LOCAL GOVERNMENT
ENGINEERING DEPARTMENT

VOLUME II

SURVEY REPORTS
(DRAFT 2)

REVIEW & UPDATE OF NAWABGANJ UPAZILA DEVELOPMENT PLAN (MASTER PLAN) UNDER UTMIDP, LGED

VOL II: TRANSPORT AND SOCIO-ECONOMIC SURVEYS (GROUP D, E AND F)

OCTOBER
2024

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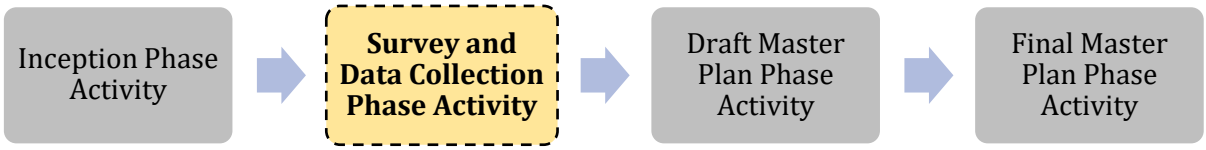
EXECUTIVE SUMMARY

Socio-economic Survey and Traffic & Transportation Survey

CONTEXT OF THE PROJECT

The main objective of this master plan project is to review and update the master plan of Nawabganj upazila under UTMIDP/UMPR-2. Nawabganj Upazila that had been prepared by Urban Development Directorate (UDD) earlier Upazila administration has been recognized as the most important administration level according to the government's recent administrative restructuring policy. The main objective of preparation of the master plan is to assess and improve the quality of all social, economic, administrative and infrastructure services of the upazila. Review and update of Nawabganj Upazila Master Plan is a recent initiative of Local Government Engineering Department (LGED) which is being prepared by Sheltech (Pvt.) Ltd. and Sheltech Consultants (Pvt.) Ltd. The current Survey Report (Draft 2) has been prepared, in persuasion of the Part B (Survey Studies) of the Terms of Reference of Review & Update of Nawabganj Upazila Development Plan (Master Plan). The second draft report, submitted following the first draft in March and a data-sharing workshop on April 2024 at Nawabganj Upazila Complex with local stakeholders, incorporates revised data obtained through field checks, as directed by the ToR and inception report.



Major Phases of the Project

REPORT STRUCTURE AND CONTENT

Survey Reports	
Volume I	Report on Engineering and Land/ Space Use Survey, Geotechnical and Seismological Survey, and Hydrographic Survey
Volume II	Report on Socio-Economic Survey, Economic Activity Survey, and Traffic and Transportation Surveys
Volume III	Working Paper on Population, Heritage, Recreation and Open Space, Health Facility, Education Facility, Agriculture including fisheries, livestock and forestry, Bio-diversity Including flora and fauna, Hazard and disaster, Public health, disease control and wellbeing, Environment, Legal and Institutional Framework for implementation of the project output
Volume IV	Community Engagement (PRA and KII related) Report

SCOPE OF WORK

The scope of Survey Report is as follows:

- To collect all the information as indicated in the ToR for the Project Area.
- Preparation of detailed survey inventory, processing and analyzing survey data, presenting them through mapping and reporting are also a part of this report. These data include physical feature, topographic, land use, hydrographic, geotechnical and seismologic, environment, socio-economic, economic, transportation situation of the project area. Stereo (3D) Satellite Image based advance technology has been used for topographic, physical features and land use survey for the project area.
- Collection of different utility networks like drainage line (storm water), sewerage network, gas supply network, water supply network, and electricity networks form respective agencies;
- Conducting stakeholder's consultation meeting with Local People/Local Leaders/Representatives/Communities to involve them in the process of plan preparation through Participatory Rapid Appraisal (PRA) to incorporate the knowledge and opinions of local/community people in formulating planning proposals.

Table: Administrative Units of Nawabganj Upazila

Local Government Area Type	Units
District	Dhaka
Upazila	Nawabganj
Union	Agla, Bakshanagar, Bandura, Barrah, Baruakhali, Churain, Galimpur, Jantrail, Joykrishnapur, Kailail, Kolakopa, Nayansree, Shikari Para, Sholla

SOCIO-ECONOMIC CHARACTERISTICS

All the fourteen Union have been surveyed to capture the socio-economic scenario of the Upazila. 28% of the surveyed population has completed primary education. Main occupation is farming, business is also prominent in the Upazila. 40% of the surveyed people earn 20,000 to 40,000 Taka denoting moderate income level. Only Primary School and Madrasa is adequate and the Upazila lacks healthcare center, community clinic and pharmacy. There is ample open space, green areas but lacks other social, cultural facilities like public library, cinema, youth association and community center. In terms of general services, availability of Bazars is predominant. Mosque, graveyard, general store is also adequate. Availability of emergency shelter, public toilet, post office, bus stop, fire station is very low. Water logging and arsenic problem are the major disaster that people are suffering.

Water supply availability is not in good condition but majority of the respondents agree on the availability of the electricity. Approximately 64% of respondents showed their concern about the absence of gas supply. They are mostly satisfied about the sanitation system. Transportation system is not in good condition as adjacent road, footpath, availability of public transport system are totally absent or very few in the Upazila. For working, education, bazar purposes daily modes are

CNG/autorickshaw/tempo. The respondents also concerned about the absence of drainage system and waste collection system. 63% of respondents are not aware of the master plan project in the Nawabganj Upazila. Moreover, services provided by the Upazila like Health, education, transport, agricultural services are not enough for the benefit of the people

In the Formal sector, which includes small to medium enterprises, banks, cottage industries, registered shops, and NGOs, there are no designated industries in the Upazila. Registered shops, predominantly privately owned, make up the highest percentage. 61% of businesses rely on local raw materials, indicating a robust local supply chain, with 72% targeting the local market. Groundwater is used, and waste disposal is unrefined, often done in canals, rivers, and roadsides. Professional training for employees is also lacking.

In the Informal sector, unregistered enterprises such as street vendors, hawkers, rickshaw pullers, drivers, and housekeepers are common. Over 10,000 Taka income category constitutes 49%, suggesting a significant portion with medium income levels. Informal activities are often temporary, occurring throughout the year. Many avoid loans, preferring a self-financing approach. Adverse weather, business recession, infrastructural problems, and eviction are major challenges. 69% of hat/bazar are individually owned, and 40% trade within 1 to 20 Lakh Taka per month. Tubewells supply water (86%), electricity is widespread, but 42% complain about the lack of public toilets, and 75% note the absence of waste disposal systems in their shops in the bazars.

Traffic and Transportation Survey

This comprehensive Traffic and Transportation Survey was conducted in Nawabganj Upazila with the aim of analyzing and understanding the current state of traffic and transportation infrastructure for the new Master Plan of Nawabganj Upazila. Nine kinds of surveys were conducted for assessing the traffic and transportations condition in Nawabganj Upazila. The surveys are, Traffic Count Survey and Pedestrian Count Survey, Origin-destination Survey, Occupancy survey, Public Transport Passenger Survey, Pedestrian Interview survey, Parking survey, Terminal survey, Household survey and Travel time survey.

Traffic Count Survey and Pedestrian Count Survey:

The survey gathered essential data on vehicular movement to assess traffic patterns from 16 points at Nawabganj upazila. It was observed that Nawabganj Mor and Bandura have the most significant traffic movement.

Pedestrian movement was meticulously observed at five points to understand the interaction between pedestrians and vehicular flow. It was concluded that pedestrian movement is higher at the rural roads.

Origin-Destination Survey:

By tracking the origin and destination of trips, the survey aimed to establish travel patterns and identify major transportation corridors. It was observed that majority of the trips are work based trips. Most of the trips are generated from Bandura and Kolakopa.

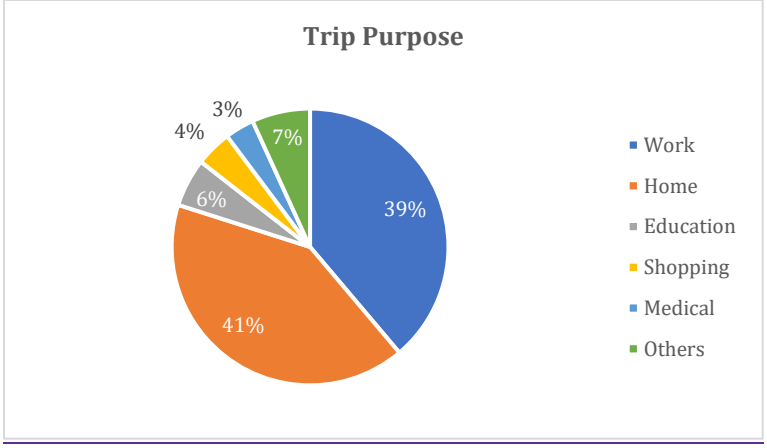


Figure: Trip purposes of the trip makers

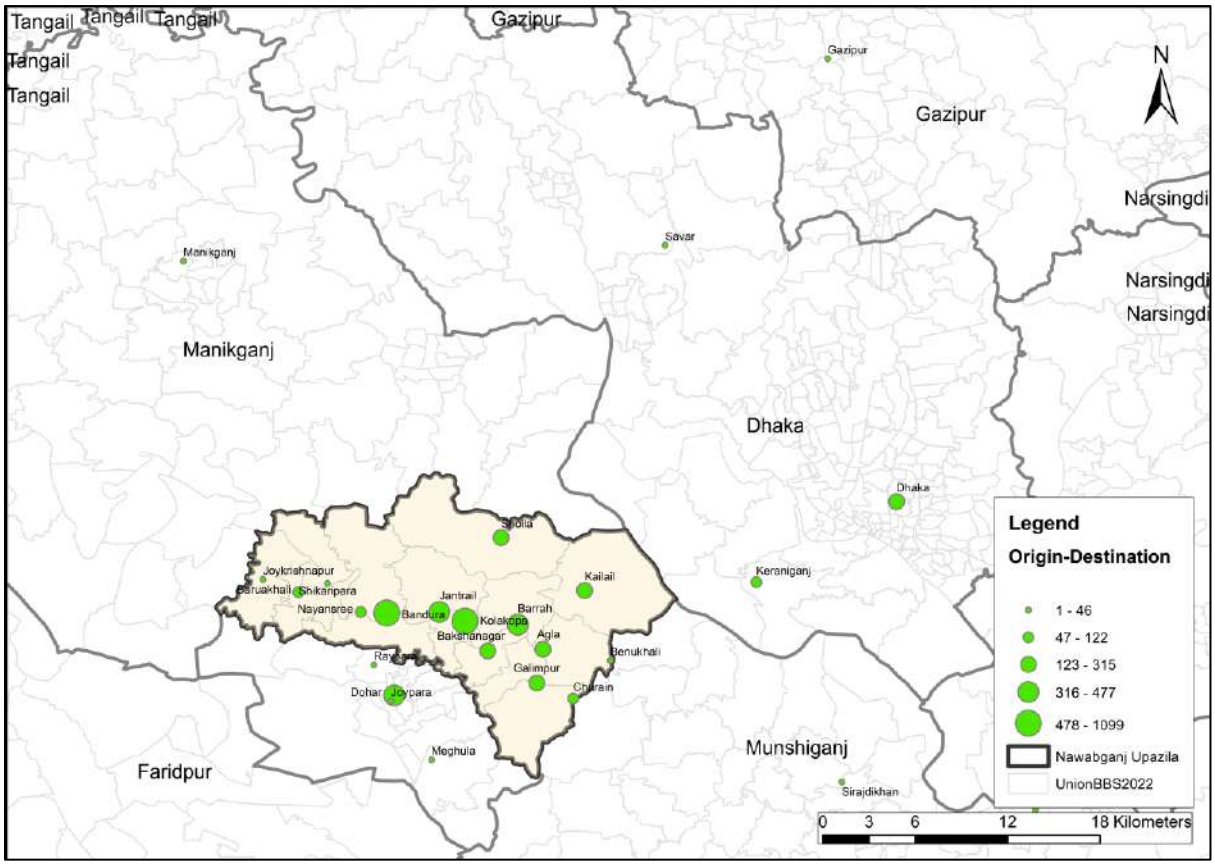


Figure: Distribution of origins and destinations from Roadside Interview survey

Occupancy Survey

From the occupancy survey, average occupancy for each vehicle has been calculated for each kind of vehicle. According to the following table, occupancy rate is relatively higher for light vehicles and buses share a high occupancy rate among the heavy vehicles.

Table: Average occupancy of existing modes in Nawabganj upazila

Modes	Average occupancy
Bicycle	1.30
Rickshaw/ Rickshaw van	2.85
Motorcycle	2.08
Car/ Taxicab/SUV	3.79
CNG/Auto Rickshaw/Auto Van	4.68
Tempu/Leguna/Human Hauler	2.52
Microbus	6.32
Utility (Pick up, Jeep)	2.80
Heavy truck/ Trailer/ Container/ 3 axle Truck	3.14
Large bus/ Double decker	38.71
Light truck/ 3 ton or less	2.77
Medium bus (16~39 seats)	22.52
Medium truck/2-axle Truck	3.35

Public Transport Passenger Survey:

Detailed information on public transport usage, including preferences and challenges faced by passengers, was collected. This data is critical for enhancing public transportation services. A majority of the respondents changed their mode of transportation to get to their destination. Most of the respondents changed their mode twice. For most of the respondents, preferred mode of transportation for first mile is auto/battery rickshaws while the preference for last mile lies in taking auto/battery rickshaws and walking to get to their destination. The question about the satisfaction of the respondents while using public transportation contains a generally positive sentiment for all the aspect except for the condition of bus stops.

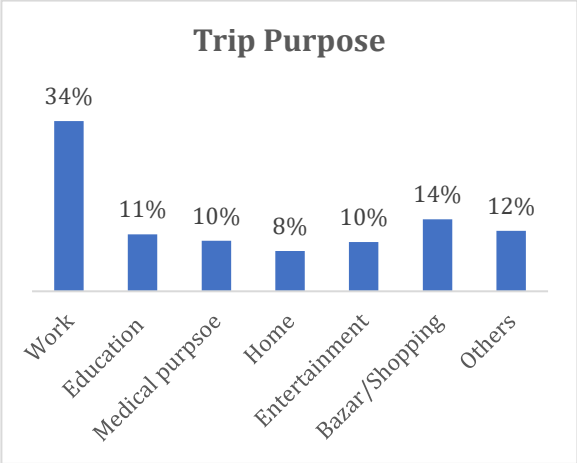


Figure: Trip purpose of the public transport users

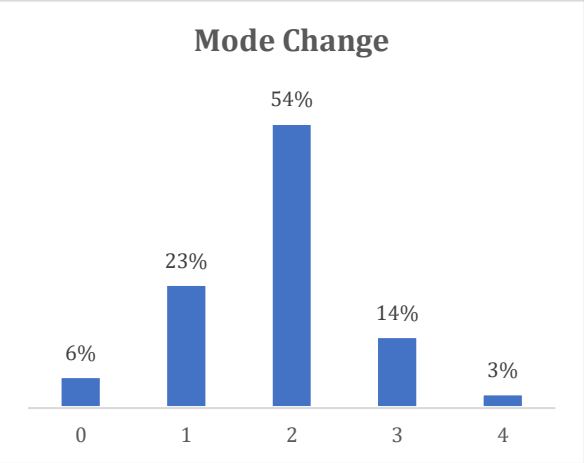


Figure: Change of modes

Apart from the user survey, an operator survey was also done to understand the public transportation infrastructure in the upazila. It was found that, 5 buses operate through Nawabganj upazila to facilitate the inhabitants.

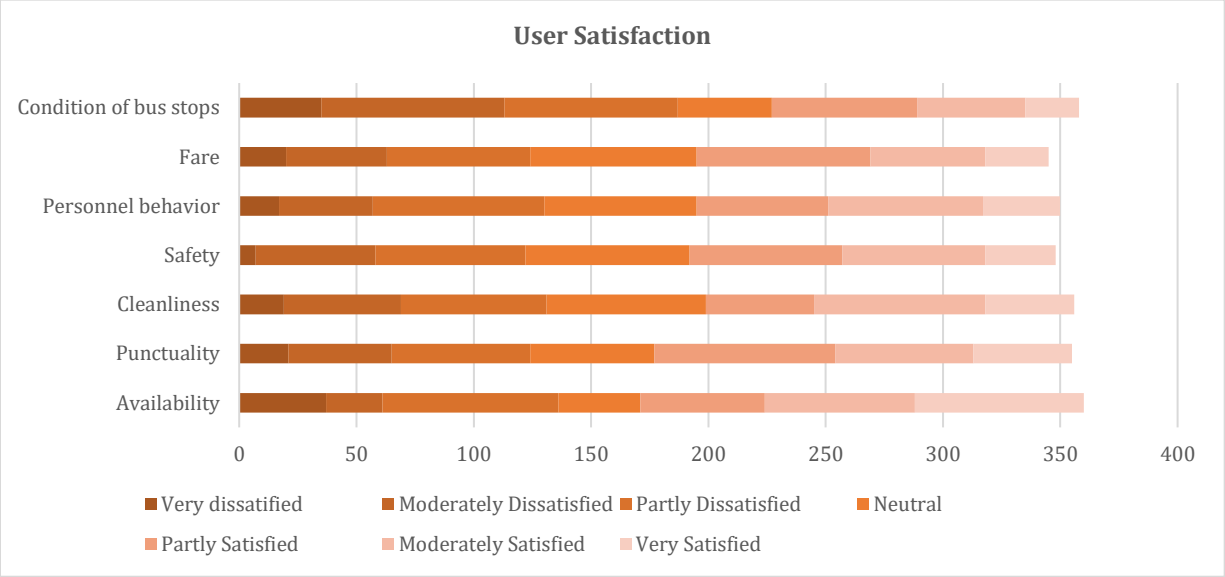


Figure: User satisfaction for public transportation service

Pedestrian Interview Survey:

Interviews with pedestrians helped gather qualitative data on their experiences, perceptions, and suggestions for improving pedestrian infrastructure and safety measures. The survey brought out the travel behavior of the surveyed pedestrians to some extent. In general, most of the respondents expressed their concerns about the need for more footpath in their localities.

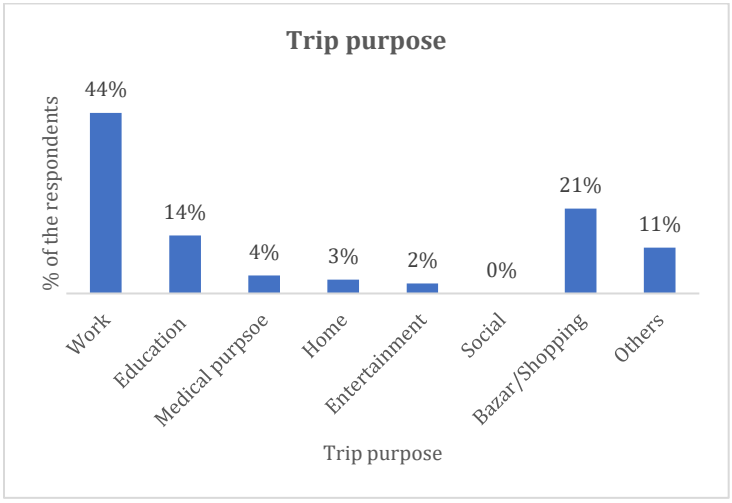


Figure: Trip purpose of the respondents

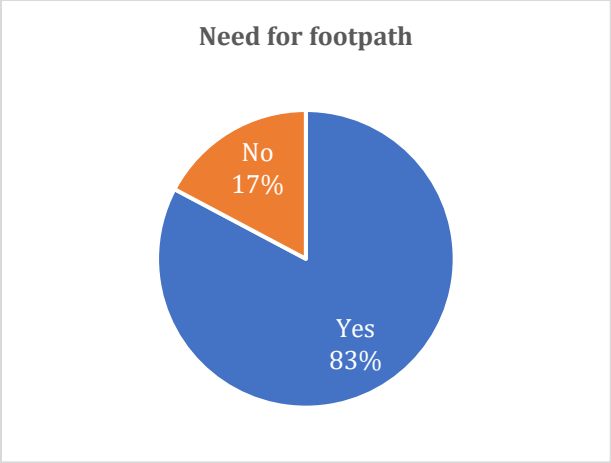


Figure: Opinion on footpath availability

Parking Survey:

The analysis of parking facilities and demand assists in formulating effective parking policies and infrastructure improvements, ensuring a balanced and organized urban environment. The parking survey let us know about the prevailing parking conditions at three locations/intersections in Nawabganj Upazila. Auto/Battery rickshaw is the predominant mode at the survey locations.

Table: Peak hour parking volume at different locations

Location	Details	Peak hour	Parking volume
Bagmara	Bagmara bazar road	17.30-18.30	200
	Court Building road	17.30-18.31	44
	Bagmara bridge	17.00-18.00	25
Nawabganj	Nawabganj - DN College	16.00-17.00	105
	Nawabganj - Sholla	13.30-14.30	99
	Nawabganj -Bagmara	15.30-16.30	194
	Nawabganj-Majhirkanda	13.30-14.30	128
Bagmara	Bandura-Baruakhali	9.00-10.00	107
	Bandura-Hasnabad	9.00-10.00	200
	Bandura-Terminal	9.00-10.00	317

Terminal Survey:

Terminals play a vital role in the transportation system of a region. Only one bus terminal was found at Nawabganj Upazila. This terminal were surveyed to assess their existing condition, connectivity, and passenger facilities. The survey outlined the problems, probable solution, existing facilities. The identified major problems are, need for a waiting room, very poor condition of rest room, inadequate seating arrangements, Information from the survey revealed the need for improvement of the terminal. Recommendations for improvements were formulated based on the findings.

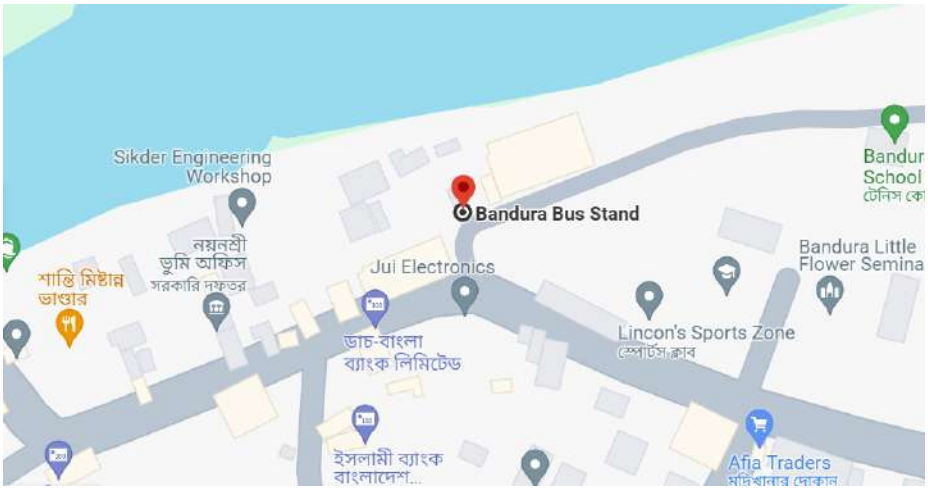


Figure: Bandura bus terminal

Household Travel Survey

The household travel survey was conducted along with the socio-economic survey. The household travel survey helped in understanding the trip patterns of the surveyed households. The respondents were asked questions about their trips, the first and last mode they used for travelling and trip detail of the trips they make usually. The trips were categorized in three types: work related trips, education related trips and market/shopping related trips. All the other trips were included in 'other' category. It was observed that most of the trips were work related. It was revealed that, the preferred mode for going the first mile is walking in all types of trip purposes. CNG/Battery rickshaw are the most preferred mode for going the last mile to reach the destination.

