

## EMPIRICAL ANALYSIS TO EXPLORE THE DEFICIENCIES IN PUBLIC TRANSPORT SYSTEM: A CASE STUDY ON GAZIPUR

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### ABSTRACT

Public transport is an inescapable part of city living especially for developing country like Bangladesh. Mobility is inevitable for promoting economic growth, prosperity and healthy living of city dwellers, to control unplanned city growth as well. Service quality of public transport must be considered not only to attract its users but also for the reduction of traffic congestion. The objective of the study is to find out the deficiencies in service quality of public transport in the newly growing industrial city like Gazipur based on users' perspective. For empirical analysis, 400 data were collected through face to face survey from different bus stops of Gazipur city. The results showed, nearly 54.25% users believed that the bus service quality was unsatisfactory and 48% felt unsafe inside the bus. Besides, 44.5% users have had the poor experience with bus travel because of the worst facility, however, only 21% pleased with seat comfortability. Every service provider should be well aware of the quality of services to continue public transport as the main transport mode.

**Key Words:** Service Quality, Public Transport, Mobility, Traffic Congestion

### 1. INTRODUCTION

As the population of Dhaka city is growing rapidly, it is very difficult for the city's urban transport system to maintain the required operational standard to meet the needs of the ever-increasing population. People of different classes use the different mode of transport for their travel purposes (Rokibul, 2016). A huge number of people travel daily on foot, pedal rickshaws, auto-rickshaws, tempos, taxis, private cars, and a wide array of buses since Dhaka is the major economic, cultural and administrative hub of Bangladesh. Citizens, predominantly being upper-middle-class, are heavily dependent on the public transport system of the city (Hossain, 2006). In a developing country, the bus is the very significant mode of transport. About 31% of all transport trips comprise of bus trips. It is because of cheap fares, easy accessibility, extensive routing (OCG, 2015). Although most of the users are not satisfied at all with the quality of transport services. Arguably presence of the uncontrolled amount of private vehicles, about 73.33% in the traffic stream is one of the major reasons for traffic stop-and-go situations in Dhaka city (Hoque and Khan, 2013). Assessment of public transport service quality is not only vital for the improvement of user satisfaction, also gives an overview to policymakers to ameliorate their perception about to develop future transportation system (Das and Pandit, 2013).

Gazipur is a newly growing industrial city of Bangladesh. Present public transport service quality assessment of a newly growing city like Gazipur helps transport specialists to make the better decision on future transportation system to increase the quality of service, mobility, reduce pollution and provide vigorous city life to its dwellers. For empirical analysis, 400 data were collected through face to face survey from different bus stops of Gazipur city in order to explore the deficiencies in the public transport system. The objective of this research is to find out the deficiencies in the public transport system of Gazipur territory.

## 2. METHODOLOGY

Gazipur city has been selected as study area. In order to conduct this research, necessary data have been collected through face to face questionnaire survey. A questionnaire containing both close-ended and open-ended was prepared to collect data. Necessary suggestions from transportation experts have also been taken during the preparation of questionnaire. 20 expert enumerators were directly involved to carry out face-to-face interviews from different bus stops of Gazipur city throughout the month of January 2017. The target sample was 600 according to the demography and standard sample size practice. However, random data samples were restricted to 480 due to the unwillingness of the commuters, rush hour office/home movement, and other impending situations. After filtering the anomalies, the remaining final sample size was 400. The survey format was designed to explore the deficiencies in the public transport system of Gazipur city. Collected data were processed for subsequent analysis using software such as SPSS and Microsoft Excel.

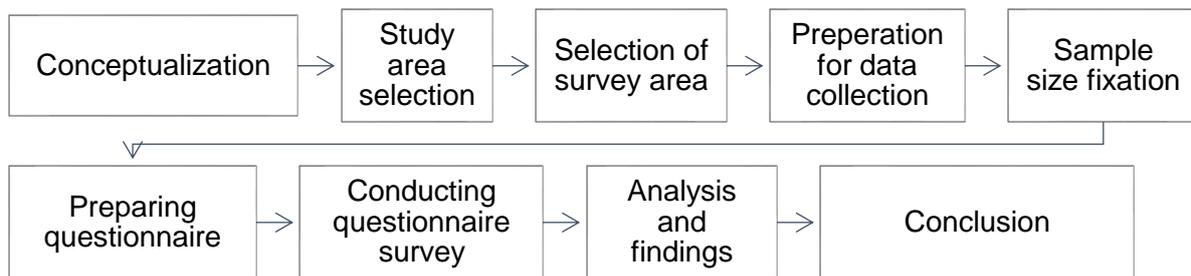


Figure 1: Methodological framework of the research

## 3. FINDINGS AND ANALYSIS

### 3.1 Mode of Transport

Most of the travel per day of the commuters is normally generated by bus. Figure 2 shows, 51% of the total people use the bus as their main mode of transport while 7% choose the car. Most of the people are living their life with moderate income.

