are these things? If no, what project or plan do you have leaning towards making your buses inclusive to Vulnerable Groups in the future?

Appendix C

Interview Guide to Focus Group Discussion

1. Do you use transport service in Dhaka? If yes, in what way and what mode of transport? If not, why not?
2. How do you see the transport environment (streets and vehicles) in Dhaka? Do you think they are inclusive for Vulnerable Groups? If not, why not?
3. Have you ever faced challenges in accessing transport service in Dhaka? If yes, what are they? And, how frequent are these challenges? What coping mechanisms have you used?
4. What should be done in relation with alleviating the problem, and improving the transport inclusiveness in Dhaka?
5. What are the problems you face in the transport environment in relation with using streets and transport vehicles in Dhaka?
6. What do you think is the cause(s) for the problem(s)?
7. What should be done with the existing and future transport environment (streets and vehicles) of Dhaka so as to ensure the inclusiveness for the needs of Vulnerable Groups?
8. If there is anything to add in relation with transport inclusiveness before we conclude our discussion, you are welcome.