Travel Time Survey:

The survey analyzed travel speed along the selected roads of Nawabganj upazila to understand the efficiency of the existing network. Three routes were selected to conduct the travel time survey. The routes are:

Route A: Komorganj hat- Hashnabad

Route B: Muktijoddha Chottor- Sholla Hospital

Route C: Puraton Bandura- Beribadh

Car was used for all three types of routes. Additionally, battery rickshaw was used for conducting the survey on Route B and Route C. Travel speed was found to be lower at or near the intersections. It was also found that, most of the delays were occurred at the intersections and due to traffic spill back condition.

The findings from this survey serve as a foundational resource for urban planners, policymakers, and transportation authorities in Nawabganj Upazila. The data collected will aid in the development of strategic interventions and policies to enhance traffic management, improve transportation infrastructure, and create a more sustainable and efficient urban environment.

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1 CHAPTER ONE: INTRODUCTION

This chapter presents a comprehensive analysis of the socio-economic, economic, and transportation conditions of Nawabganj Upazila. Situated on the periphery of Dhaka district and surrounded by upazilas like Singair, Dohar, Keraniganj, Serajdikhan, and others, Nawabganj is becoming increasingly important for regional connectivity. The review and update of the Nawabganj master plan place a strong emphasis on improving transportation networks and ensuring the provision of basic services to both urban and rural residents.

The socio-economic survey focuses on demographic, social, cultural, environmental, and infrastructural aspects, aiming to assess the quality of life and identify areas where improvements are needed. Key indicators such as population density, access to utilities, and community amenities are examined, alongside financial metrics like income, expenditure, and poverty levels. These analyses will help estimate the region's growth and future needs over the next 20 years, informing development strategies.

Additionally, the economic and transportation surveys provide critical insights into the area's existing transport systems and economic activities. Transportation surveys, such as Traffic Volume Count, Pedestrian Count, Parking, and Roadside Interview Surveys, were conducted to understand the current conditions and to develop a detailed transport plan. These surveys, along with data from the 2011 census, form the basis for recommendations that will enhance connectivity and address challenges related to transportation and economic development.

By combining these diverse perspectives, the chapter aims to provide a holistic view of Nawabganj's socio-economic landscape and transportation infrastructure, offering guidance for future planning efforts that cater to the evolving needs of the upazila’s residents.

2 CHAPTER TWO: SOCIO-ECONOMIC SURVEY

2.1 Introduction

The main objective of socio-economic survey is to analyze the existing demographic, social, cultural, environmental, infrastructural, and utility services condition of the area. The survey aims to bring about significant improvement in the quality of life of the upazila people through provisioning of basic services and facilities both in urban and rural areas according to need. The socio-economic survey aims to gather demographic, socio-cultural, and economic information from selected households to understand the existing conditions under which people are living.

In this section of the chapter, the socio-demographic aspects of Nawabganj Upazila have been analyzed. Key focal points include population density, challenges, and sources related to water, gas, electricity, sanitation, transportation, fuel, and recreational amenities, as well as the financial dynamics such as income, expenditure, poverty, and health of the residents. These analyses are required to consider likely growth factors affecting the region in particular, and estimate broad population over the next 20 years.

To achieve the outlined study objectives, secondary sources have been employed, drawing on data from sources such as the 2011 census publications, specifically the district and community series volumes. These publications have proven to be valuable resources, offering insights into demographic structure, migration patterns, and other pertinent data relevant to the study. The purpose of the socio-economic study is to uncover the intricacies of local dynamics and the developmental landscape within communities. This exploration is crucial for understanding future societal requirements and demands across various planning aspects, including services and infrastructure in both urban and rural areas.

2.2 Survey Methodology

Data on socio-economic conditions has been collected from both secondary and primary sources. General information on demography, family size, age, religion, education, employment and occupation pattern, land ownership pattern, land value, land utilization, income level, health and recreation facilities, etc. has been collected from the primary sources through a specially designed socio-economic questionnaire survey. The household survey task adhered to a standard survey methodology outlined in this chapter, providing a comprehensive overview of the methods employed in the study.

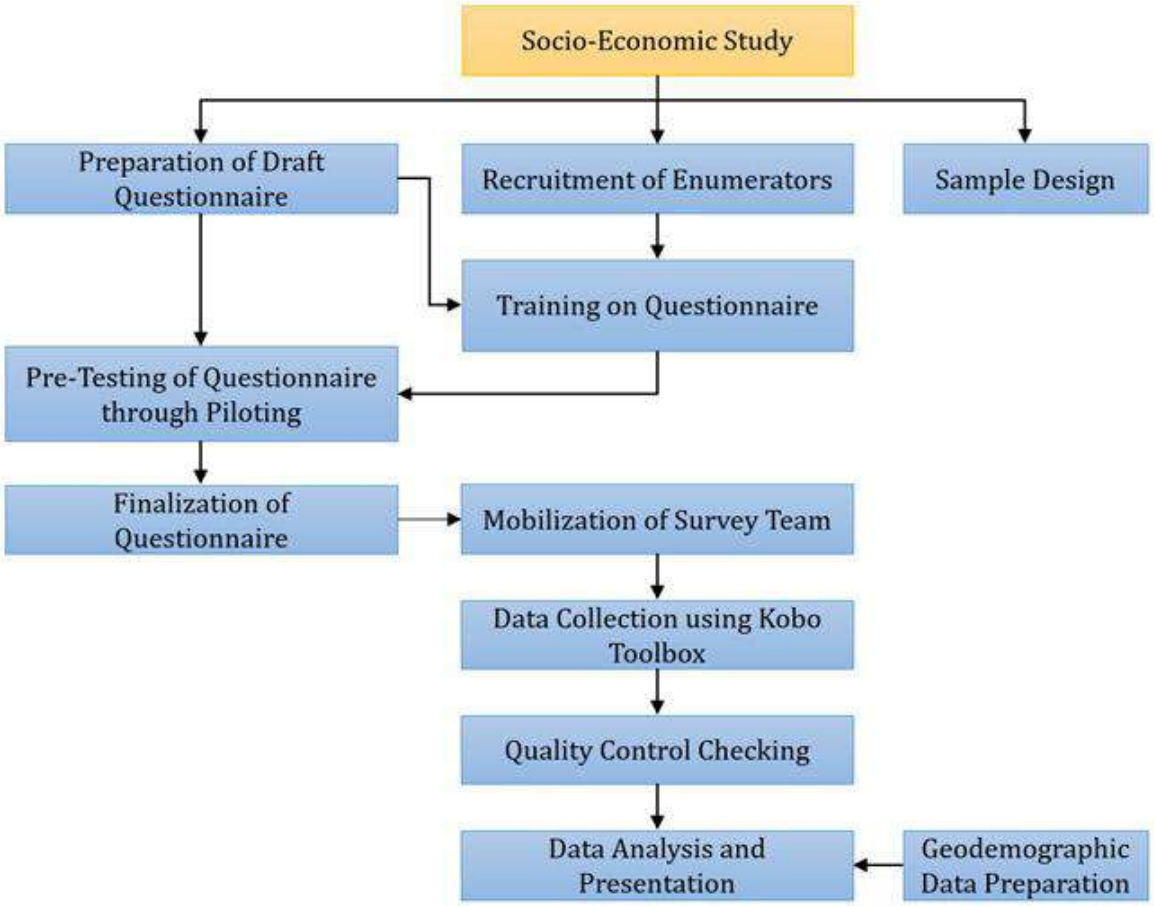


Figure 2-1: Flow Chart of the Working Procedure

2.2.1 Questionnaire Design

A comprehensive pre-coded structured questionnaire was developed by consultant for the socio-economic survey. The questionnaire, designed to meet the project's Terms of Reference, underwent adjustments suggested by the Socio-economic expert and other consultants for improved functionality in the field and was finally approved by the PCO. According to ToR, the sample size should be such that all kind of statistical analysis can be performed at least with a 95% confidence level. There should be a sufficient number of samples from all unions of the Upazila so that statistical analysis can be conducted at a Union level. The household survey is conducted using the mobile-based automated KoboToolbox. KoboToolbox was used to collect all the data which includes surveying 400 households for all the fourteen union.

The outcomes of the socio-economic survey present a thorough perspective on the overall well-being of the Upazila. Adhering to the Terms of Reference, various dimensions, including economic, demographic, religious, educational, occupational, and recreational aspects have been meticulously explored. To ensure precision, the questionnaire has been modified in consultation with our expert team, enriching the data with insights. This commitment to a comprehensive and reliable assessment aims to support informed decision-making and sustainable

development initiatives in the Upazila. As per ToR, list of variables for socio-economic survey are given below in the Table 1

Table 2-1: List of Variables for Socio-economic Survey

Item	Illustrated
Demographic Information	Household size; age, gender, religion of the H/H members; no. of physically and mentally challenged member; migration history of H/H members in last five years
Education Status	Education status of H/H members
Occupation Pattern	Primary and secondary occupation of H/H members
Income/ Expenditure Level	Amount and sources of Income, expenses in different head (food, rent, education, transport, ICT etc.), Loan (type, amount, source)
Asset Ownership	Ownership of asset of the H/H by type and quantity. The list of assets to be considered and their definition should be finalized by a team consisting of Team Leader, Sr. Urban Planner of all consulting firms and officers of PCO.
Water source	Location, number, type, quantity for potable and other use etc.
Sanitation Condition	Type, number, location
Waste Generation and Disposal	Types of waste generated, place of disposal etc.
Energy consumption	Energy source, purpose of use, consumption amount etc.
ICT use	Source, type, time spent in use etc.

Source: Terms of Reference (ToR) for Review and Update of Nawabganj Upazila Master Plan Prepared by UDD

2.2.2 Pilot Survey

It is important to ensure the questionnaire's effectiveness, clarity, and reliability before its final use. To achieve this, a pilot test or trial test of the questionnaire was conducted in the project area. The trial test served the purpose of identifying potential issues, ambiguities, or challenges that both surveyors and respondents could face when filling out the questionnaire. The insights gained from this pilot test were subsequently utilized to refine and modify the questionnaire.

Pilot Testing Process: The pilot test was carried out in the Nawabganj Upazila with a sample of individuals who represented the target population of the study. In the pilot test the surveyors were first time introduced with KoboToolbox and they carried out the task according to instructions and identified the problems faced during survey. The pilot test employed a

convenience sampling method, selecting participants whose demographic characteristics matched the intended survey respondents. The questionnaire was administered to these participants, and their responses were observed. Any difficulties they faced in understanding or answering the questions were noted for further refinement.

Findings from Trial Test: The trial test yielded valuable insights that highlighted certain issues with the initial version of the questionnaire. Some problems related to language understanding, and suggestions from local people like construction of sluice gates, canal excavation, building embankment and dams, drainage system etc. were incorporated and various occupation types were added to solve the questionnaire-related problems and further finalize it for the survey.

Questionnaire Modification: Following the pilot test findings, the questionnaire underwent several modifications to address identified issues and improve its overall effectiveness.

The modified Socio-economic Questionnaire has been attached in Appendix

2.2.3 Sample Size Selection

According to Population Census, 2011 by BBS, there are 70757 households in Nawabganj Upazila. The projected population and number of households for each union have been calculated for the year 2023. In 2023 the number of households was estimated at around 88307. The following Table shows the distribution of the households surveyed concerning the total households by different income groups and the spatial distribution of surveyed households by unions.

Table 2-2: **Sample Distribution by Union**

Union Name	Population (2023)	Number of Households	Union-Wise Sample Size	Union-Wise Sample Size Percentage
Agla	20384	4740	21	5
Bakshanagar	24368	5667	26	7
Bandura	35766	8318	38	10
Barrah	30630	7123	32	8
Baruakhali	19432	4519	20	5
Churain	27717	6446	29	7
Galimpur	15417	3585	16	4
Jantrail	28304	6582	30	8
Joykrishnapur	19834	4613	21	5
Kailail	32402	7535	34	9
Kolakopa	27092	6300	29	7
Nayansree	31883	7415	34	9
Shikari Para	20991	4882	22	6

Union Name	Population (2023)	Number of Households	Union-Wise Sample Size	Union-Wise Sample Size Percentage
Sholla	45499	10581	48	12
Total	**379719**	**88307**	**400**	**100**

Any sample size for any research work is not exact. It is only a probability sample. So, sampling error should be taken into account. Here, the sample size is calculated for the population size of each Union. But the entire population of Nawabganj upazila has also been taken into consideration. That way, using the **Australian Bureau of Statistics'** sample size calculator is best suited for this. Because this calculator calculates like this:

Confidence level- 95%

Population size- 88, 307 households.

Proportion - 50%

Confidence Interval/Margin of error-0.049/5%

Upper-0.54900

Lower-0.45100

Standard Error (Sample error)-0.02500

Relative standard Error - 5

To cover all the respondents, data from the head of household (eldest person/earner member) is collected. A stratified Sampling method has been followed throughout the survey so that data from all gender, age, income, and occupation groups are highlighted.

2.2.4 Survey Schedule

A detailed schedule for the survey work was submitted to the PCO of LGED. According to that schedule, the socio-economic survey was started on 1st November, 2023 which took 04 days to complete the household survey in all the unions of Nawabganj Upazila.

2.2.5 Engagement of Survey Team

In the selection of the survey team, the consultant considered both prior experience in similar survey activities and the educational qualifications of the investigators. Additionally, the team received guidance from a designated field supervisor. The appointed team members for the socio-economic survey were chosen from students of Dohar-Nawabganj College.

2.2.6 Training of Survey Team

On October 16, 2023, a significant milestone was achieved in the socio-economic survey through a successful training session at Dohar-Nawabganj College. The training was equipped surveyors with essential skills, including methodologies, data collection techniques, and ethical considerations. The interactive session aimed to ensure a clear understanding of roles and responsibilities, fostering enthusiasm and commitment among the team. This foundational training is expected to empower surveyors to gather accurate socio-economic data, contributing significantly to broader research objectives.

Figure 2-2: Training of Survey Team

2.2.7 Survey Team's Household Data Collection

After a thorough training session, the survey team commenced the data collection phase. To improve the reliability of household data, survey teams were equipped with GPS-enabled devices (KoboToolbox) to accurately log locations of surveys, ensuring a geographically diverse and representative data collection across the Upazila. Equipped with acquired knowledge and skills, the surveyors visited households in the target area, demonstrating commitment and diligence. Conducting door-to-door interviews, the team maintained professionalism and adhered to ethical guidelines, ensuring the accuracy and integrity of the collected socio-economic information. This hands-on fieldwork not only allowed practical application of training but also facilitated building trust and cooperation within the community.

Figure 2-3: Socio Economic Survey in Nawabganj

2.2.8 Database Preparation

Following the completion of field-level survey activities, a comprehensive database was created to align with the survey questionnaire. KoboToolbox was used to generate Excel sheets automatically for this database. A coding system was implemented in specific fields to streamline the data input process. All data were stored in Microsoft Excel.

2.2.9 Survey Data Processing

All the data collected from the field were managed using Microsoft Excel software. The entire dataset was computerized to facilitate the efficient preparation of the desired presentation for the relevant data. In this section, socio-economic data have been presented in three formats: tabular form, graphical representation, and textual/report form.

Tabular Form: Tabular format means presenting information in rows and columns, rather than paragraphs, to break down specific data into a quickly scannable layout. It is easy to analyze and understand large datasets. The findings of the summary are mainly depicted here in tabular form.

Graphical Representation: Graphical representation is a form of visually displaying data through various methods like graphs, diagrams, charts, and plots. It helps in sorting, visualizing, and presenting data in a clear manner through different types of graphs. Statistics mainly use graphical representation to show data. The analysis of findings is depicted in a graphical form. Pie charts, Bar charts and Column charts are used to analyze the collected data.

Textual/Report form: All the tables, graphs, and chart is described in report form with the analysis of the dataset.

2.3 Findings of the Socio-Economic Survey

2.3.1 Population Distribution by Age and Gender

According to BBS (2011), there are 70757 total households in Nawabganj Upazila, with an average size of 4.5. There are around 1,49,298 men and 1,69,513 females in the total population

of 3,18,811. Sholla Union has the largest population among all the Unions, whereas Galimpur Union has the lowest population. Additionally, Kailail Union shows the highest level of average household size, while Kolakopa has the smallest number of families because of small household size. Sholla Union has the largest area among the Unions hence the largest number of households belongs in Sholla Union which is 8400 and Galimpur has the lowest number of households. So, areas with the higher population also have the higher number of households.

Table 2-3 Population and Household Size

Union	Households	Population			Average Household Size
		Male	Female	Total	
Agla	3815	**8102**	**9012**	17114	4.4
Bakshanagar	4748	9668	10791	20459	4.3
Bandura	6773	14028	16001	30029	4.4
Barrah	5661	12138	13579	25717	4.5
Baruakhali	3559	7557	8758	16315	4.5
Churain	5105	10896	12375	23271	4.5
Galimpur	2874	6024	6920	12944	4.5
Jantrail	5147	10996	12768	23764	4.6
Joykrishnapur	3833	7496	9157	16653	4.4
Kailail	5666	13051	14154	27205	4.8
Kolakopa	5195	11613	11133	22746	4.2
Nayansree	6010	12049	14720	26769	4.4
Shikari Para	3971	8057	9567	17624	4.4
Sholla	8400	18103	20098	38201	4.5
Total	**70757**	**149298**	**169513**	**3,18,811**	**4.5**

(Source: BBS 2011, Community Report, Dhaka, 2015)

Table 4 depicts the percentage distribution of population by age group, residence, and community. It shows that the majority of the people's age fall between 30 to 49 years and the minority of people is in between 60 to 64 years in Nawabganj Upazila.

Table 2-4: Percentage Distribution of Population by Age Group, Residence and Community

Union	Age Group (in Years)									
	0-4	5-9	10-14	15-19	20-24	25-29	30-49	50-59	60-64	65+
Agla	9.4	10.8	11.5	9.1	9.2	9.0	25.1	6.6	3.1	6.3
Bakshanagar	9.4	10.4	10.9	8.9	9.7	9.4	25.0	7.1	3.2	6.1
Bandura	9.2	10.7	10.9	9.1	9.6	9.2	24.8	7.0	3.4	6.1
Barrah	10.1	10.7	11.5	9.0	9.4	8.7	24.0	7.2	3.2	6.1
Baruakhali	10.1	11.0	11.2	9.3	9.7	9.4	22.5	6.9	3.2	6.8

Churain	9.4	11.4	11.5	8.9	9.2	9.4	23.9	6.5	3.4	6.5
Galimpur	9.3	11.4	11.5	8.6	9.4	9.2	25.4	6.3	2.9	6.0
Jantrail	9.5	11.4	11.1	9.1	9.2	9.2	24.0	6.9	3.3	6.3
Joykrishnapur	10.4	11.4	10.8	8.5	8.2	8.2	22.3	8.2	4.3	**7.8**
Kailail	10.4	11.8	11.4	8.1	9.0	8.9	24.0	6.6	3.4	6.5
Kolakopa	9.5	10.9	10.6	8.6	9.5	10.2	26.7	6.3	2.8	5.0
Nayansree	9.7	10.2	10.8	9.0	8.9	9.1	24.3	7.6	3.6	7.0
Shikari Para	10.1	11.2	11.4	8.9	8.8	9.0	23.3	7.5	3.5	6.3
Sholla	10.0	11.6	11.4	8.7	9.0	8.7	23.6	6.9	3.4	6.8

(Source: BBS 2011, Community Report, Dhaka, 2015)

Status of Age Group

Table 2-5: Age Group Status

Age group	Number of Respondents
9-15	2
20-24	46
25-29	44
30-49	170
50-59	94
60-64	28
65+	16
Total	**400**

(Source: Field Survey, 2023)

From the survey, the highest number of respondents fall between the category of 30 to 39 years. So, the surveyed population is mostly middle-aged. The predominance of a mid-aged population in all the unions suggests a potential future labor shortage. To counter this, targeted vocational training for younger demographics and policies to attract younger families are recommended.

Status of Gender

Table 2-6: Gender Group Status

Gender	Number of Respondents
Male	249
Female	151
Total	**400**

(Source: Field Survey, 2023)

Female population are surveyed alongside male population in Nawabganj Upazila. A significant number of surveyed respondents are female which represents a better understanding of the socio-economic status of the Upazila.

2.3.2 Status of Physical Disability

Table 2-7: Percentage Distribution of Population by Physical Disability

Speech	Vision	Hearing	Physical	Mental	Autistic
0.2	0.3	0.1	0.5	0.2	0.1

(Source: BBS 2011, Community Report, Dhaka, 2015)

The provided data offers insights into the prevalence of various disabilities within a given population. Each number in the data represents the percentage of individuals with specific disabilities. Notably, physical disabilities are the most prevalent, affecting approximately 0.5% of the population, followed closely by vision disabilities at 0.3%, and speech at 0.2%. Hearing, and autistic impairments have similar prevalence rates, each affecting 0.1% of the population. These findings highlight the diverse nature of disabilities within the surveyed population, with physical and mental disabilities being relatively more common compared to sensory impairments. Understanding the prevalence of these disabilities is crucial for policymakers, healthcare providers, and support organizations to allocate resources and develop tailored programs to address the unique needs of individuals with disabilities and promote inclusivity and accessibility in society.

2.3.3 Type of House Ownership

Table 2-8: Percentage of House Ownership Pattern

Union	Owned	Rented	Rent free
Agla	89.3	6.6	4.4
Bakshanagar	84.4	10.8	4.8
Bandura	84.3	11.4	4.4
Barrah	89.5	5	5.5
Baruakhali	92.6	2.6	4.8
Churain	88.9	7.1	4
Galimpur	86.3	10.3	3.3
Jantrail	92.1	4.5	3.4
Joykrishnapur	92.5	4.3	3.2
Kailail	93.3	1.8	4.8
Kolakopa	69.4	27.3	3.2
Nayansree	93.4	1.7	4.9
Shikari Para	94.6	1.4	3.9
Sholla	94.5	1.9	3.6

(Source: BBS 2011, Community Report, Dhaka, 2015)

The provided data gives an understanding about the housing tenure patterns across various unions. Shikari Para and Sholla Union have the highest homeownership rates, with 94.6% and

94.5% respectively of households owning their homes. This suggests a strong inclination towards property ownership in these Unions, possibly driven by factors like economic stability and housing affordability. On the other hand, Kolakopa Union exhibits a notably high rental rate at 27.3%, indicating a substantial proportion of residents in this union prefer renting, reflecting a more transient population or potentially a higher availability of rental properties. Nayansree union has the highest percentage of 4.9% for rent-free housing. Overall, the findings underscore the diverse housing tenure preferences across different unions, reflecting variations in economic conditions and residential choices within the surveyed area. Understanding these patterns can guide housing and urban development policies tailored to the specific needs and preferences of each union's residents.

Table 2-9: Current House Ownership Status

Type of House Ownership	Number of Respondents
Owned	376
Rented	22
Temporary Places	2
Total	**400**

(Source: Field Survey, 2023)

From the field survey it is seen that housing status of the respondents are mostly owned. A small number of people reside in rented houses.