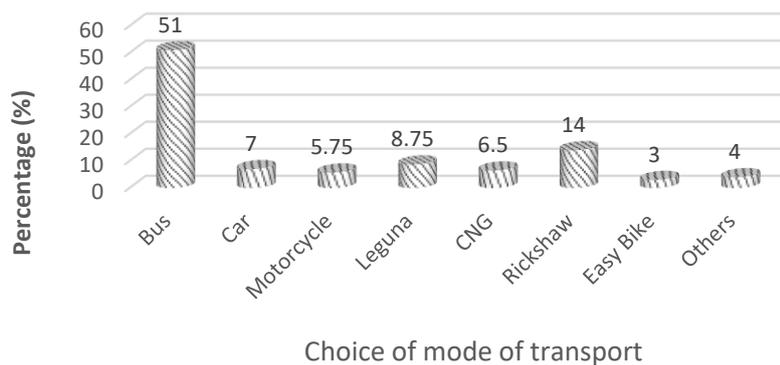


Figure 2: Mode of transport

Only a few had the ability to use private cars. So more people preferred bus services because of the availability and cheap fare. In developing countries, people think public transport means bus transport. Rickshaw is one of the most popular modes for short trips consisting 14% of the total trip. People preferred rickshaw as the second most popular mode of transport because of its availability. Though it has the vulnerability to ride on main roads. Road users also loved to use Leguna for moderate distance because it is not as

overcrowded as a bus. People at least find their seat in it and safer than CNG and small vehicles on the highway.

### 3.2 Deficiencies in Public Transport System

Deficiencies in public transportation system lead to reduce its users. Adequate service facility in public transport is very crucial to attract passengers and increase mobility.

#### 3.2.1 Service on Weekdays and Weekends

Most of the people use a bus as their prime mode of transport. Figure 3 shows, about 18% passengers were satisfied with present bus service during weekdays while the majority of them nearly 82% were unsatisfied.

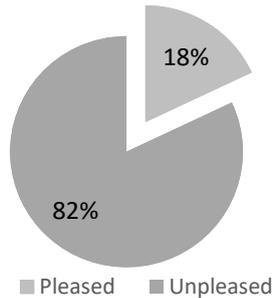


Figure 3: Travel time on weekdays

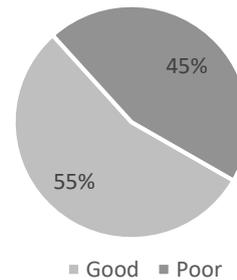


Figure 4: Travel time on weekends

But on the weekends the scenario was quite different than weekdays. Figure 4 shows, about 55% bus users believed that the service on weekend was good but 45% passenger thought that it was poor. Most of the user claimed that during weekdays their average travel time was much longer than the weekends' time. During weekdays, they have to wait a lot of time in order to get a bus as most of the buses are overcrowded with a poor sitting arrangement. About more than half of the respondents expressed that low travel cost was the main reason for overall satisfaction of bus service. But some buses took more time to collect passengers at weekends from bus stops.

#### 3.2.2 Structural Condition and Ventilation System of Bus

Figure 5 shows, about 77% of the respondents claimed that structural condition of the bus in Gazipur route was poor while 23% users were satisfied. Many of the buses were too old to operate and some buses were expired but continuing their services because of the poor monitoring system.

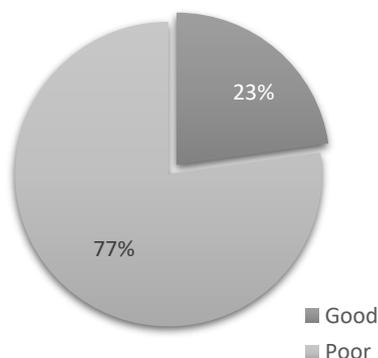


Figure 5: Structural condition of bus

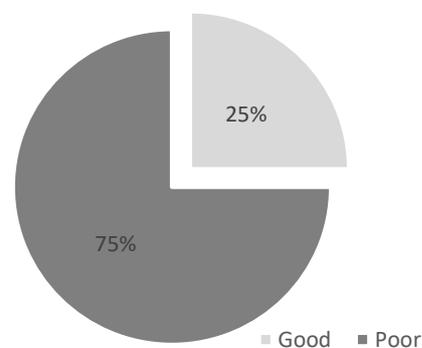


Figure 6: Ventilation system of bus

Besides, Ventilation system on buses was very poor according to 75% passengers and 25% thought that it was good to circulate the air throughout the bus shows in figure 6. Because of the poor ventilation system children and aged people suffered more than others. Many buses were unable to open of its maximum number of windows because of the poor structural condition. Passenger urges that these types of deficiencies in bus services should be monitored and upgraded as soon as possible.

### 3.2.3 Seat Availability and Seat Comfortability

Another major deficiency in the public transport system in Gazipur city was lack of seat availability and poor seat comfortability. Service providers preferred to collect standing passenger for more lucre from bus stand to the last stoppage after filling the seats of the buses. Most of the buses were overcrowded at the extreme level to breathe and move properly. As a result, just 1% user claimed the seat availability was excellent whereas 16% thought it as good shows in figure 7. Nearly 56% and 27% respondents expressed this seat available facility was very poor and moderate level among the rest 83% user.