2.3.4 Marital Status

Table 2-10 Marital Status of People

Union	Unmarried (%)	Married (%)	Widowed (%)	Divorced (%)
Agla	43.1	56.5	0.4	0.1
Bakshanagar	40.7	58.2	1	0.2
Bandura	41.4	57.4	0.9	0.2
Barrah	41.4	57.5	0.9	0.2
Baruakhali	41.0	58.0	0.9	0.2
Churain	41.2	57.9	0.7	0.1
Galimpur	41.0	58.4	0.5	0.1
Jantrail	40.3	58.4	1.1	0.1
Joykrishnapuroypur	36.5	62.3	1.0	0.2
Kailail	39.8	59.4	0.6	0.1
Kolakopa	40.3	58.6	0.9	0.1
Nayansree	39.4	59.4	1.1	0.1
Shikari Para	39.8	58.9	1.1	0.2
Sholla	39.2	60.1	0.6	0.1

(Source: BBS 2011, Community Report, Dhaka, 2015)

The Table shows the marital status of residents across different Unions. Joykrishnapur and Sholla Union stand out with the highest percentages of married individuals at 62.3% and 60.1%, respectively. These unions might have stable family-oriented communities. In contrast, Agla Union has the highest percentage of unmarried individuals at 43.1% suggesting a relatively younger or single population segment. Jantrail, Nayansree, Shikari Para has the highest percentages of widowed individuals at 1.1% which may indicate an older population or specific life circumstances in those unions. Divorced or separated individuals constitute a relatively smaller portion across all unions with percentages ranging from 0.1 to 0.2% These findings provide valuable demographic insights into the marital status of residents within each union, highlighting variations in family structure and life stages across the areas. In unions with a high percentage of widowed individuals, like Jantrail, Nayansree, Shikari Para can initiate community support groups and counseling services to address social isolation and mental health issues among this demographic. Understanding these patterns can support social and community services tailored to the specific needs of each union's residents.

2.3.5 Education Status

Table 2-11: Education Status

Level of Education	Number of Respondents
Uneducated	51
Primary	113
8 Grade	85
SSC	82
HSC	39
Graduate and above	30
Total	**400**

(Source: Field Survey, 2023)

From the table it is evident that the highest number of respondents have completed primary education. The lowest number of respondents are graduate and are pursuing higher education.

2.3.6 Occupation Status

Table 2-12: Occupation Status

Occupation	Number of Respondents
Carpenter	9
Farmer	105
Housewife	59
Student	17
Fisherman	8
Doctor	4
Driver	13
Weaver	5
Construction worker	18

Unemployed	28
Private jobs	28
Businessman	73
Technician	15
Teacher	14
Industrial Worker	4
Total	**400**

(Source: Field Survey, 2023)

From the above table it is seen that highest respondents are farmers as Nawabganj is an agriculture based Upazila. Businessman and housewife are also prominent here.

2.3.7 Income Status

Table 2-13: Income Status

Income (Taka)	Number of Respondents
<10,000	51
10,000-20,000	136
20,000-40,000	161
>40,000	52
Total	400

(Source: Field Survey, 2023)

Highest respondents fall under the category of 10,000 to 20,000 Taka income range.

2.4 Analysis of Findings

Analysis of the findings of demographic, social, infrastructures, utilities collected from the field survey are given below.

2.4.1 Demographic

2.4.1.1 Level of Education

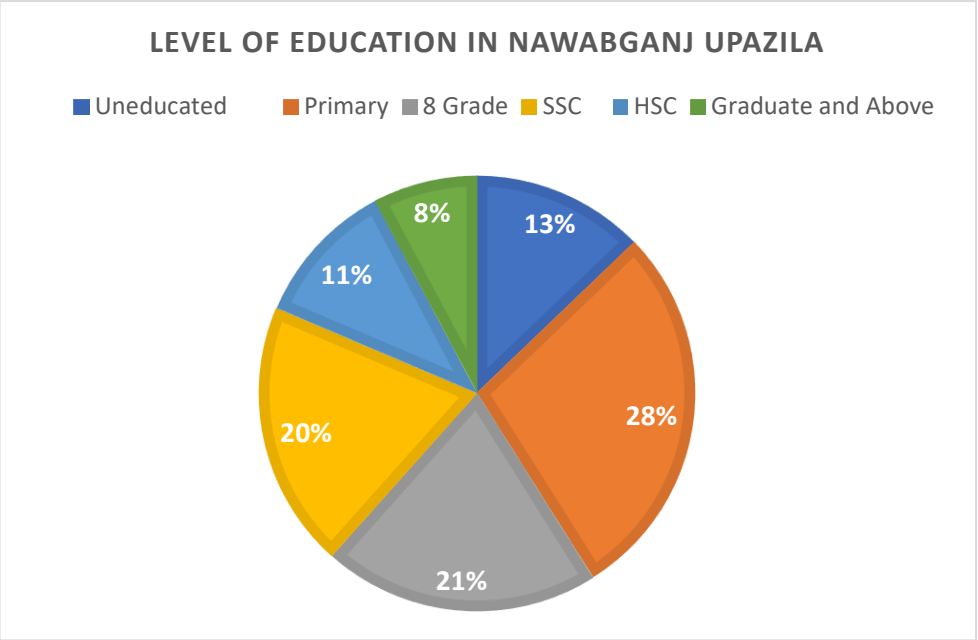


Figure 2-4: Level of Education

(Source: Field Survey, 2023)

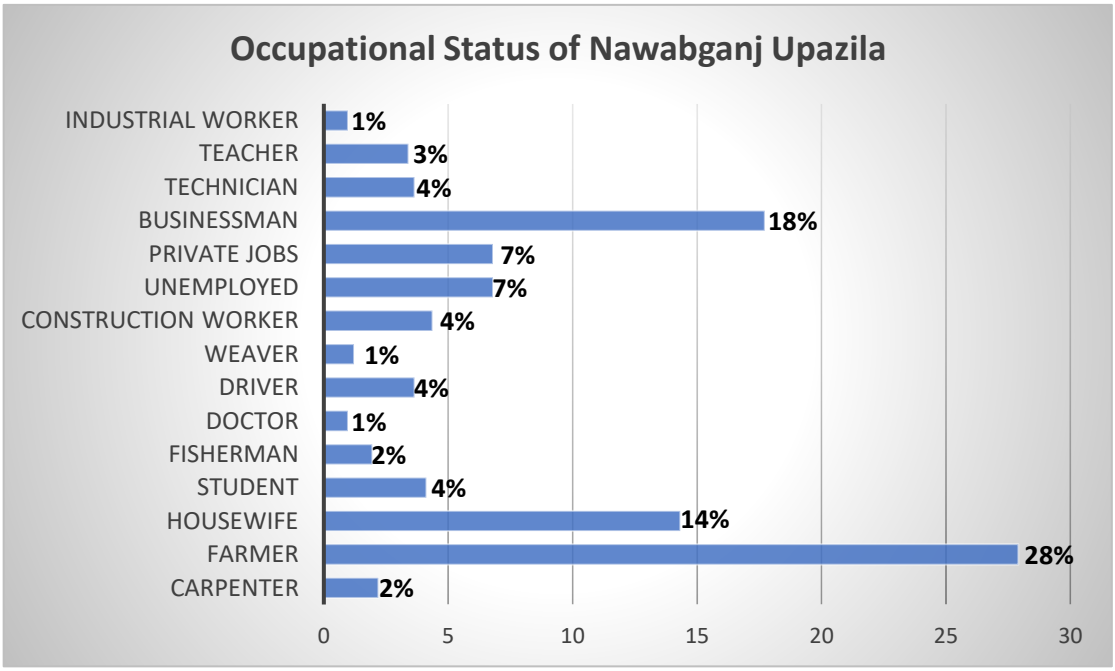
Based on the survey on the education level distribution for Nawabganj Upazila, the pie chart illustrates overall education scenario. The largest portion of individuals have received a Primary education, constituting the majority at 28% of the population. This indicates that a significant portion of Nawabganj residents have completed their primary schooling, which is a fundamental level of education. In contrast, there are 13% of individuals who are categorized as Uneducated, signifying that a portion of the population may not have formal education, which could be an area of concern for literacy and skill development. To address the 13% uneducated population, initiation of adult education programs focusing on literacy and basic skills training, particularly in Sholla union where literacy rates are lowest can be helpful.

The other educational categories include 8 Grade, SSC, HSC, and Graduate and Above, each representing 21%, 20%, 11%, and 8% of the population, respectively. In Bandura union percentage of people perusing higher education is more than other union. These figures suggest a diverse mix of educational backgrounds, with a significant number of individuals achieving at least a secondary level of education.

In summary, this education data highlights the diverse educational landscape of Nawabganj Upazila, emphasizing the need for continued efforts in promoting literacy and access to education for those with lower educational attainment as the graduate level is only 8% of the population and while also acknowledging the presence of individuals with higher levels of education in the community. Tailored educational programs and opportunities could further enhance the overall

educational outcomes and skills development for the residents. educational programs and opportunities have the potential to significantly improve overall educational outcomes and skill development for the residents.

2.4.1.2 Status of Occupation



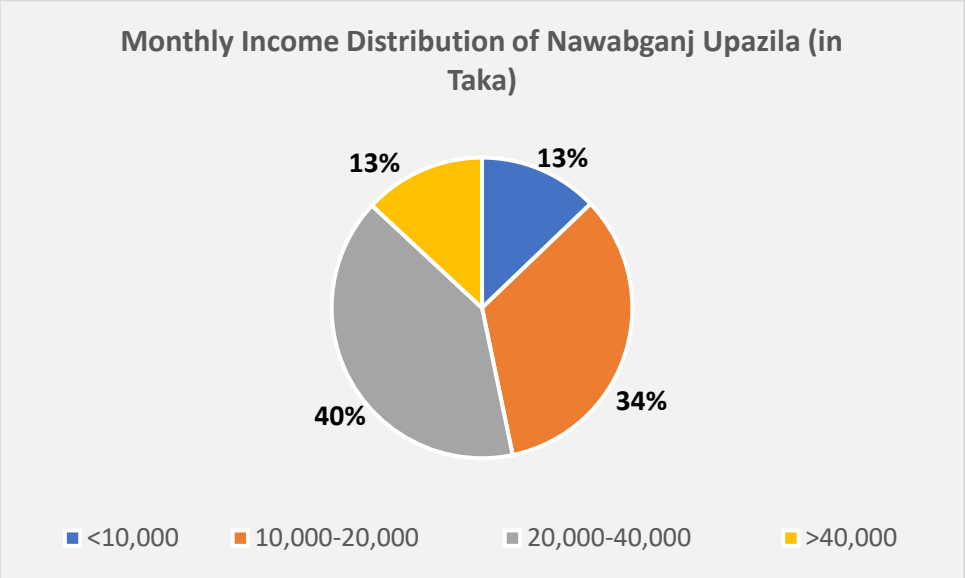
(Source: Field Survey, 2023)

Figure 2-5 Status of Occupation

Based on the data provided and the corresponding bar chart, it is evident that the distribution of occupations in the surveyed population is quite diverse. The largest proportion of individuals are engaged in Agriculture as farmers constituting 28% of the sample. In Kailail and Sholla people are mostly engaged in agricultural activities. This finding suggests that agriculture plays a significant role in the livelihoods of the surveyed population. Business follows behind, with 18% of the sample involved in entrepreneurial endeavors. In Kolakopa highest percentage of the surveyed people engaged in business. A significant portion of the population is housewives as many female respondents were surveyed. The data also indicates that a considerable portion of the population is unemployed and engaged in private sector jobs at 7%. There are also students, technician, driver, construction worker all consists of 4% of the surveyed population. Teachers, doctors, weavers, and industrial workers are consisting of a small portion of the population.

This information sheds light on the occupational landscape of the surveyed group, emphasizing the importance of agriculture and entrepreneurship in their livelihoods, while also highlighting the need for opportunities and support in addressing unemployment.

2.4.1.3 Level of Income



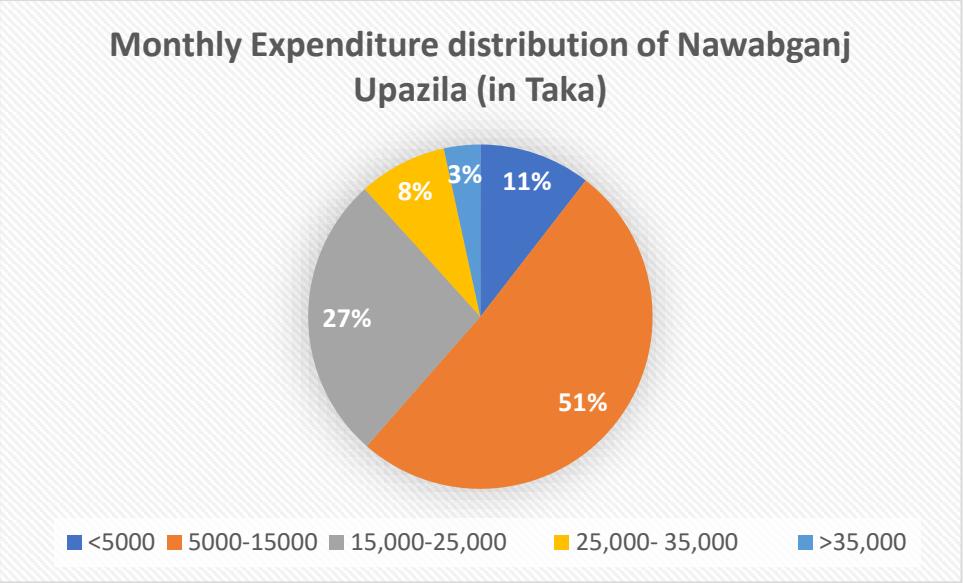
(Source: Field Survey, 2023)

Figure 2-6: Level of Income

Based on the income distribution data for Nawabganj Upazila and the corresponding pie chart, it is clear that the town's income landscape is quite varied. The largest proportion of individuals fall within the income range of 20,000 to 40,000 Taka, constituting a significant majority at 40% of the population. This suggests that a substantial portion of residents have moderate incomes, which may reflect an upper-middle-class demographic. In contrast, a notable portion of the population, 13%, earns over 40,000, indicating the presence of an affluent group within the town. In Kailail Union, people earning more than 40,000 Taka are prominent. Additionally, there are 34%, whose incomes fall within the 10,000 to 20,000 Taka range, reflecting a considerable middle-income segment. The fact that 13% of individuals earn less than 10,000 Taka highlights the existence of economic challenges and income disparities within Nawabganj Upazila. In Barrah Union, people earning less than 10,000 Taka are the highest.

This data provides valuable insights into the town's socioeconomic landscape, showing a substantial upper-middle class income population indicating most of the people are well-off in the Upazila. It underscores the importance of targeted policies and initiatives to address income inequality and improve the overall economic well-being of the community.

2.4.1.4 Level of Expenditure



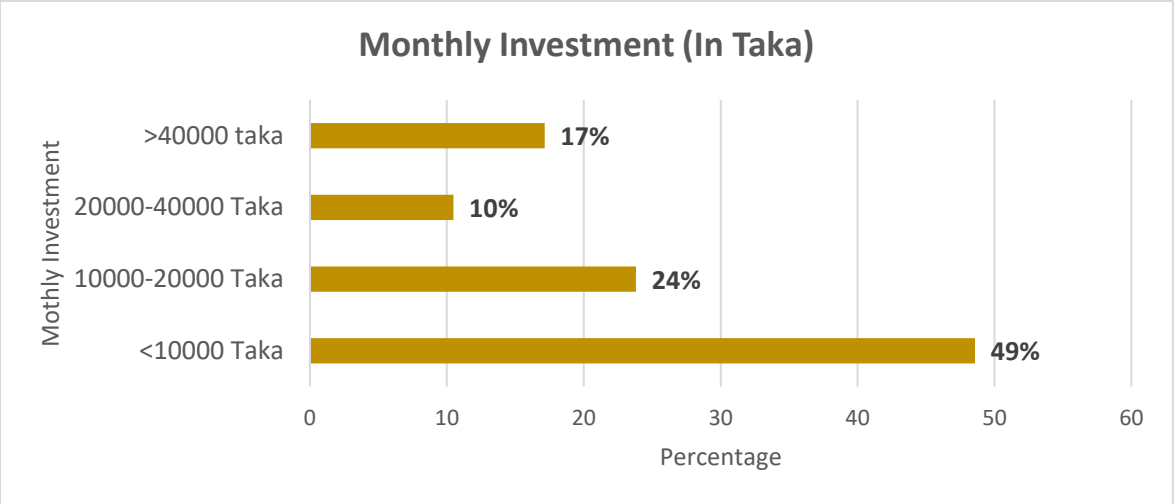
(Source: Field Survey, 2023)
Figure 2-7: Level of Expenditure

Based on the expenditure distribution data for Nawabganj Upazila and the corresponding pie chart, it is evident that the expenditure patterns exhibit a diverse range of financial behaviors. The largest portion of individuals falls within the expenditure range of 5,000 to 15,000 Taka, constituting the majority at 51% of the population. This suggests that a significant proportion of Upazila's residents are managing their expenses within a moderate budget, which may indicate a thrifty or cost-conscious approach to their financial lives.

Moreover, 11% of the individuals are found in the less than 5,000 Taka expenditure brackets. In Baruakhali union, most respondents are found to spend less than 5000 Taka. On the other hand, 27% of respondents are in the 15,000 to 25,000 Taka range, indicating a smaller but still substantial portion of the population with somewhat higher expenditure levels. The data also reveals that 8% of the individuals fall within the 25,000 to 35,000 Taka range, signifying a segment of the population with relatively higher spending capacity. Only 3% of the population reported expenditures exceeding 35,000 Taka, highlighting a rare and potentially more affluent group within the community like Bakshanagar Union.

In summary, this expenditure data provides valuable insights into the financial habits of Nawabganj Upazila's residents, showcasing a mix of spending patterns, with a significant focus on moderate and lower spending. It underscores the importance of financial literacy and support programs that cater to the diverse needs and income levels of the community, aiming to enhance overall financial well-being and economic stability.

2.4.1.5 Status of Investment

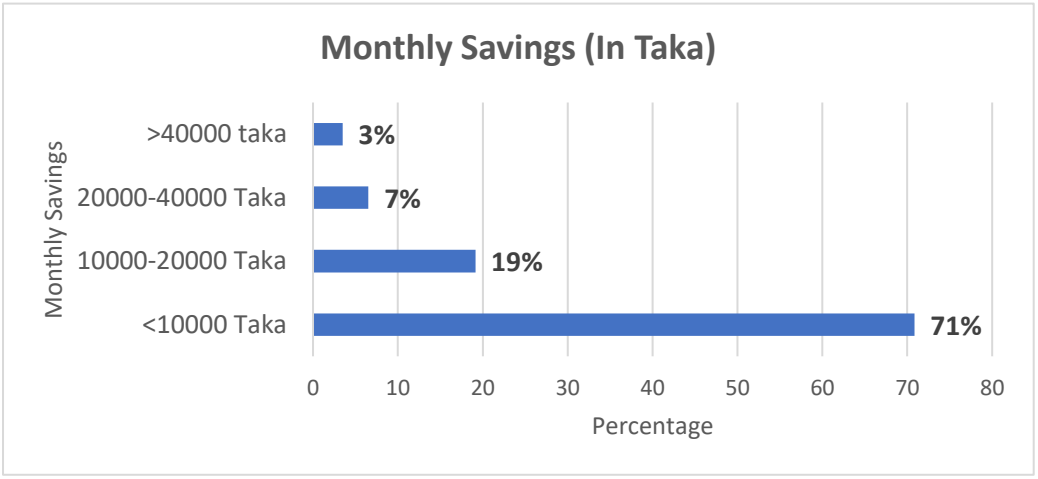


(Source: Field Survey, 2023)

Figure 2-8: Level of Monthly Investment

Based on the provided data, the monthly investments in Nawabganj Upazila are distributed across different income brackets. The majority of investors, comprising 49%, fall into the category of less than 10,000 Taka, indicating a significant portion of the population is investing smaller amounts. Following this, 24% of investors fall within the range of 10,000 to 20,000 Taka, while 10% invest between 20,000 to 40,000 Taka monthly. A smaller yet notable portion, 17%, invests over 40,000 Taka monthly. This distribution suggests a diverse range of investors with varying financial capacity and risk tolerance levels within the Upazila, reflecting a mix of economic statuses and investment preferences.

2.4.1.6 Status of Savings

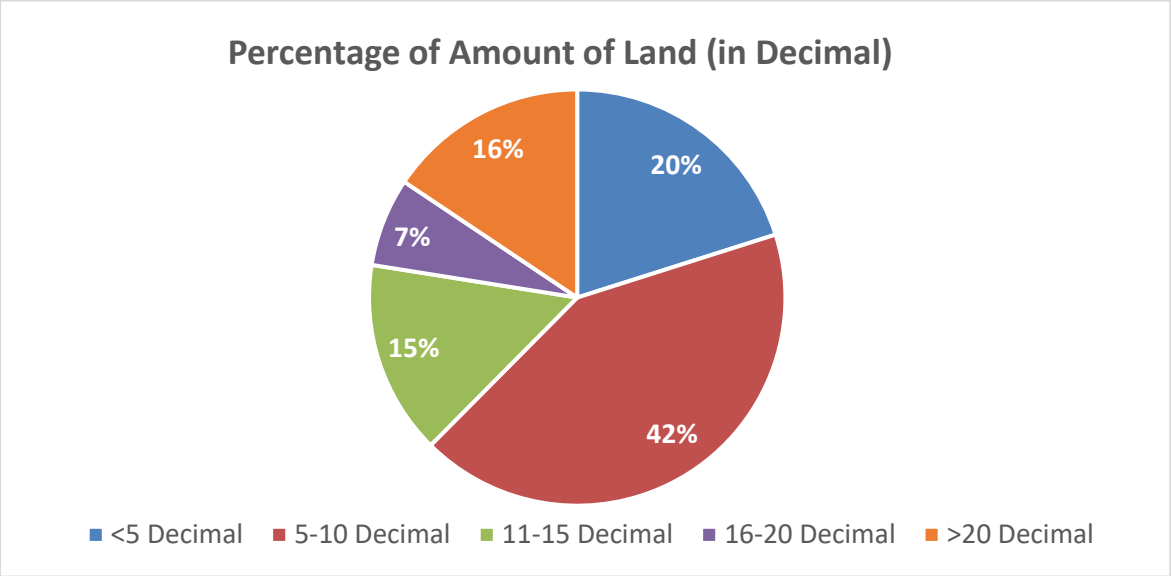


(Source: Field Survey, 2023)

Figure 2-9:: Level of Monthly Savings

The data on monthly savings in Nawabganj Upazila indicates a similar pattern to that of monthly investments, albeit with some differences. The majority of savers, constituting 71%, have monthly savings of less than 10,000 Taka, suggesting a significant portion of the population is able to save smaller amounts. Following this, 19% of savers fall within the range of 10,000 to 20,000 Taka, while 7% save between 20,000 to 40,000 Taka monthly. A smaller yet noteworthy portion, 3%, saves over 40,000 Taka per month. This distribution reflects a diverse range of saving capacities within the Upazila, with varying levels of financial capability and propensity to save among its residents.

2.4.1.7 Status of Land Ownership



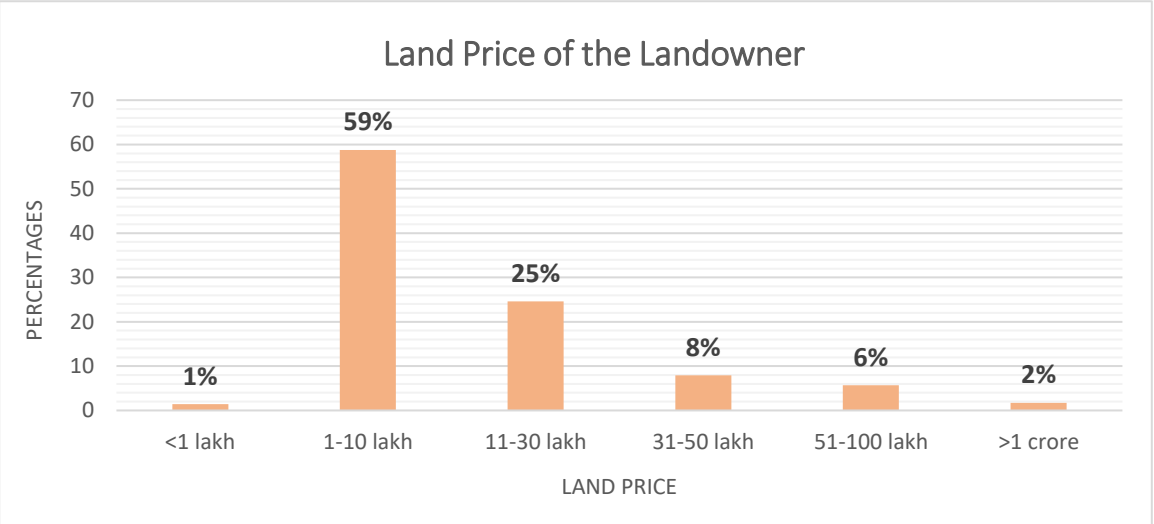
(Source: Field Survey, 2023)

Figure 2-10: Land Ownership Status

The amount of land of the individuals varies according to the social class of the people shown in figure 10-10. From the survey it is seen that the highest percentage is 5 to 10 decimal land ownership of the respondents. Less than 5 decimals are the second highest indicating very limited amount of land ownership. A significant percentage of respondents have more than 20 decimal lands of their own. This indicates that many people in Nawabganj Upazila have an adequate amount of land.

A variety of social classes are seen from the socio-economic survey where people having less than 5 decimal land and 40 to 50 decimal lands both data indicate social inequalities. A combination of upper class and lower class is noticeable from the survey.

2.4.1.8 Status of Land Price



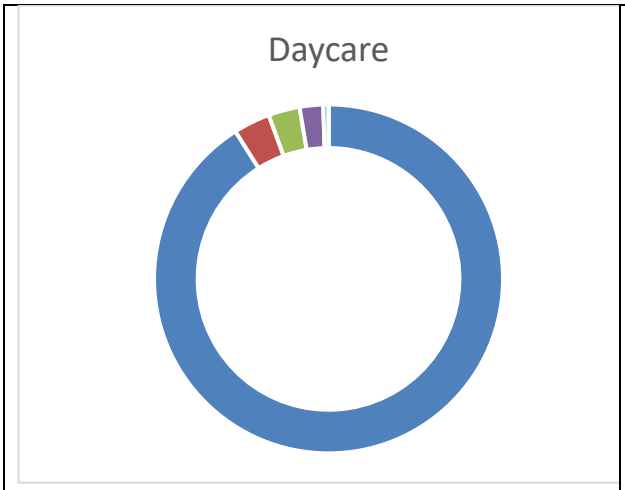
(Source: Field Survey, 2023)

Figure 2-11:: Land Price Status

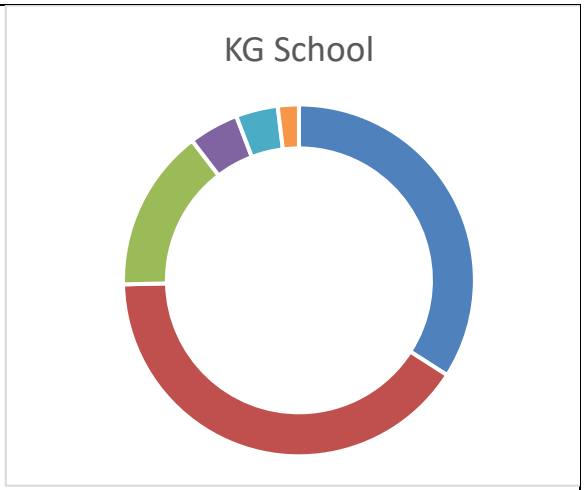
Figure 10-11 outlines the distribution of land prices among landowners in Nawabganj Upazila. It suggests that the majority of landowners, comprising 59%, own land valued between 1 to 10 lakh Taka. Following this, 25% own land valued between 11 to 30 lakh Taka, while 8% own land valued between 31 to 50 lakh Taka. Additionally, 6% of landowners possess land valued between 51 to 100 lakh Taka, and another 2% own land valued at over 1 crore Taka. Moreover, a smaller portion, constituting 1%, own land valued below 1 lakh Taka. This distribution indicates varying levels of property ownership and valuation among landowners in the Upazila, reflecting a diverse landscape of property values and ownership statuses.

2.4.2 Social Aspects

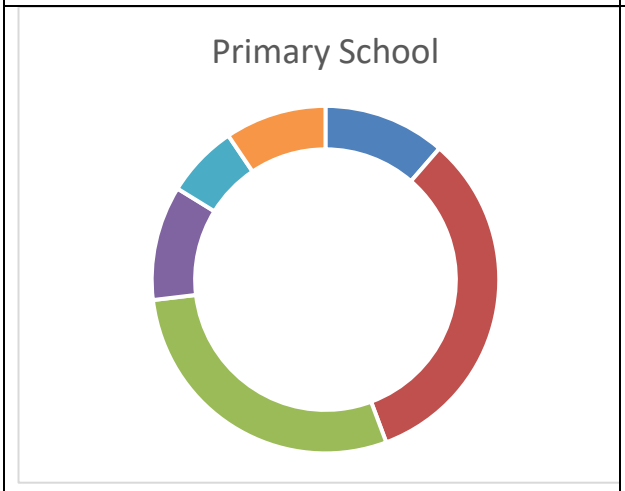
2.4.2.1 Condition of Education



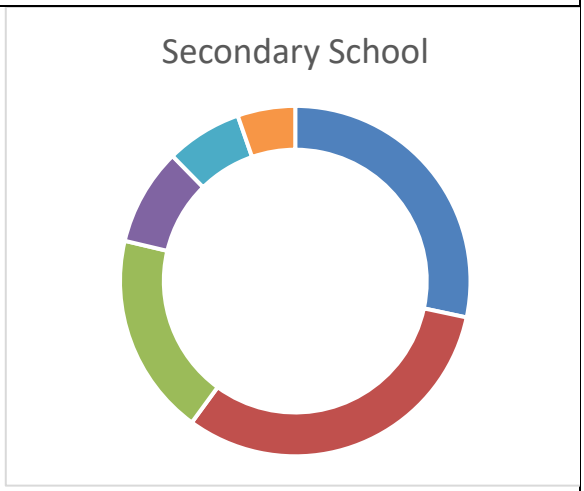
Almost all the individuals agree there are totally absent, and some think there are very few “Day Care” in Nawabganj Upazila.



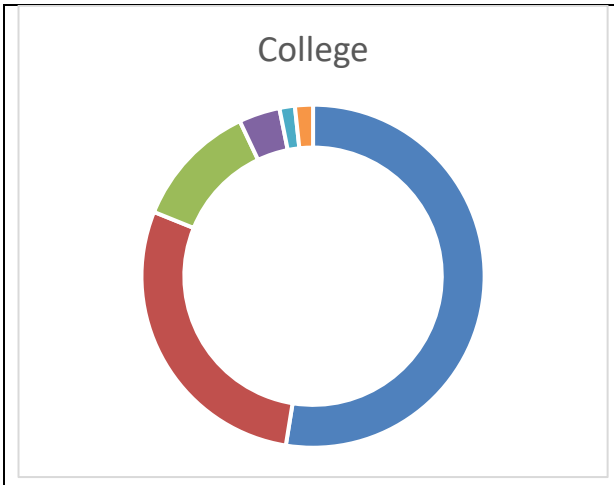
Majority of individuals think there are totally absent or very few “KG School” in Nawabganj Upazila.



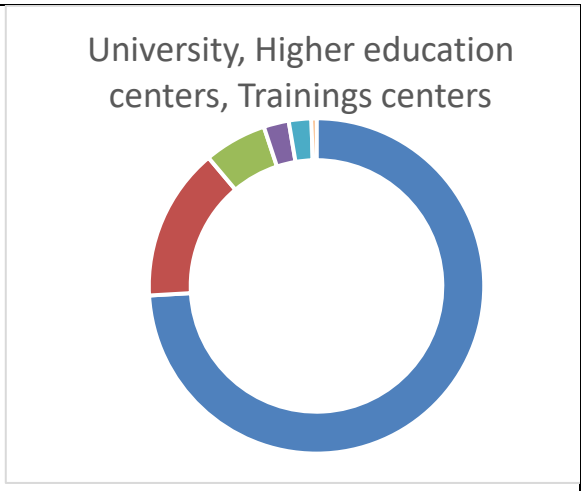
Majority of individuals think there exists “Primary School” in Nawabganj but the quantity is inadequate compared to the population.



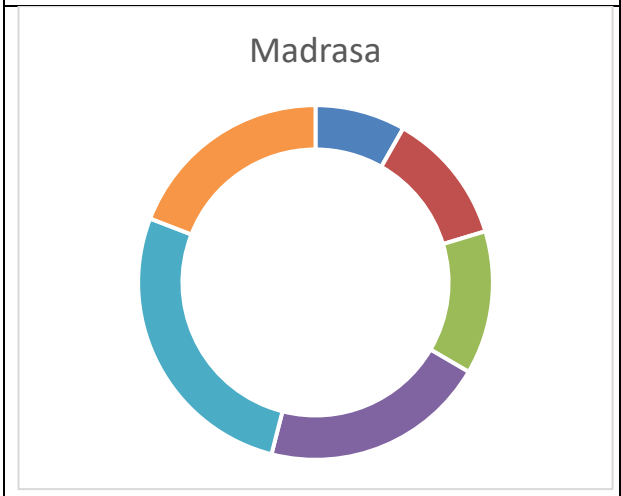
Majority of individuals think there are very few or inadequate “Secondary School” in Nawabganj Upazila.



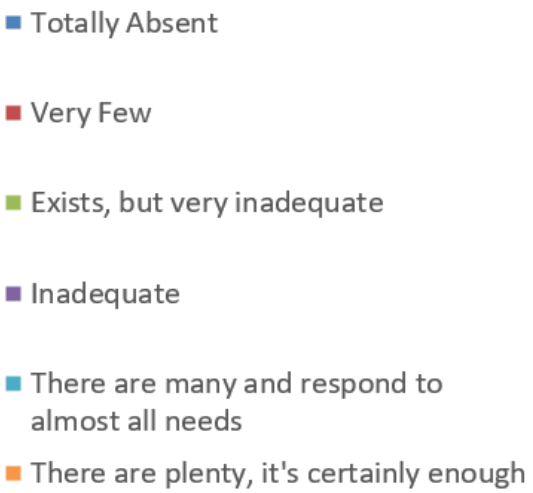
Majority of individuals think they are totally absent or there are very few Colleges.



Majority of individuals agree that university and higher education centers are totally absent in Nawabganj Upazila.



Majority of individuals think there are many "Madrasas" in the Upazila.



(Source: Field Survey, 2023)

Figure 2-12: Condition of Education Facilities

The findings from the community's perception of educational facilities in Nawabganj Upazila indicate several noteworthy observations. Firstly, a majority of individuals believe that there is a significant lack of "Day Care" centers in the area, which may highlight the need for more options for early childhood care and support. Similarly, respondents also feel that there are very few or even absence of "KG Schools", suggesting a potential gap in early childhood education services. Conversely, the majority of individuals seem to believe that there are adequate number of "Primary Schools" in the area, indicating that the community perceives a sufficient availability of basic education institutions.

On the other hand, respondents feel that there are very few or insufficient "Secondary Schools", "Colleges" and "Universities, Higher Education Centers, and Training Centers" in the town, indicating a potential shortage of higher education opportunities and professional development resources. Lastly, the perception of "Madrasa" facilities suggests that respondents feel there are many existing madrasas in the Upazila.

These findings shed light on the community's perceptions of the educational infrastructure in Nawabganj Upazila, highlighting areas where there may be a need for improvement and expansion, particularly in higher education and early childhood education services.

2.4.2.2 Condition of Health

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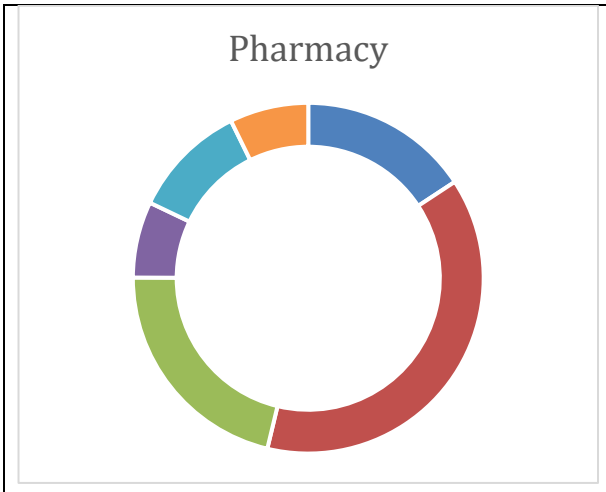
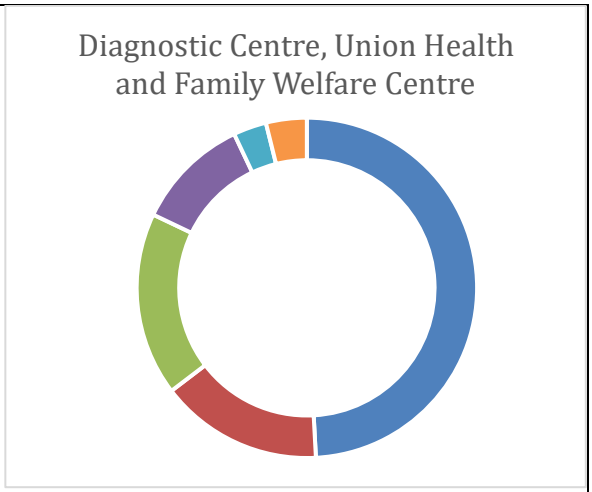
<td> 

Majority of individuals think there are few “Pharmacies” in Nawabganj Upazila, some think there are pharmacy in the Upazila but not in adequate number.</td>
<td> 

Majority of individuals think “Diagnostic Centre, Union Health and Family Welfare Centre” are totally absent in their Upazila.</td>
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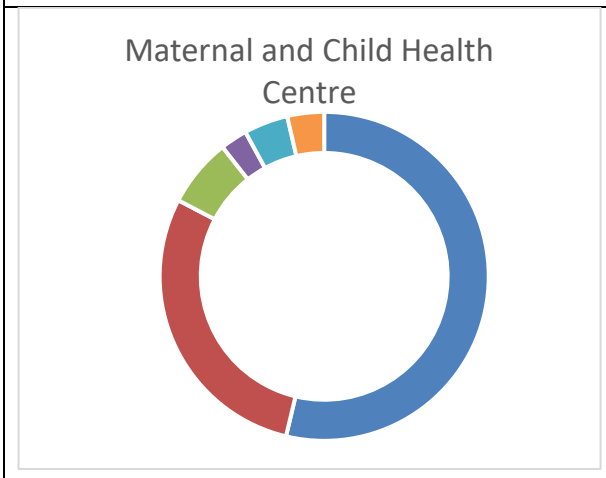
<td> 
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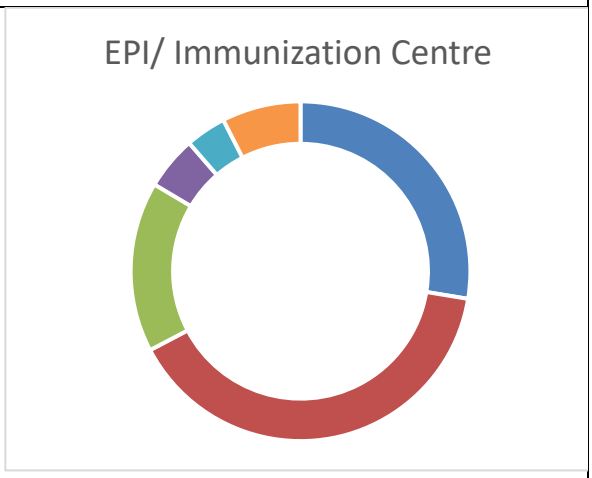
<td> 
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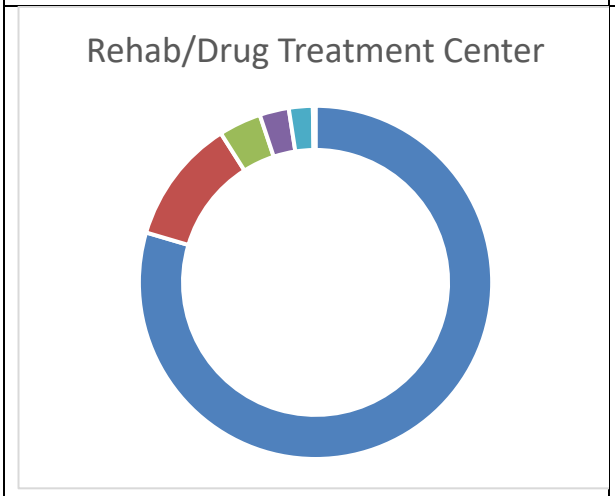
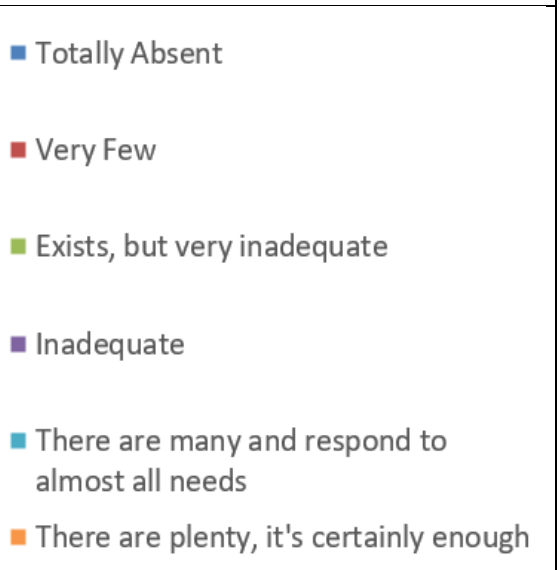
Majority of individuals think that a very few "Maternal and Child Health Centre" exist or no such facility is there.	Majority of individuals think there are very few or inadequate "Immunization Center" in the Upazila.
 Absence of "Rehab/Drug Center" is seen in the Upazila.	

(Source: Field Survey, 2023)

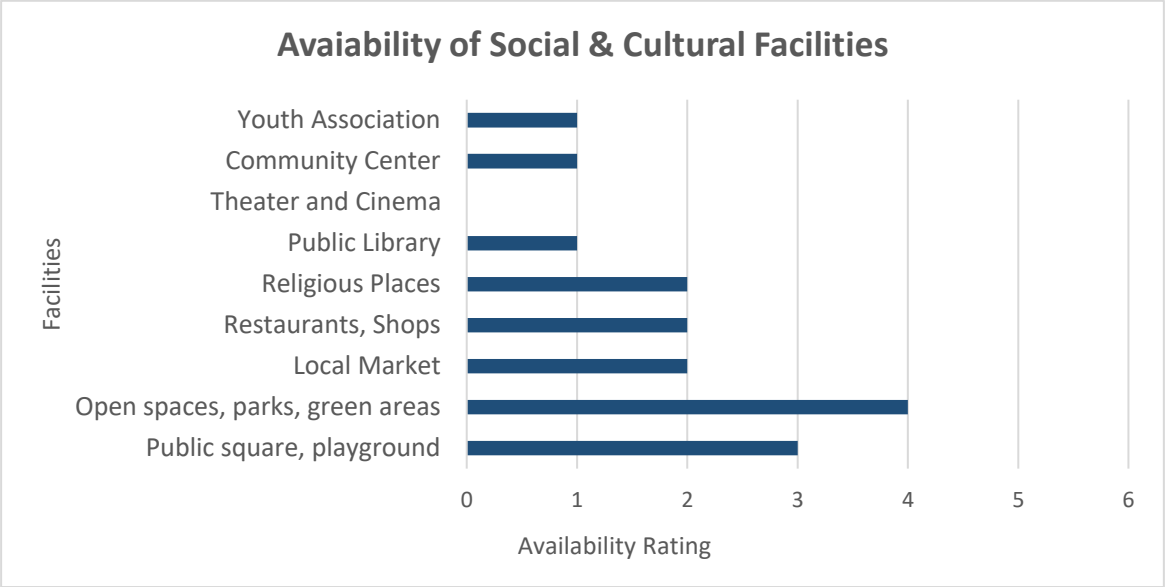
Figure 2-13: Condition of Health Facilities

The findings regarding the condition of health infrastructure in the Upazila reveal several important observations. Firstly, a majority of individuals perceive that there are "Pharmacies" in the area, but they consider them to be insufficient, indicating potential challenges in accessing adequate healthcare services. Additionally, the perception that the "Diagnostic Centre, Union Health and Family Welfare Centre" are totally absent suggests limited access to healthcare facilities.

Furthermore, respondents believe that there are very few or even no "Maternal and Child Health Centre" available, potentially indicating a gap in accessible healthcare services for mothers and children. EPI and Immunization centers are also very few in the Nawabganj Upazila. There is the total absence of a drug/rehab center in the Upazila though drug addiction is a concerning issue now in the Upazila

These findings underscore the need for improvements in healthcare infrastructure, especially in terms of increasing the availability of government and private healthcare facilities, clinics, and diagnostic centers. Ensuring a well-balanced and accessible healthcare ecosystem is crucial for the overall health and well-being of the community in Nawabganj Upazila.