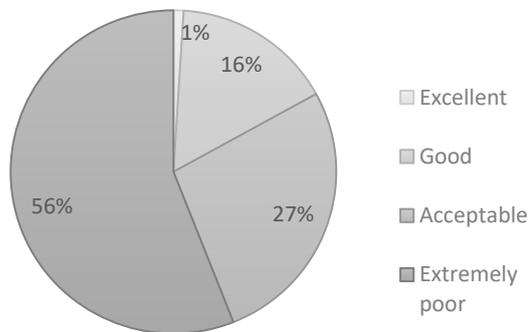


Figure 7: Seat availability on bus

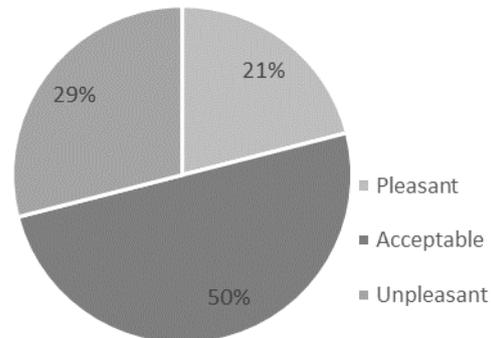


Figure 8: Seat comfortability on bus

Figure 8 shows, about 50% passengers thought seat comfortability was acceptable and 21% passengers were pleased with seat comfortability. However, 29% bus users were not pleased with the seating facilities of the bus in Gazipur city. It is quite difficult to place their legs in front of the seat as the spaces between two seats is so little for moderate height passengers.

### 3.2.4 Security and Safety Inside the Bus

Ensuring safe and secure bus service is always a great challenge for a developing country. Figure 9 shows that most of the passengers (48%) thought the safety and security of the bus were poor. Larceny was very hackneyed inside the bus in Gazipur territory because of the excess throng of people and lack of enough lighting system. Besides, female bus users felt unsecured both into the bus and bus stop due to harassment with them. But 38% passengers thought that the safety of the bus was acceptable.

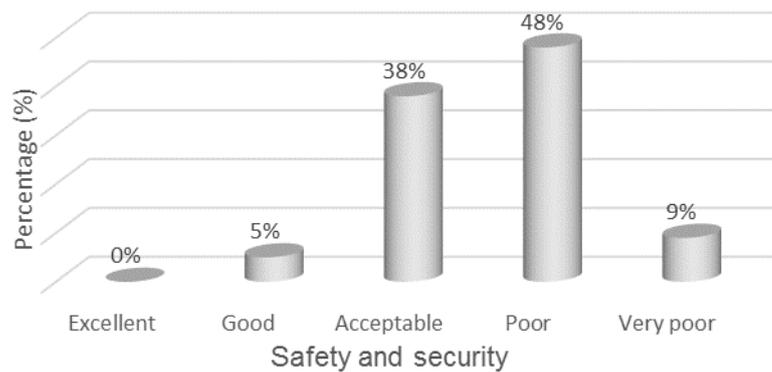


Figure 9: Scenario of safety and security

### 3.2.5 Quality of Bus Service

Figure 10 shows that 54.25% passengers expressed the present bus service quality in Gazipur city were unsatisfactory while 16.75% were satisfied. Lateness was a hackneyed scenario in public transportation system, especially in stoppages. Paying fare was one of the hardest things for standing passengers as buses were always overcrowded. Besides, it was hard to find out a single neat and clean bus in the territory. According to some passengers, they only used such poor quality public transport because there were no alternative options for them. Furthermore, mismanagement was a common thing with service providers.



Figure 10: Scenario of bus service quality

### 3.3 Experience of Bus Travel

Table 1 shows, only 4.75% passengers have had excellent experience and 2.5% have extremely worst experience with bus travel in Gazipur. Most of the passengers about 44.5% depicted that their bus experience was poor because of bad service facilities.

Table 1: Prevailing bus travel experience in Gazipur

Experience	Frequency	Cumulative Frequency	Percentage (%)	Cumulative Percentage (%)
Excellent	19	19	4.75	4.75
Good	78	97	19.5	24.25
Medium	115	212	28.75	53
Poor	178	390	44.5	97.5
Very Poor	10	400	2.5	100
Total	400		100	

Poor service quality was responsible for the poor experiences of bus travel. They were inured with services that provided by the authority. Most of the users think it is high time to

improve the quality of bus service to attract more passengers. Otherwise, public transport will lose its users day by day.

#### **4. CONCLUSIONS**

In this research, deficiencies in the public transport system have been analyzed based on user's view towards quality, safety, and security in Gazipur city. The quality of the bus service was unsatisfactory due to the poor structure and sitting arrangement. In spite of these negative views, passengers have had a positive attitude for bus service because of the low travel cost and safety than another mode of transport. About 51% people preferred bus as their main mode of transport in Gazipur. In order to sustain the existing users and to attract new users, the policies related to passengers' safety, security as well as fare, reliability and overall service offered by bus in Gazipur city must be taken into account in order to enhance its suitability as public transport.

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