2.4.2.3 Status of Environment, Social & Cultural Facilities



(Source: Field Survey, 2023)

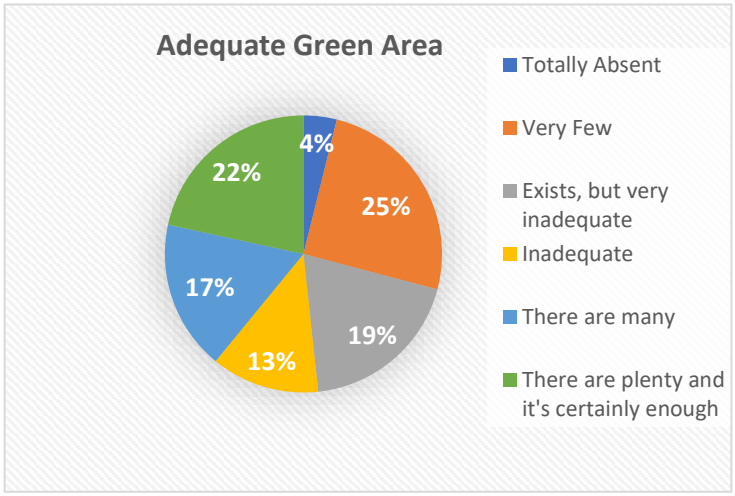
Figure 2-14: Social and Cultural Facilities

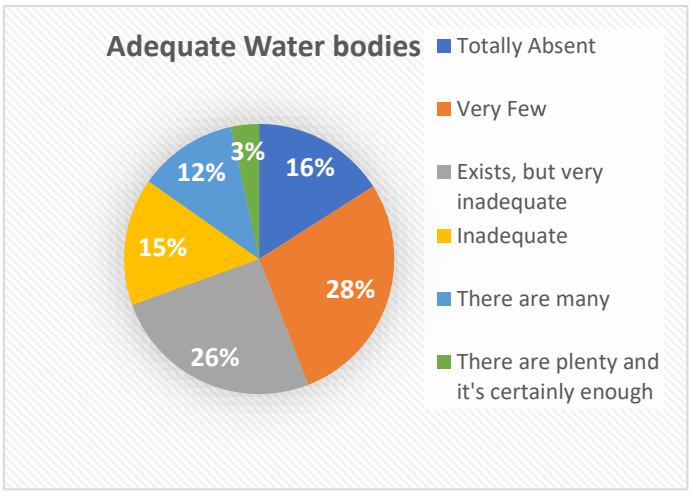
The bar chart in Figure 10-14 represent the availability of social and cultural services in the area. It provides a clear picture of the community's access to these essential amenities. Notably, "Open space, parks, Green areas" and "Public square, Playground" are the most prevalent and highly rated services. Though in Agla union, there is a lack of playgrounds and public squares. In Baruakhali union, parks and playgrounds are more prevalent. This suggests that the community has relatively good access to outdoor recreational areas, which can contribute to a better quality of life and community interaction.

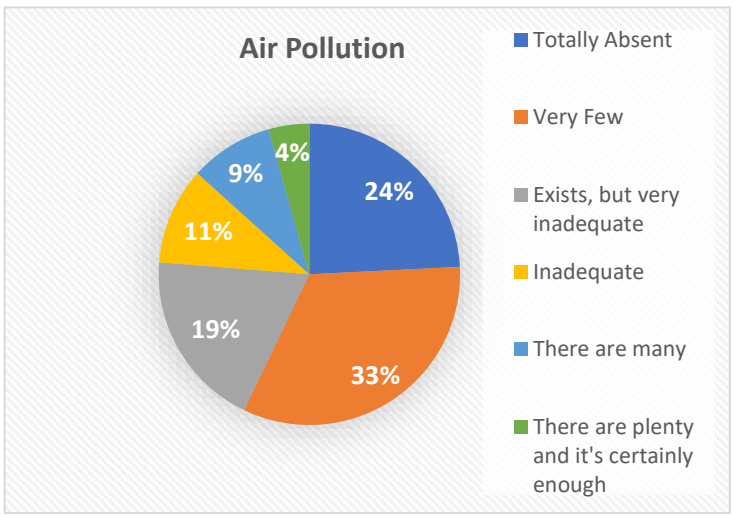
However, "Youth association", “Community center”, and “Public Library” received a lower rating, indicating that there may be limited options or a lower satisfaction level with the choices available. In all the 14 unions, these facilities are lacking. These facilities are important for intellectual development of the locality. Majority of the respondents agree that "Theater and Cinema" are absent in the area, which could be a concern for residents seeking entertainment resources.

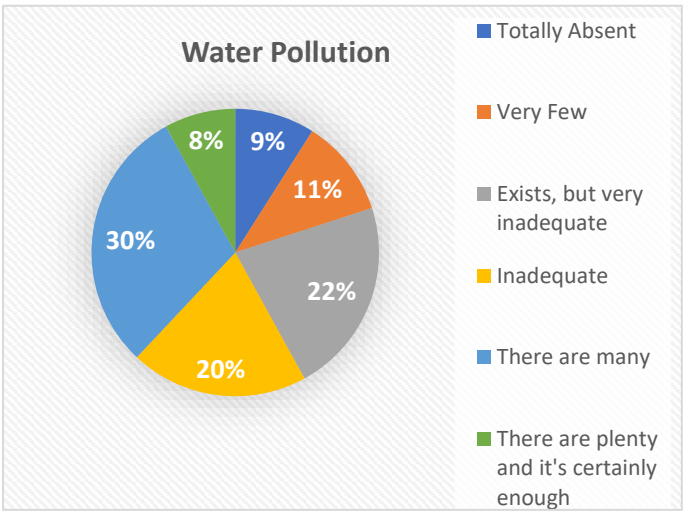
"Religious center”, “Local market”, “Restaurants, shops” received a moderate rating of 2, indicating these facilities are inadequate and there may be room for improvement or expansion of these services for the community's social and cultural needs. Local market is highly available in Bandura and Barukhali union but in Kailail union local market is not sufficient enough to cater to the residents.

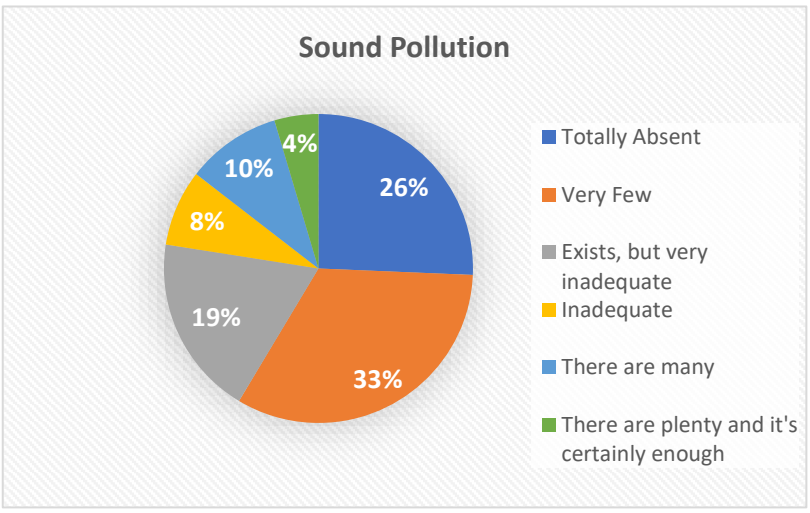
In summary, the findings from the bar chart underscore the importance of maintaining and enhancing public spaces like parks and playgrounds while also addressing the potential gaps in cultural and social options within the community. Ensuring a well-rounded offering of social and cultural services can contribute to the overall well-being and vibrancy of the area.











(Source: Field Survey, 2023)

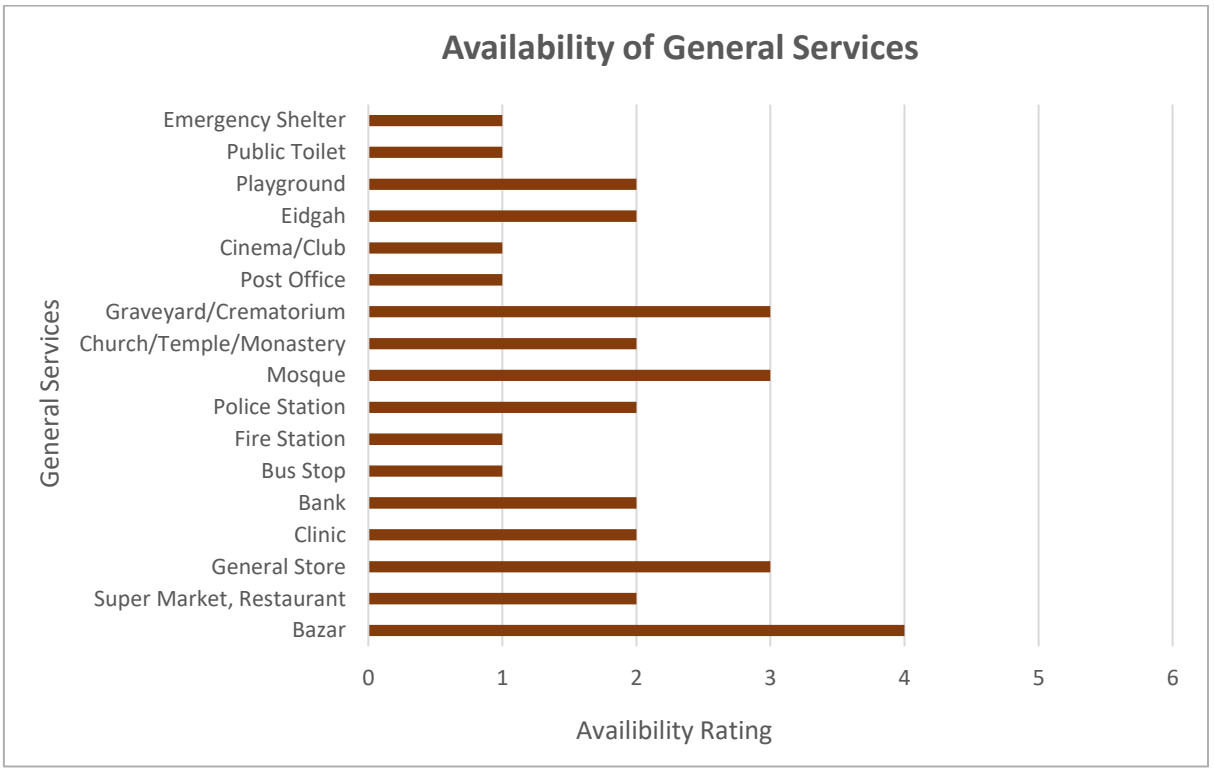
Figure 2-15: Environmental Challenges

The pie chart in Figure 10-15 shows the main environmental challenges in Nawabganj Upazila. In some places, there are adequate greeneries whereas the urban area of the Upazila lacks

greeneries. But in terms of water bodies, the maximum respondents (28%) agree that very few waterbodies exist in the Upazila. Though Icchamati and Kaliganga river and many other canals are situated in the area, but these waterbodies are mostly polluted and are not functional. The air pollution rate in this Upazila is low as no large industries are located here. Half of the surveyed respondents said there are no air pollution or very few air pollution along the roadside. 30% of the respondents said many waterbodies are polluted. Water pollution is a major issue for this Upazila. People dump waste in it and make it unlivable for aquatic plants and animals. Sound pollution level is very low in Nawabganj Upazila as 26% of the respondents said the absence of sound pollution and 33% of the people said about the low sound pollution.

These findings provide valuable information for targeted environmental management and mitigation efforts in the Nawabganj Upazila by promoting green spaces and reducing water pollution for the benefit of the inhabitants.

2.4.2.4 Status of General Community Facilities



(Source: Field Survey, 2023)

Figure 2-16: Availability of General Services

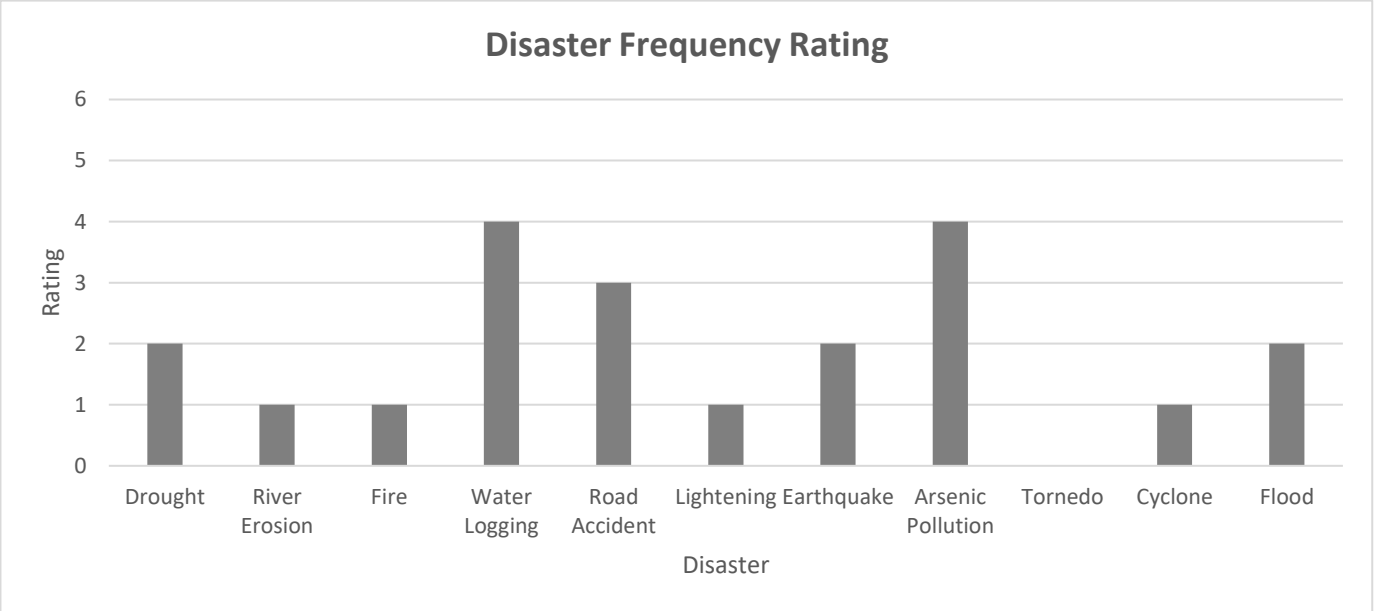
The bar chart illustrates the availability of general services in the area and provides valuable insights into the state of essential amenities. Notably, "Bazar" is rated highly, indicating that there are plenty of these establishments, and they are considered sufficient to cater to the community's daily needs. This suggests that residents have easy access to essential food and household items.

Similarly, "General Store" services also received a favorable rating, signifying that there are many such stores in the area, and they respond well to most of the community's needs. “Graveyard” and “Mosque” are also moderately rated by the respondents. “Clinic”, “Bank”, “Police Station”,

"Eidgah', "Playground" and "Temple" is rated 2 by the localities, indicating inadequate services for the whole community. However, there are notable concerns in other areas. "Fire Station," "Public Toilet," "Post Office", "Bus Stop" and "Emergency Shelter", indicating that these critical emergency services are absent in the Upazila. This poses a significant safety and security concern, and addressing this gap should be a top priority.

While the availability of bazars, grocery shops, general stores is generally satisfactory, the absence of crucial emergency services like fire stations, public toilet, emergency shelter is concerning. Ensuring the safety, security, and well-being of the community should be a priority for local authorities, along with addressing any other gaps in essential services.

2.4.2.5 Status of Disaster



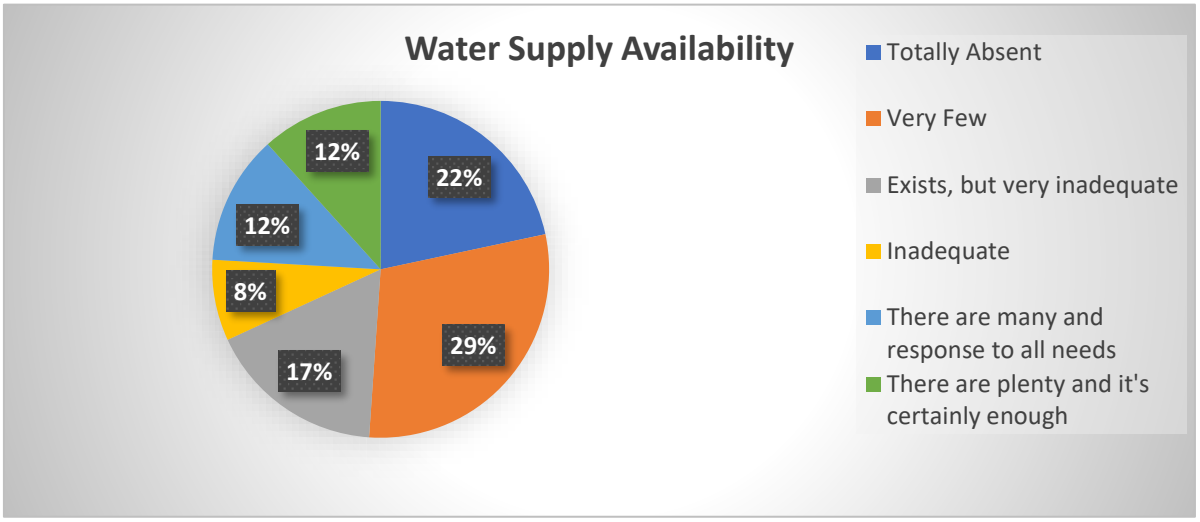
(Source: Field Survey, 2023)
Figure 2-17: Disaster Frequency

Based on the corresponding pie chart above, it is evident that Nawabganj Upazila faces a range of environmental challenges according to people's perceptions. The data shows that the most frequently occurring disasters are "Water Logging" and "Arsenic Pollution" affecting the community most. Due to the lack of a drainage network, the area is immersed with waterlogging problem. The area also suffers from safe water supply. Following closely behind is a road accident. Most of the roads are kuccha in Nawabganj Upazila and the existing roads are narrow resulting in huge traffic congestion in some places and also road accidents. "Flood" also occurs in Nawabganj Upazila in some region which are close to Icchamati, Kaliganga river. In some region, "Earthquake" hazard is noticeable as Nawabganj Upazila is located in earthquake prone area. "Drought" is also seen in some area. "River Erosion", "Fire", "Lightening', "Cyclone" are the lowest rating disasters. These disasters are less likely to occur in the Upazila.

These findings emphasize the importance of disaster preparedness, mitigation, and response strategies in Nawabganj Upazila with a particular focus on waterlogging and arsenic contamination problem. Collaborative efforts involving local authorities and communities are essential to enhance resilience and reduce the impact of these various disasters on the region.

2.4.3 Infrastructure and Utilities

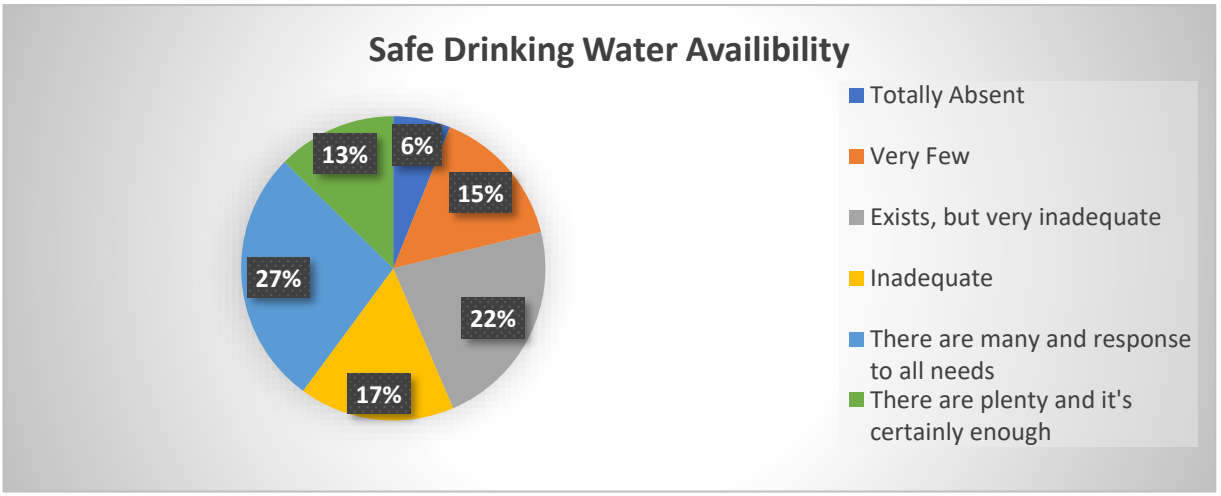
2.4.3.1 Water Supply



(Source: Field Survey, 2023)

Figure 2-18: Water Supply Availability

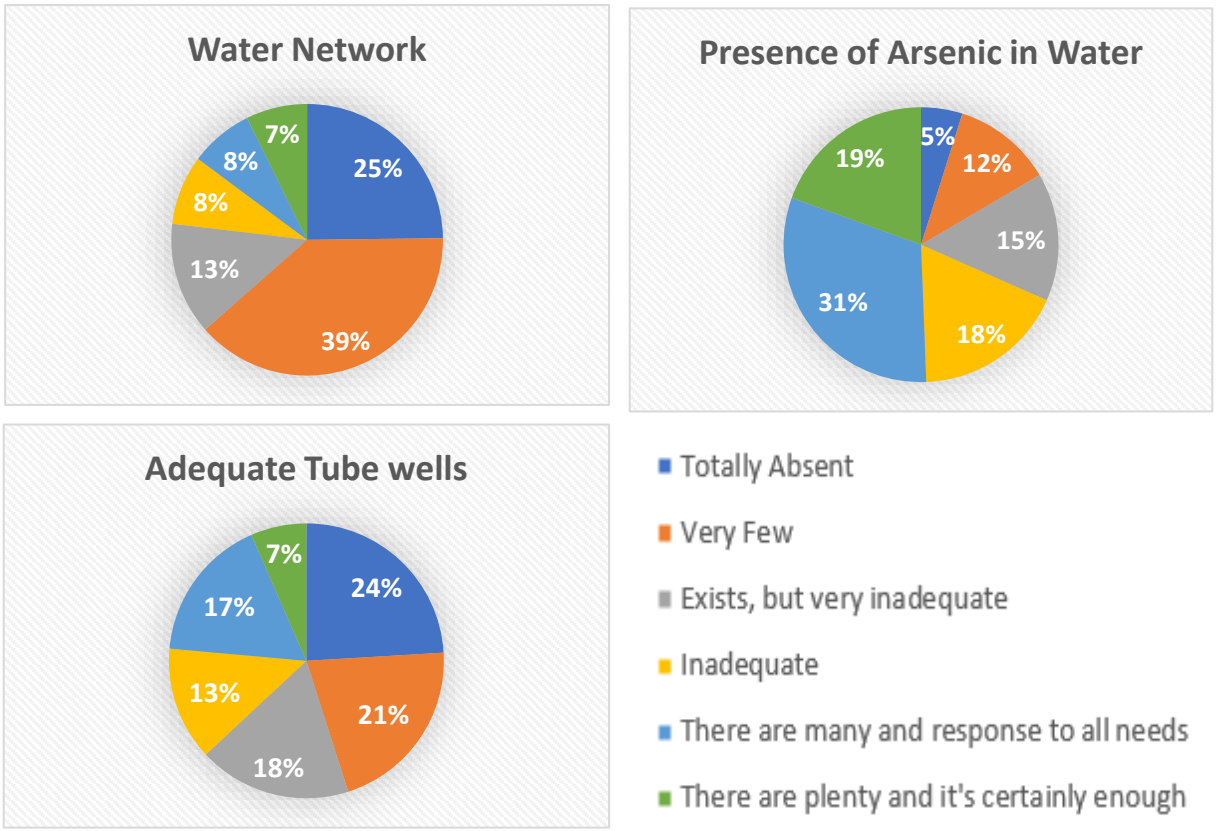
The pie chart above denotes the overall water supply availability in Nawabganj Upazila. The water supply condition in the Upazila is not in good condition as most people agree on the unavailability (22%) or very few availabilities (29%) of the water sources especially in the Kailail union. 17% of respondents said the water supply is available but is inadequate compared to the population. 12% of people said water availability is enough like Bandura and Jantrail union's people feel about the sufficient water supply in their locality.



(Source: Field Survey, 2023)

Figure 2-19: Safe Drinking Water Availability

Compared to water supply availability, safe drinking water availability is in good condition. Highest portion of the respondents (27%) agree that there are many safe drinking water sources available in the Upazila. Many people (22%) said safe drinking water sources are available but of inadequate amount.



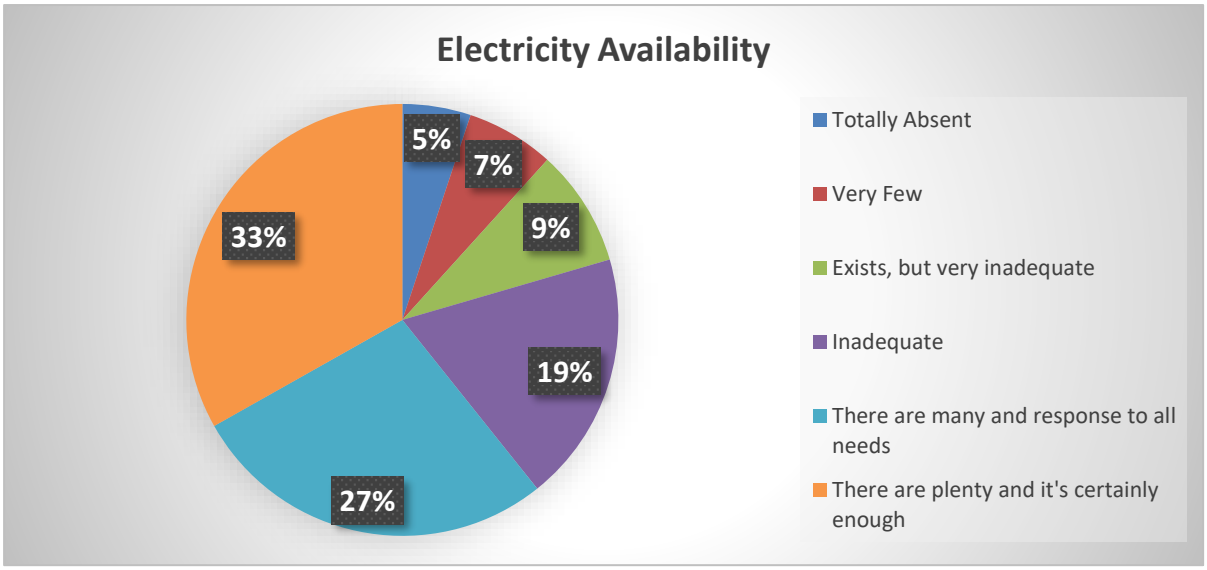
(Source: Field Survey, 2023)

Figure 2-20: Water Availability Challenges

In the case of the water supply network, 25% of the respondents agree on the absence of a water network, 39% people said there are very few existing water-network in the Upazila. In Agla and Barrah union, the water network condition is very poor as most people said about the absence of a proper water network system in these unions. Sholla, Bandura and Jantrail union has better water networks. Arsenic contamination is another concern issue. 31% of respondents said that there is a high level of arsenic contamination in Nawabganj. 19% people agree on the extreme level of arsenic contamination. In Baruakhali union the prevalence of arsenic is high. The tubewell condition of the Upazila is not up to the mark. 24% people agree on the absence of tubewell in their locality. 21% of people said that there are very few tubewells and 18% people expressed their concern about the inadequacy of the tubewell. In Nayansree and Jantrail union the absence of tubewell is significant.

These findings underscore the urgent need to improve water network infrastructure to ensure equitable and consistent access to clean and safe water for all residents.

2.4.3.2 Electricity

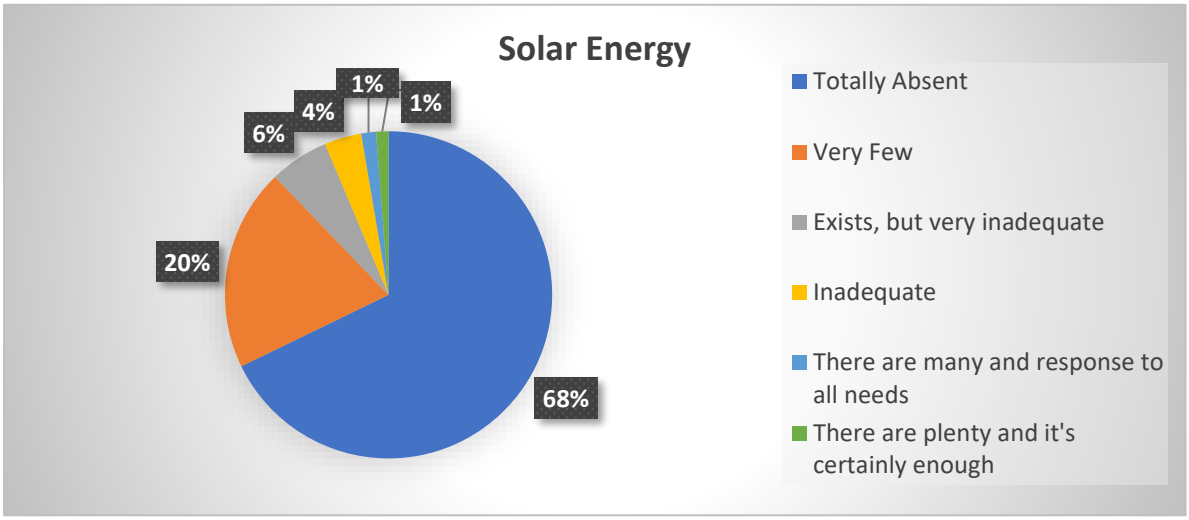


(Source: Field Survey, 2023)
Figure 2-21: Electricity Service Availability

The largest segment of respondents (33%) believes that the electricity service is definitely good. This suggests a high level of satisfaction with the current state of electricity services among this group especially in Sholla union. 27% agree that the electricity system responds to all the needs of the inhabitants.

The findings indicate that the majority of respondents have positive perceptions of electricity services, with a significant portion perceiving that there are plenty of options and that the service is definitely sufficient. While there are some concerns about the sufficiency and quality of electricity services among a smaller portion of respondents, the overall sentiment appears to be favorable, with a majority expressing satisfaction with their access to electricity. Invest in upgrading the electrical grid in areas like Agla union, where respondents reported frequent power outages, to ensure reliable and consistent electricity supply.

2.4.3.3 Solar Energy



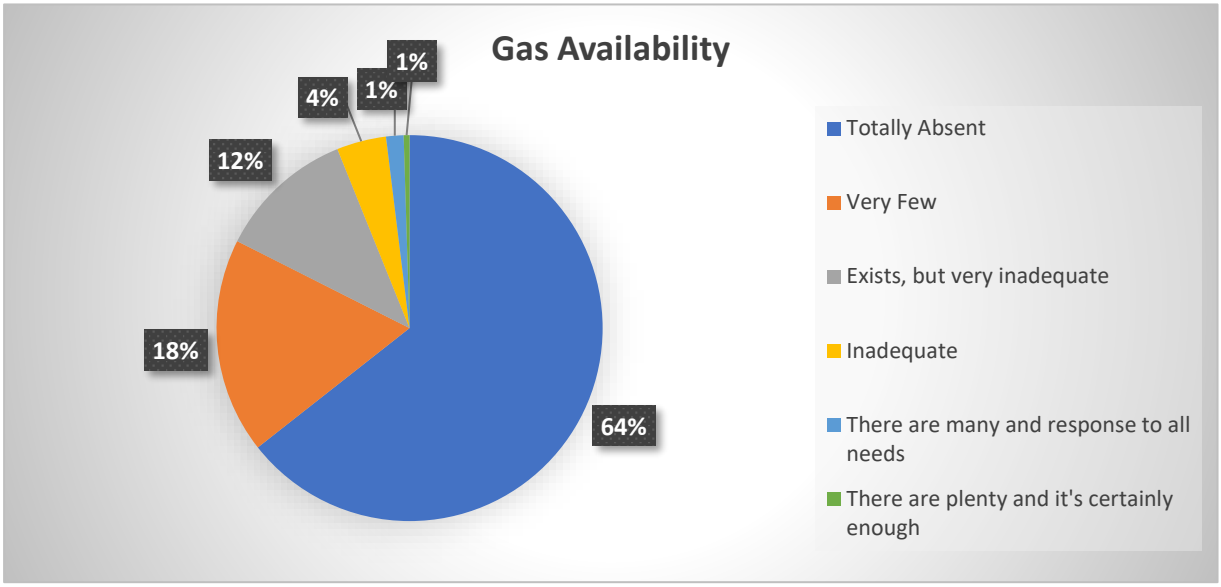
(Source: Field Survey, 2023)

Figure 2-22: Solar Energy Availability

A vast majority of respondents (68%) agree that the use of solar energy is absent. This indicates that nearly the entire surveyed population perceives a complete lack of solar energy utilization in their area. A small percentage (20%) of respondents think that there are very few instances of solar energy use. This suggests that a minority of individuals may have limited access to or awareness of solar energy applications in their community.

The findings strongly indicate that the use of solar energy is overwhelmingly perceived as absent or extremely limited among the surveyed population. The survey shows most respondents believe solar energy is either absent or underused in their area, indicating a significant opportunity for increased awareness and adoption of renewable energy, particularly solar power.

2.4.3.4 Gas

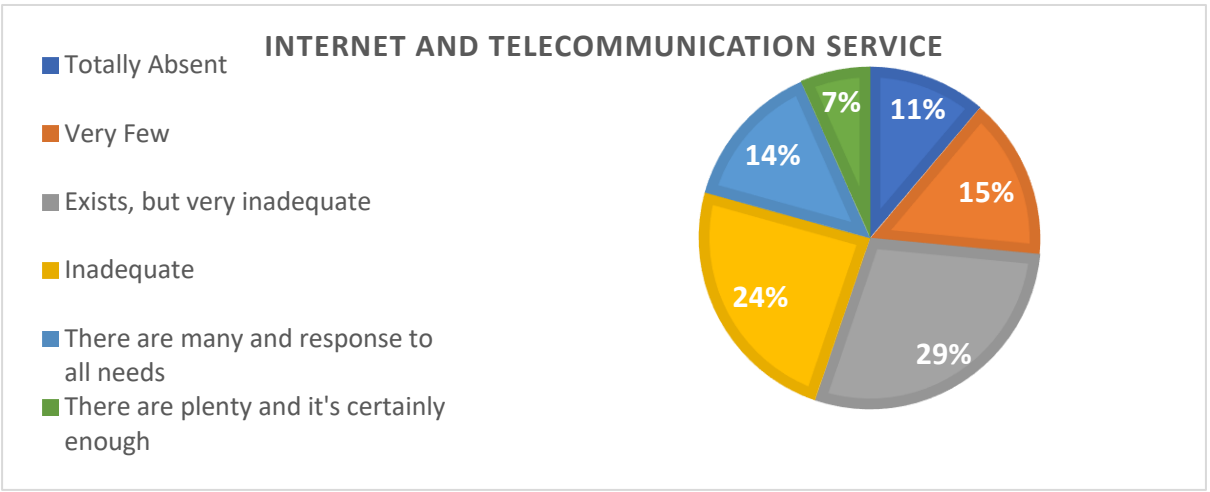


(Source: Field Survey, 2023)
Figure 2-23: Gas Supply Availability

The findings from investigation into the absence of a gas supply system in Nawabganj Upazila reveal a pressing issue affecting the majority of the residents. Approximately 64% of respondents expressed their concern about the absence of gas supply especially in Barrah union people are more concerned with this. 18% people said they have very little access to gas. In Kailail union, most people are satisfied with gas availability. Safety concerns also arise from the use of cylinder gas without proper safety measures.

To tackle this issue in Nawabganj Upazila, it is crucial to establish a gas supply infrastructure, provide subsidies for cylinder gas, promote safe gas practices, encourage sustainable cooking methods, and monitor air quality. These measures are essential for creating a healthier and more sustainable future for the community.

2.4.3.5 Internet and Telecommunication

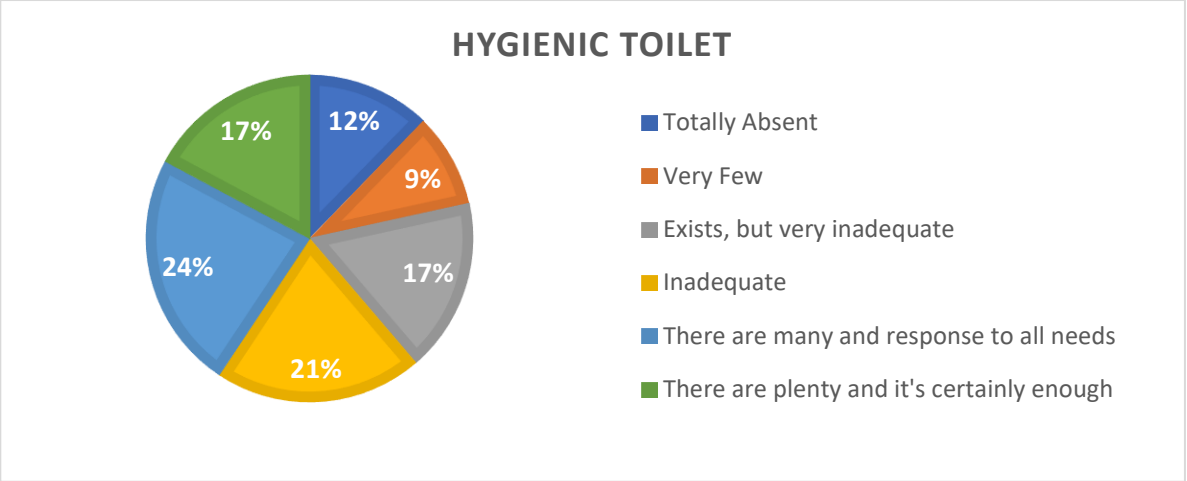


(Source: Field Survey, 2023)

Figure 2-24: Internet and Telecommunication Services

Highest portion of the surveyed group (29%) said the internet and telecommunication facilities exists but the service is very poor. The majority of the respondents agree on the inadequacy service quality. 14% of the people expressed their opinion about the adequacy of the services which is plenty according to them. It can be said that telecommunication service system should be updated and improvised for the better livelihood of the people of the Nawabganj.

2.4.3.6 Sanitation



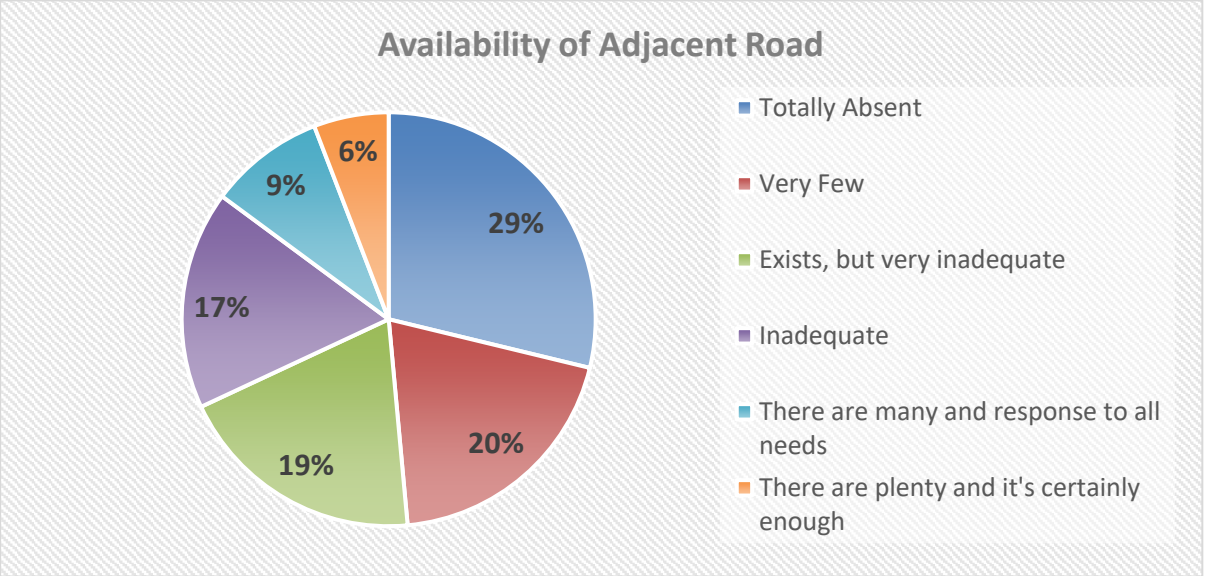
(Source: Field Survey, 2023)

Figure 2-25: Sanitation Condition

A variety of opinion is observed about sanitation facilities in Nawabganj Upazila. Overall sanitation condition of the Upazila depends on the affordability and social class of the people. Highest percentage of the people (24%) said the existing toilets are hygienic and they are adequate which responses to all the needs. However 21% of the respondents said the availability of the hygienic toilets are inadequate concerning the population for example Agla, Bandura, Sholla union, it lacks hygienic toilets. 17% of people say there is a very inadequate amount of hygienic toilet is available in their locality and there are plenty of hygienic toilets in their locality both at the same percentage. In Baruakhali union, condition of the hygienic sanitation is better than other union.

This denotes the condition of the sanitation system and availability of hygienic toilets depends on the housing condition of the respondents. Well-off people have better access to hygienic toilets compared to poor residents. Hence the variety of opinions are observed in this case.

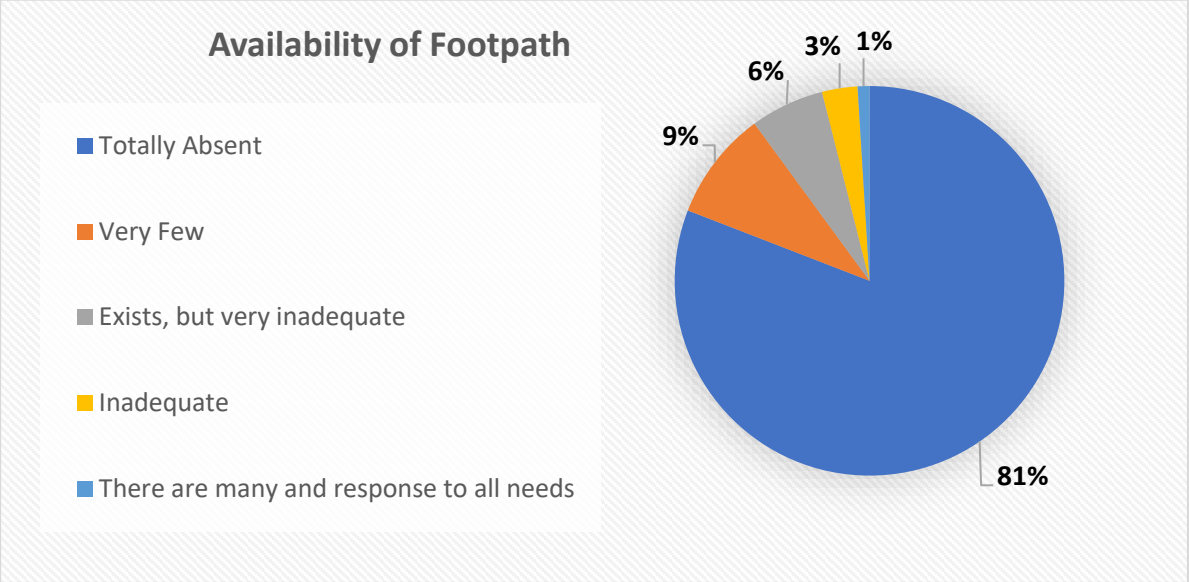
2.4.3.7 Status of Transportation Facilities



(Source: Field Survey, 2023)
Figure 2-26: Transportation Service

The highest percentage of respondents (29%) expressed their concern about the absence of sufficient adjacent road in their locality. A somewhat larger (20%) of respondents think there are very few roads available. Approximately 19% of respondents consider the existing roads to be very insufficient. This indicates widespread dissatisfaction with the quality and capacity of the road network. Only 9% of the respondents said there are many adjacent roads and they are satisfied with it. A considerable number of survey participants view the availability of roads as either entirely lacking, with very limited options, or as highly inadequate, indicating a pressing demand for enhanced road networks.

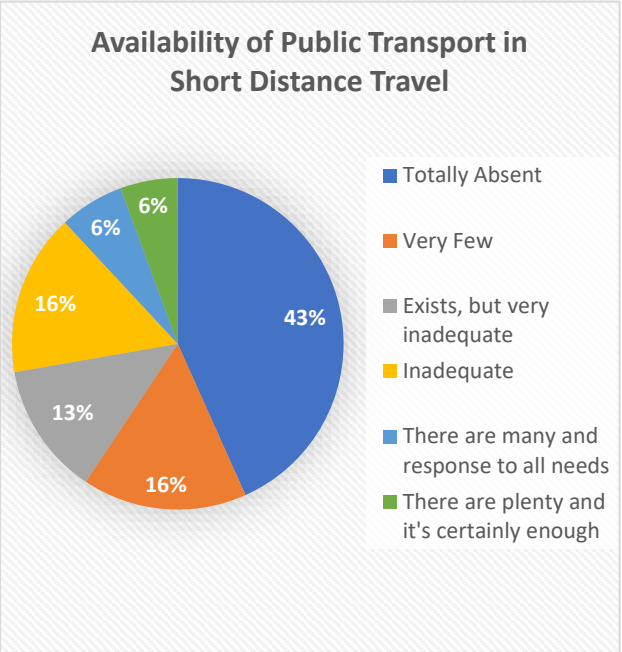
A small percentage of respondents express positive views about the current state of road infrastructure, emphasizing the apparent necessity for substantial enhancements of road services to address the transportation requirements of the populace in Nawabganj Upazila.

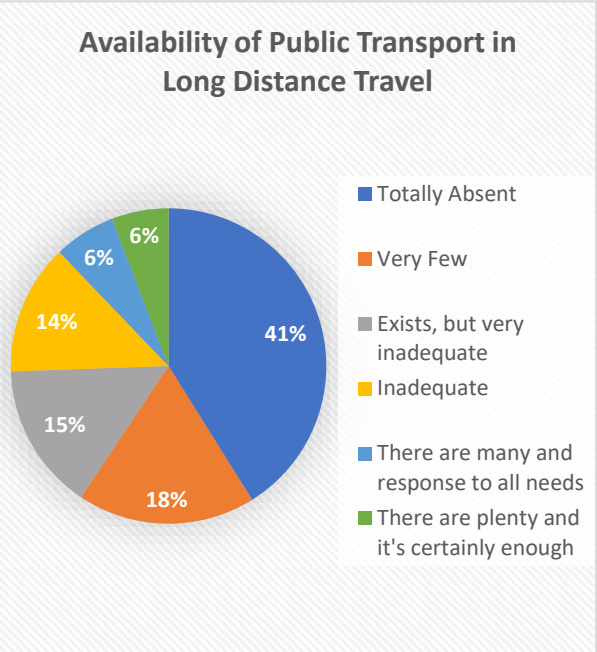


(Source: Field Survey, 2023)
Figure 2-27: Availability of Footpath

A vast majority of the respondents (81%) think that footpaths are absent. This indicates a severe deficiency in proper pedestrian infrastructure, with almost the entire population perceiving a complete lack of footpaths. Notably, none of the respondents in the survey mentioned that there are many footpaths or that there are plenty of footpaths that are sufficient. This suggests that the overall perception of footpath availability is overwhelmingly negative, with a significant majority perceiving either a total absence or severe insufficiency.

The findings underscore a critical need for improved pedestrian infrastructure in Nawabganj, as the majority perceive a total absence of footpaths. Concerns about the quality and capacity of existing footpaths are highlighted by the percentages for "very few" and "insufficient." Inadequate footpath availability underscores the urgent need for investment in this area to ensure safe and convenient pedestrian access.





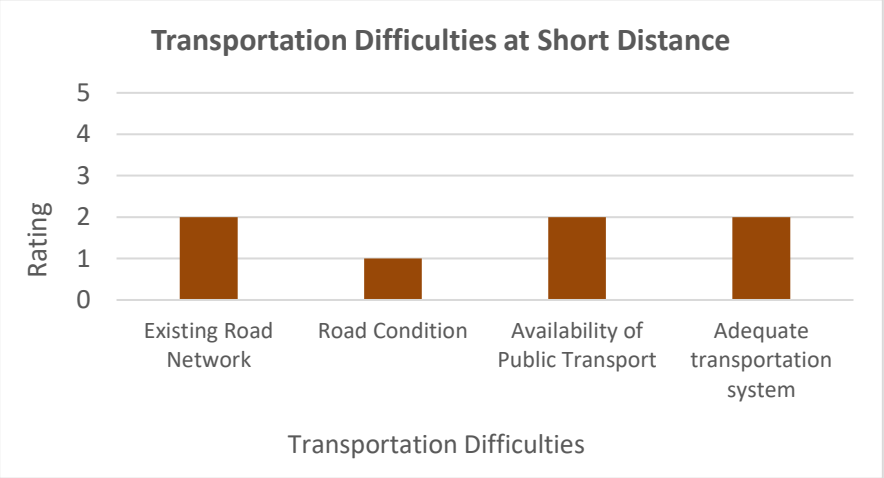
(Source: Field Survey, 2023)
Figure 2-28: Availability of Public Transport

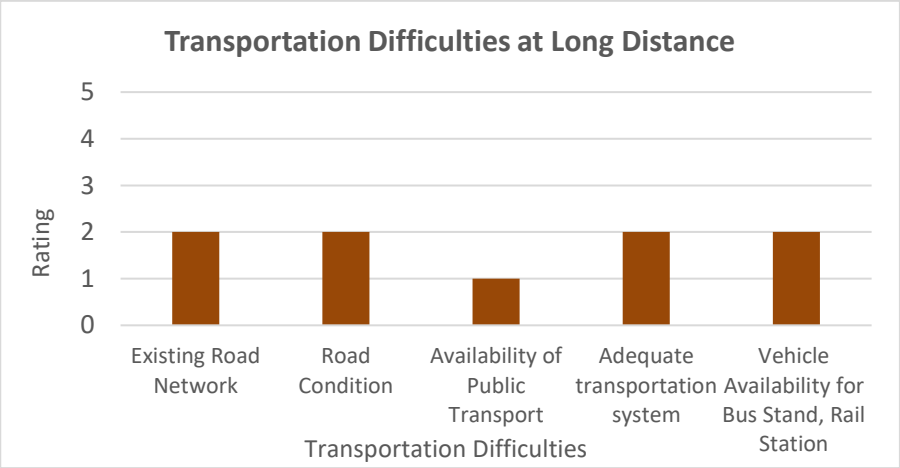
Almost half of the of respondents consider the existing public transport options to be inadequate for both short and long-distance travel. This group likely feels that the current public transportation services do not adequately meet their needs or are not readily accessible. 16% of people on short-distance travel, 18% of people in long-distance travel agree that the lack of public transport in Nawabganj Upazila. A significant portion of respondents perceive public transport as either insufficient or extremely insufficient, suggesting a need for improvements in terms of quality, capacity, and accessibility for the people. Implementing a community bus service in unions with limited public transport, like Barrah, Shikari Para, Agla, and Churain unions to improve accessibility to central markets, healthcare, and educational facilities as these unions face unavailability of public transport.

2.4.3.8 Household Travel Pattern

The chart defines the challenges faced by the inhabitants during travel. In both cases short and long distances, the difficulties faced by the travelers are huge concerning road network condition, availability of public transport and adequate transport system is very low rank indicating, low services in transport facilities. People face a lot of difficulties while traveling

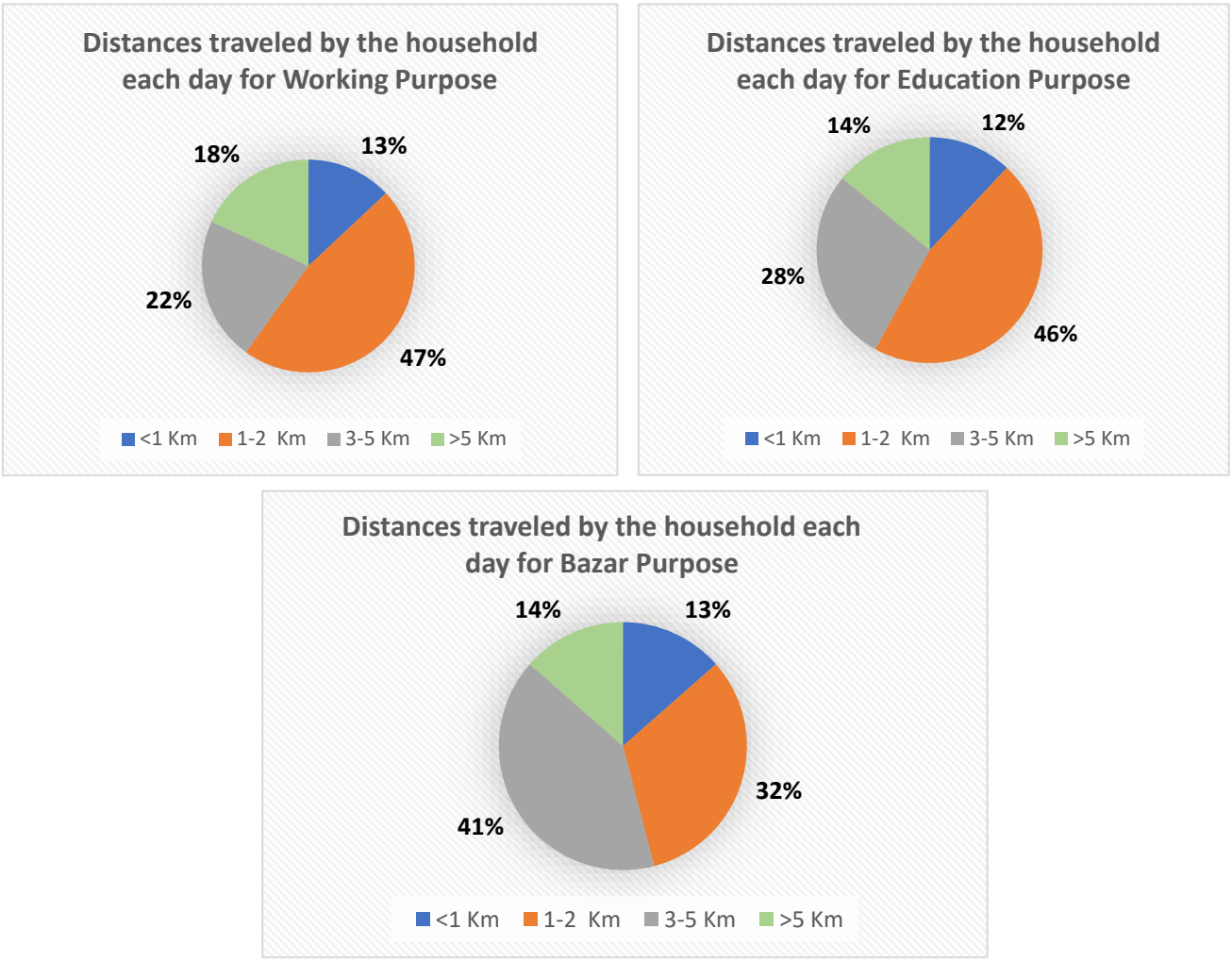
from one place to another. The Upazila lacks adequate puccha road. Through kucha roads it is difficult for people to travel in both short and long distance.





(Source: Field Survey, 2023)
Figure 2-29: Transportation Difficulties at Short and Long Distances

The results underscore the significant impact of road network conditions and accessibility on addressing short and long-distance transportation difficulties. Here 0 represents the complete absence of the facilities, and 5 represents plenty of the facilities. Participants frequently mentioned challenges stemming from inadequate road networks and substandard road conditions. Enhancing both road infrastructure and public transportation services has the potential to improve the overall transportation situation in the Nawabganj region.



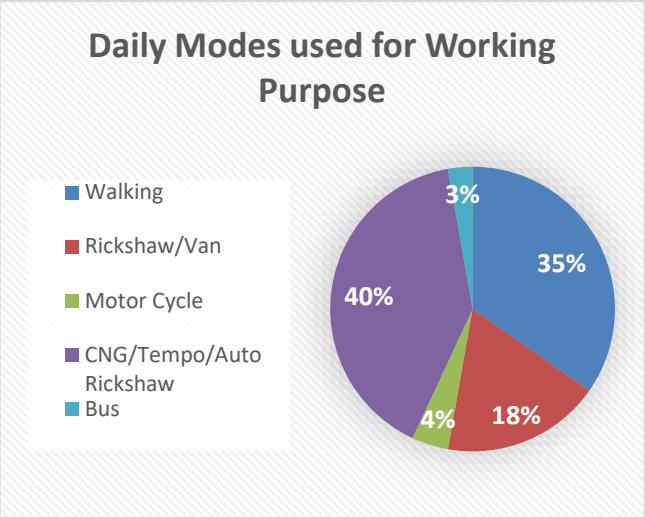
(Source: Field Survey, 2023)

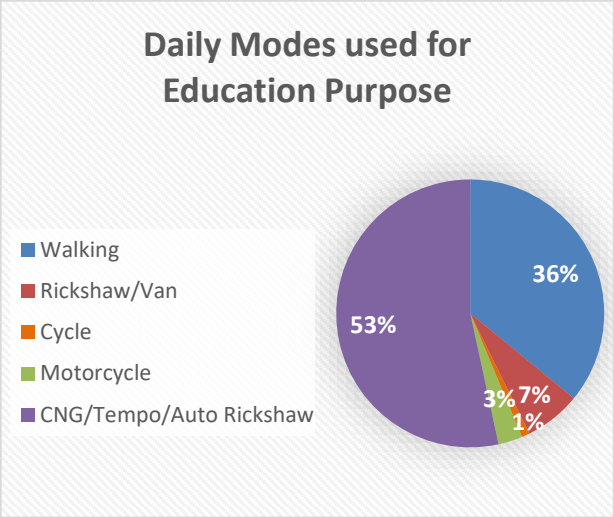
Figure 2-30: Distances Traveled for Various Purposes

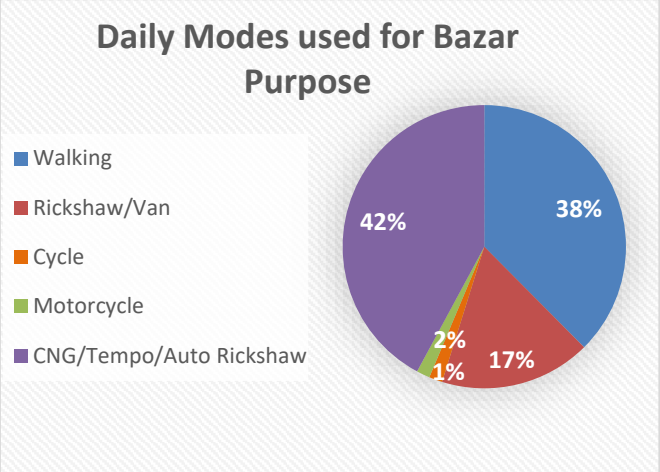
The findings, as represented by the pie chart, provide valuable insights into the distances traveled by households each day for essential activities, including work, education, and shopping. Notably, a maximum portion of households, 47% travel for in working purpose and 46% travel 1-2 Km for education purpose. This suggests that a significant number of people have essential activities located near their homes, possibly indicating efficient urban planning or proximity to necessary services. Additionally, 22% of households travel for work purposes, and 28% of households travel for education purposes whose distances lie between 3 to 5 kilometers, indicating that a considerable portion of the population undertakes moderate-distance trips for daily essential activities. As for shopping and marketing purposes in Bazar, the highest percentage (41%) is found traveling 3 to 5 kilometers distance range.

These results highlight the varied travel behaviors within the surveyed populace, showcasing a blend of mixed lifestyles. Grasping these travel distances holds significance for urban planning,

the development of transportation infrastructure, and allocating resources effectively to address the diverse needs of the community.







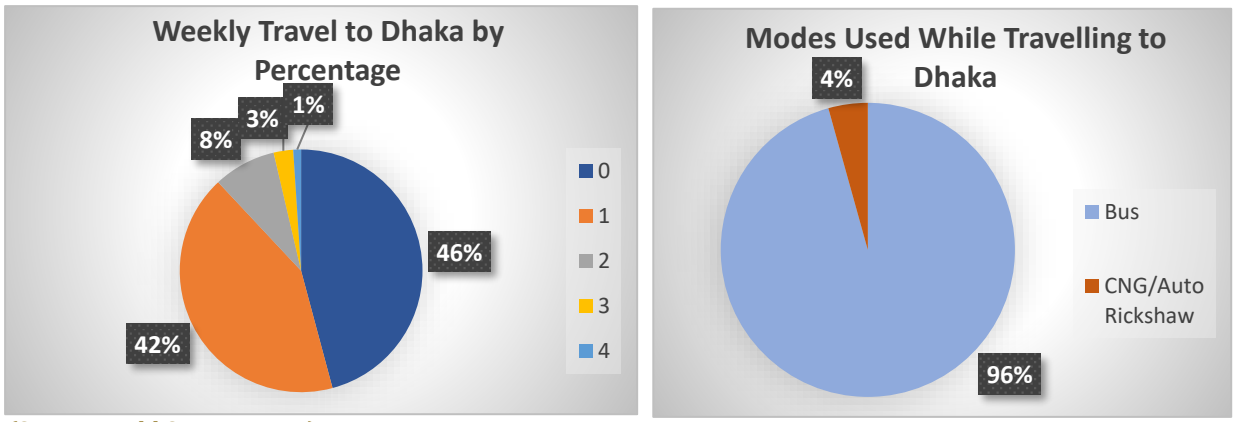
(Source: Field Survey, 2023)
Figure 2-31: Modal Choice for Various Purposes

The findings, as depicted in the pie chart, shed light on the daily modes of transportation used by households. It's striking to note that auto rickshaw, CNG, and Tempo emerges as the overwhelmingly dominant mode, used by 40% for working purpose, 53% for education purposes, and 42% for shopping purpose. Auto rickshaw, CNG, and Tempo are the most dominant transportation facilities that exist in Nawabganj Upazila. The second percentage comes as walking. 35% of the respondents agree that they go to work on foot, 36% of the respondents go to school, college, madrasa and 38% of the respondents go to Bazar on feet.

This emphasizes the significance of pedestrian mobility in the daily lives of the surveyed population, possibly indicating compact living environments or short-distance commuting. Rickshaw/Van comes next in terms of usage, with 18%, 7% and 17% of households utilizing this mode for working purpose, education purpose and shopping purpose respectively. This

suggests the importance of these human-powered or low-impact vehicles for local transportation needs. In contrast, fewer households opt for motorized vehicles, such as motorcycles or cycles, indicating that motorized personal transport is less common in this surveyed population.

These findings highlight a diverse range of transportation preferences, with a clear emphasis on modes like auto rickshaw which are battery operated. Walking comes after this indicating people meet their daily necessities within a short distance of 1 to 2 km. Understanding these modes can inform urban planning and transportation policies to better accommodate the needs of the community.

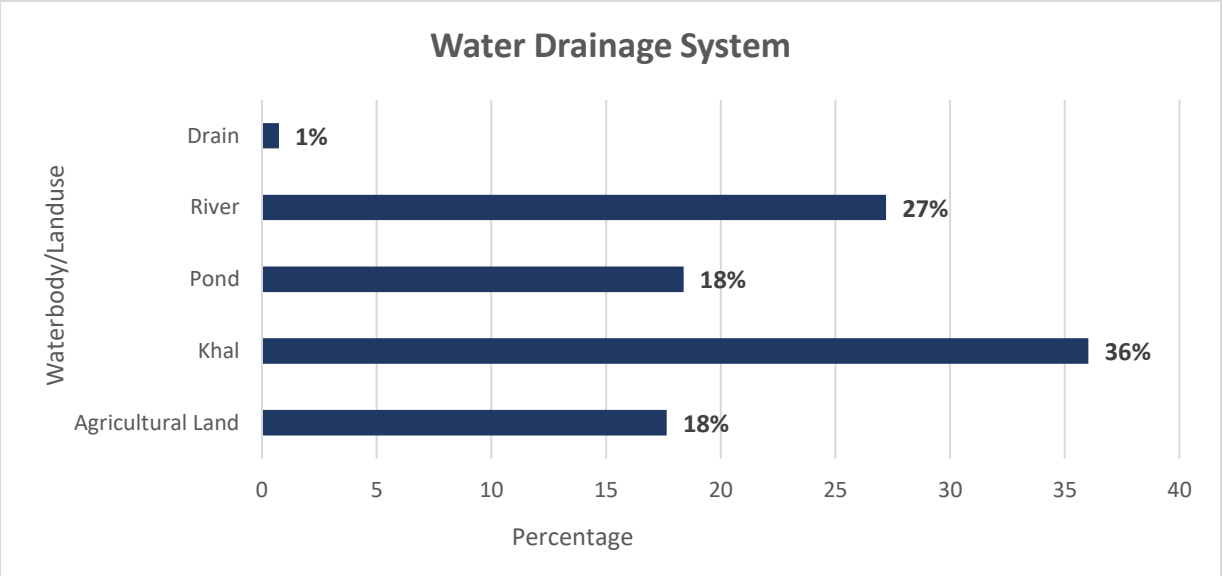


(Source: Field Survey, 2023)

Figure 2-32: Travel Number to Dhaka and Modes Used

The findings, as depicted in the pie chart, provide valuable insights into people in Nawabganj traveling to Dhaka City for various purposes. A significant percentage of the respondents (42%) travel to Dhaka once a week. The location of Nawabganj Upazila is very close to Dhaka city and many people depend on the capital for multiple purposes like health services, business, shopping, recreation, etc. Commuters use the bus mostly while traveling to Dhaka reflecting 96% of the respondents choosing the bus. The other proportion uses CNG/Auto rickshaws. These findings provide information for urban planners, policymakers, and businesses.

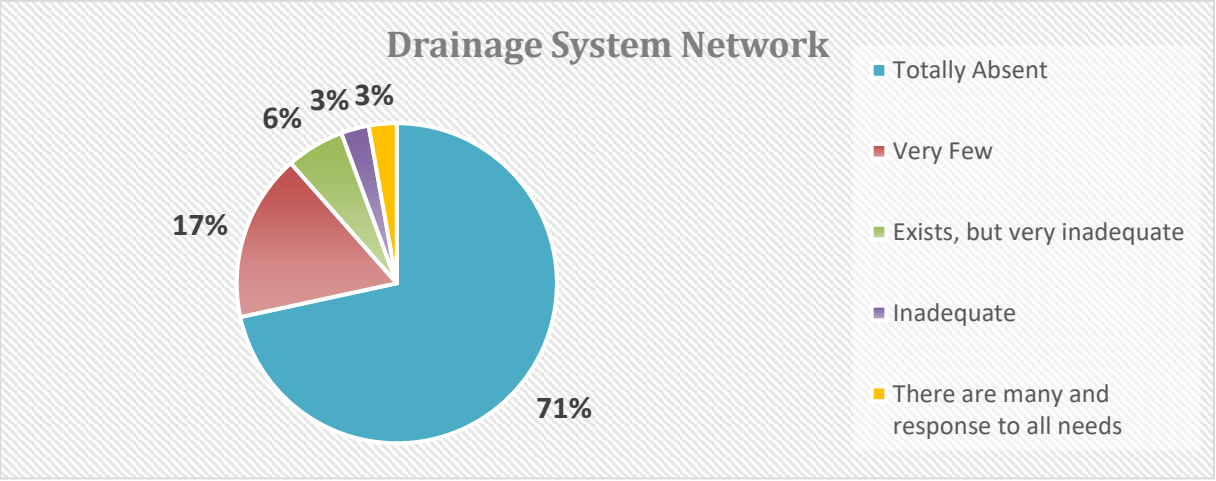
2.4.3.9 Drainage Facility



(Source: Field Survey, 2023)

Figure 2-33: Existing Water Drainage System

The bar chart denotes the existing water drainage system in Nawabganj Upazila. 36% of the respondents said that the water drains away by Khal. 27% of the respondents agree that the water drains by river in their union. Icchamati and Kaliganga are the main rivers in this region. Water drains by drainage system is very rare as the area lacks a drainage network beside the road. Only 1% of the respondents said water drains away by existing drains.



(Source: Field Survey, 2023)

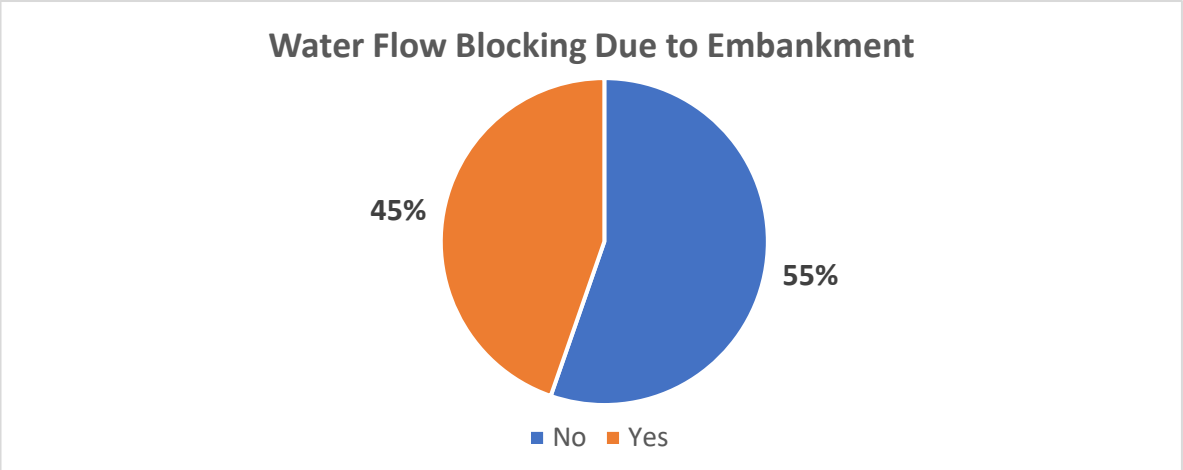
Figure 2-34: Drainage Facility

A significant majority of respondents (71%) believe that drainage is totally absent in their areas. This indicates a substantial portion of the population facing severe challenges due to the lack of proper drainage infrastructure. A smaller percentage (17%) of respondents think that there are very few drainage options available. This suggests that many individuals have limited access to drainage services. 6% of respondents consider the existing drainage systems to be insufficient.

This group feels that the current drainage services do not adequately address their needs. In Sholla and Bandura union, the availability of drainage networks is significantly low.

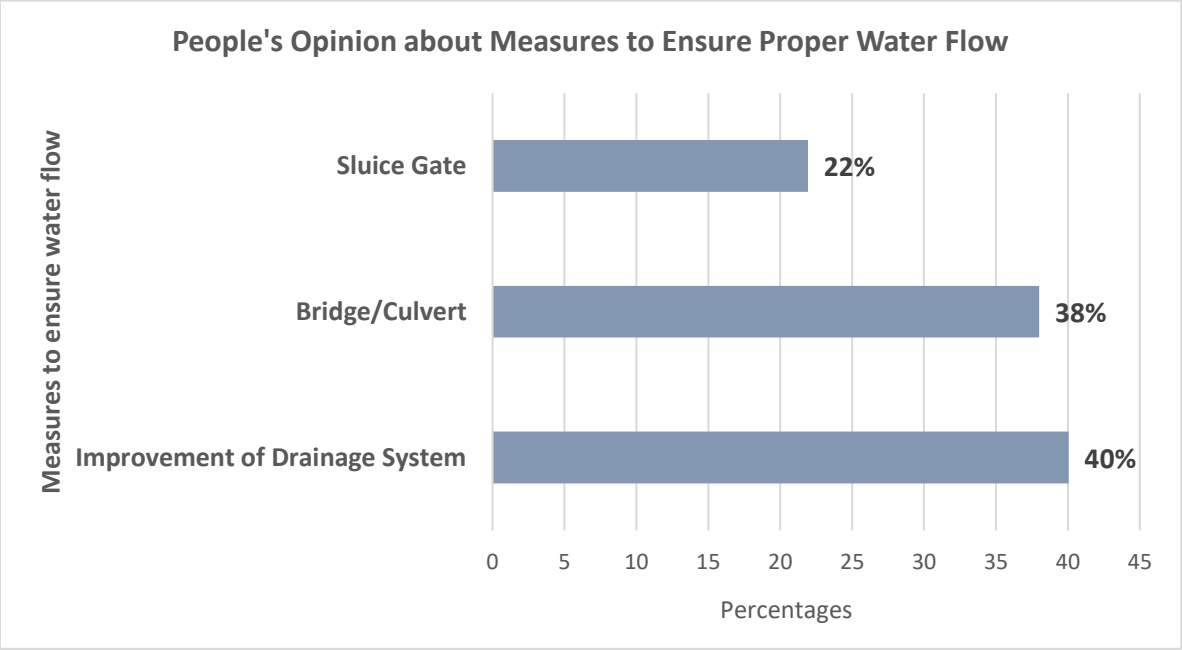
In brief, the results suggest that respondents express notable dissatisfaction and apprehension regarding the drainage facilities available. A substantial majority views drainage as either completely absent or offering very limited options, emphasizing a pressing requirement for enhanced infrastructure in this domain. The percentages indicating "insufficient" and "exist but extremely insufficient" underscore prevalent worries about the adequacy and efficacy of current drainage services. Positive perceptions of drainage services are held by only a small minority of respondents, underscoring the potential necessity for considerable enhancements in the drainage network.

2.4.3.10 Embankment



(Source: Field Survey, 2023)
Figure 2-35: Water Block due to Embankment
It is seen from the survey that a huge portion (45%) of respondents agree that natural water flow is obstructed due to embankment in their respective unions. The Beribandh has been a significant factor causing water clogging and water pollution for Nawabganj Upazila. The stagnation of water has affected the soil quality due to the degradation of water quality.

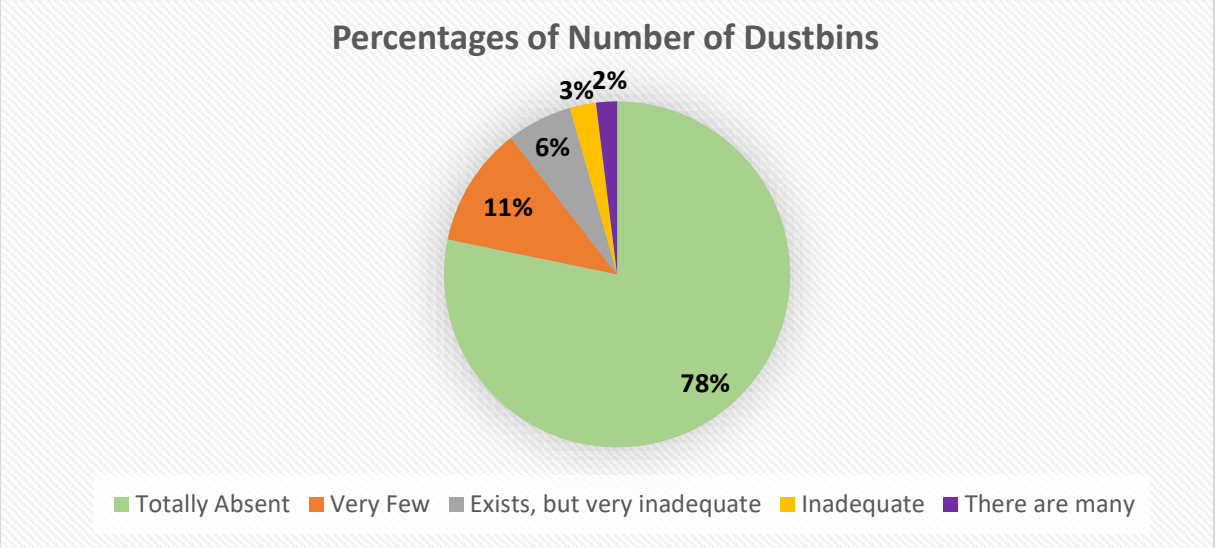
The local rivers and canals are devoid of water, as a consequence of the dam that obstructs the natural flow of water in rivers and canals. The water scarcity has led to a failed harvest. The once vibrant river canal system is now deteriorating, with the canal bed being filled. These waterbodies face a crisis, and the fish population is on the verge of extinction.



(Source: Field Survey, 2023)
Figure 2-36: Measures to Ensure Water Flow

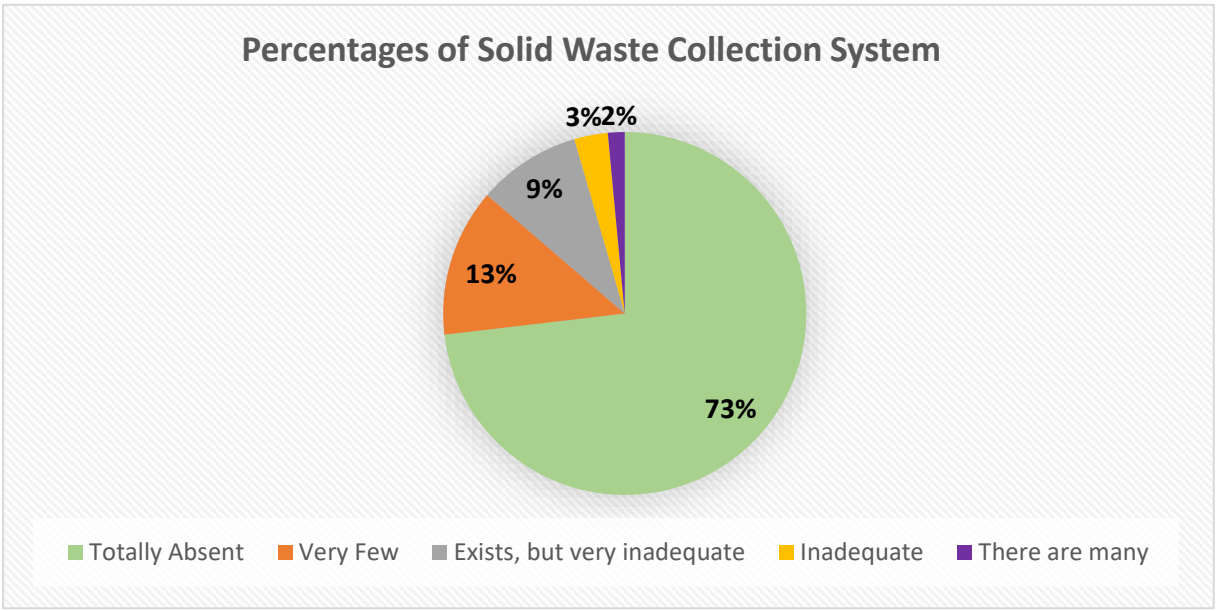
Improvements of drainage system is sought by 40% of the total surveyed respondents for ensuring proper water flow. Additionally, there is a need to liaise (Coordination) with the water development board and relevant stakeholders to discuss whether sluice gates, or culverts, or other methods would be more efficient. Addressing water pollution and clogging issues can lead to enhanced agricultural productivity, especially given the region's economic reliance on agriculture. In Kailail, people are in need of an improved drainage system. Bridge/culvert construction is mostly suggested by the people of Nayansree union and to ensure proper water flow, sluice gate construction is recommended by Shikari Para and Bandura union people.

2.4.3.11 Waste Collection



(Source: Field Survey, 2023)
Figure 2-37 Number of Dustbins

From the pie chart it is evident that, the Upazila lacks dustbins facilities as 78% of the respondents agree about the absence of dustbins. 11% of the respondents said there are very few dustbins in their areas. People dump wastes haphazardly and beside rivers causing environmental pollution.

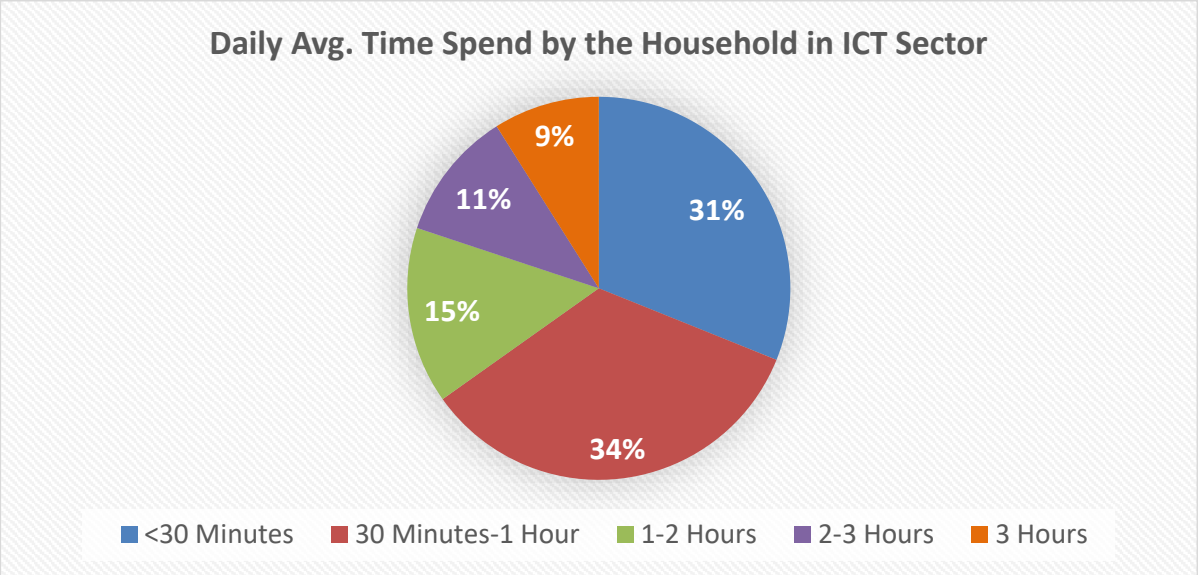


(Source: Field Survey, 2023)

Figure 2-38: Solid Waste Collection

Solid waste collection system is also absent in the Upazila. 73% of the respondents agree on the absence of solid waste collection system in the Upazila.

2.4.4 ICT



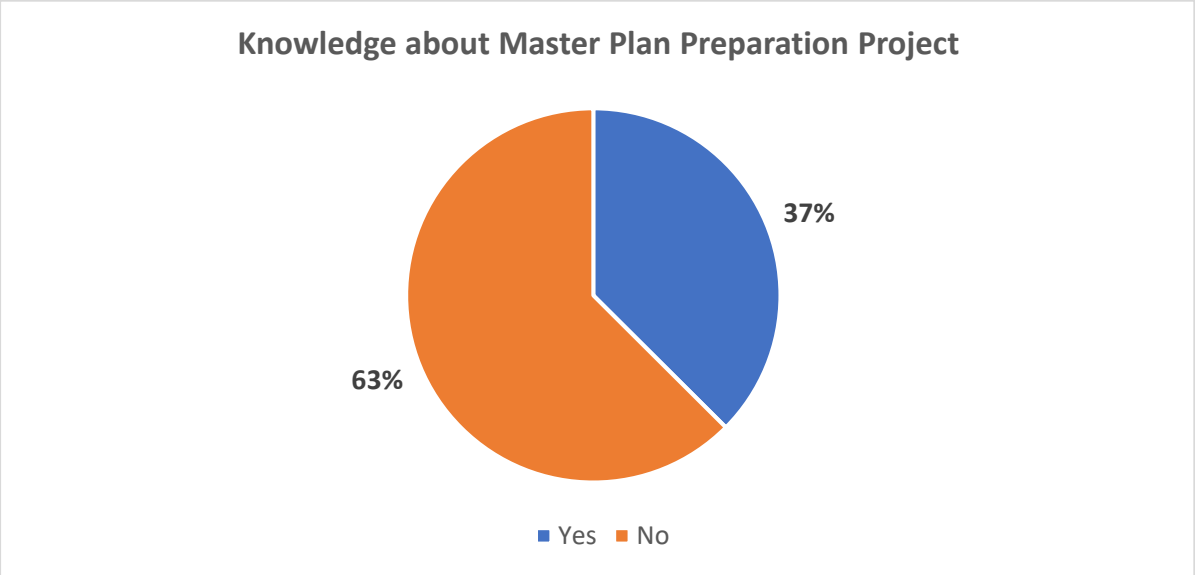
(Source: Field Survey, 2023)
Figure 2-39: Daily Avg. Time Spend by the Household in ICT Sector

The pie chart representing the time spent by households in the ICT (Information and Communication Technology) activities provides valuable insights into the level of engagement and usage of technology among the surveyed community which includes time spent on mobile, internet and computer.

The data shows that majority of households, 34% spend 30 minutes to 1 hour in the ICT activities. This suggests a significant level of moderate engagement with technology, which is quite common for various online activities, including work, entertainment, and communication. Following closely behind, 31% spending less than 30 minutes, indicating that a substantial portion of the community utilizes technology for shorter periods, possibly for quick tasks or leisure. In contrast, 15% spend 1-2 hours, 11% 2-3 hours, and 9% spend 3 hours or more in the mobile, internet and computer. These groups represent varying degrees of technology usage, with some using it very briefly and others for extended periods. The usage of ICT can be varied according to its age group. It can be used for educational purposes, gaming, and recreational purposes. It has both positive and negative impacts on the society. Too much dependence on ICT can be dangerous for the young generation in the society if it is misused.

The survey reveals diverse technology usage in the community, with many spending moderate time on ICT activities. This underscores the importance of technology access and literacy. Services are crucial to meet the varied digital needs, emphasizing the necessity for inclusivity and adaptability in technological initiatives.

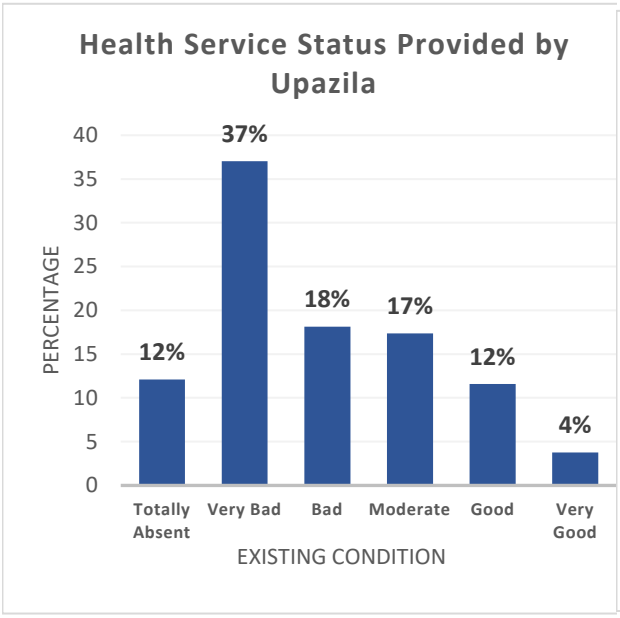
2.4.5 Level of Institutional Awareness

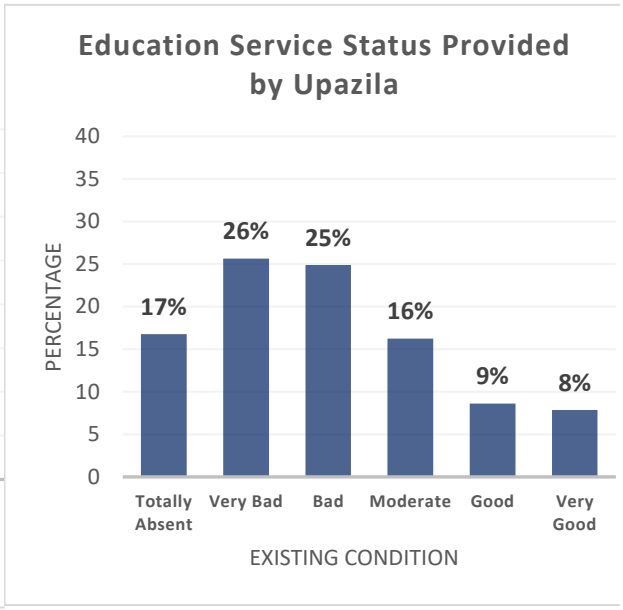


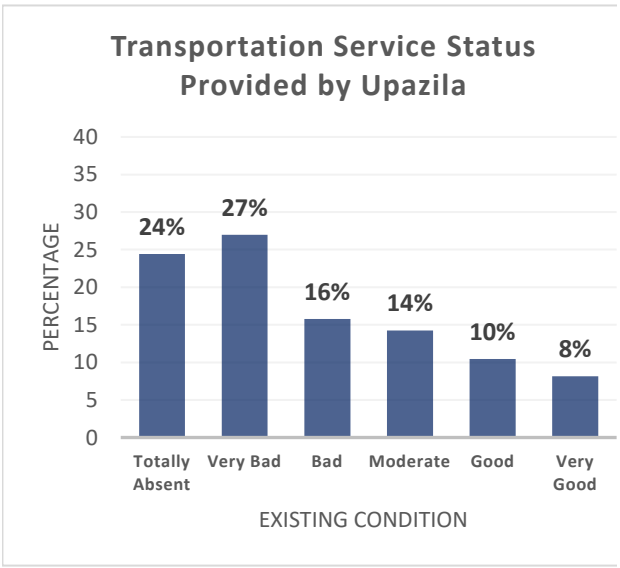
(Source: Field Survey, 2023)

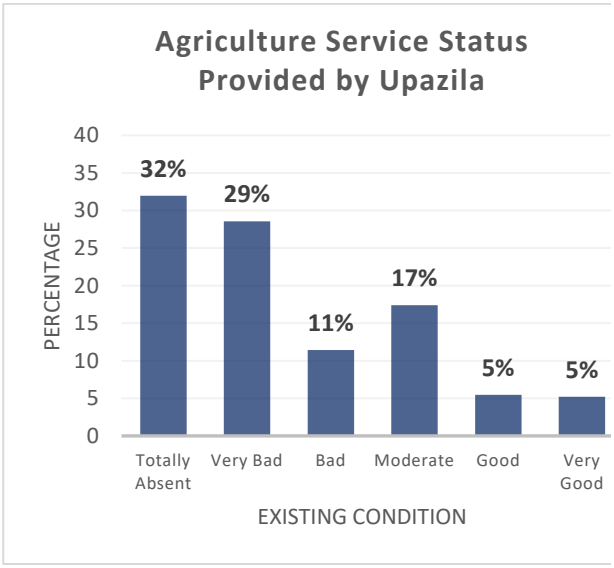
Figure 2-40: Knowledge about the Master Plan Preparation Project

The survey results indicate that 63% of respondents are not aware of the master plan project, while only 37% of the respondents know about the master plan project. This suggests relatively poor awareness and engagement among the community, which needs extreme room for improvement in reaching out to those who may not be informed about the project. Effective communication and community engagement are crucial for inclusive planning processes. Only effective public participation can help build a successful project.









(Source: Field Survey, 2023)
Figure 2-41: Assessing the Status of Services Provided by the Upazila
The chart shows the poor condition of the services provided by the Upazila. Health, education, transport, and agricultural services are not in good shape to benefit the people as they feel. Such feelings by 37% of respondents for existing health services, 26% for education services, 27% for

transportation services, 29% for agricultural services. Very small section of the respondents is satisfied with the current services provided by the Upazila.

This recommends a huge change in these sectors to make them inclusive for people of all classes. It is important to have these facilities in their own ward or union so that they can avail them easily.

2.5 Socio-Economic Survey Comparison Between UDD Survey and Consultant Survey in Nawabganj Upazila

Table 2-14: Socio-Economic Survey Comparison Between UDD Survey and Consultant Survey in Nawabganj Upazila

Issues	UDD Survey	Consultant Survey
Data Collection Method	Data was collected manually by questionnaire survey	KoboToolbox was used to collect all the data
Number of Surveyed Household	68 in Townships, 942 in Unions	400 household survey
Sampling Method	POED-5 formula developed by Professor Glenn D. Israel of Florida University has been used to determine sample households at 95% Confidence level.	Australian Bureau of Statistics sample size calculator has been used at 95% Confidence level.
Demographic Findings		
Issues	**UDD Survey**	**Consultant Survey**
Age	19-30 years age groups top the list	30-49 years age groups top the list
Gender	48.5% male, 51.5% female respondents were surveyed	62.2% male, 37.8% female respondents were surveyed
Education	The highest number of respondents have completed primary education.	The highest number of respondents have completed primary education.
Occupation	Housewife respondents were prominent	Farmers were highest number of respondents
Income	50% of respondents' income range was 10,000 to 20,000 Taka	40% respondents' income range was 20,000 to 40,000 Taka
Expenditure	50% of respondents' expenditure range was 10,000 to 20,000 Taka	50% of respondents' expenditure range was 5,000 to 15,000 Taka

Issues	UDD Survey	Consultant Survey
Savings	20,000 to 50,000 Taka was the highest portion of yearly savings	Less than 10,000 Taka was the highest portion of monthly savings
Investment	More than 1,00,000 Taka annual investment was the highest among the surveyed group	Less than 10,000 Taka was the highest portion of the monthly investment
Social Aspects		
Issues	**UDD Survey**	**Consultant Survey**
Condition of Educational Institute	Respondents were satisfied with the quality of services of Primary Schools, Secondary Schools, Colleges, Madrasa	Lack of Daycare, Kg Schools, Secondary Schools, Colleges, Universities, Higher Education Centers, and Training Centers but adequate Primary schools and Madrasa are available
Condition of Health Institute	Satisfied with Health center, Family Welfare, Community Clinic, Private Hospital	Lack of Pharmacy, Diagnostic Center, Maternal-child care center, Drug Treatment Center
Playground	78.9% of the people have access to Playground	Open space, Parks, Green areas, Public Square, and Playground are the most prevalent and highly rated services
Bank	78.6% of people have access to Bank	Rating 2 of Banks indicating inadequate services
Community Center	86.5% of people have access to Community Center	Rating 1 of Community Center explains limited options and lower satisfaction level
Police Station, Post Office	Respondents are satisfied with Police Station service and 50.8% of people have access to the Post office	Lack of the services as rated as 2
Mosque, Graveyard, Eidgah	Most people have accessibility	Moderate availability
Infrastructure and Utilities		
Issues	**UDD Survey**	**Consultant Survey**
Water Supply Availability	The predominant source of drinking water in both urban and rural areas is the Tube well	Most people agree on the unavailability (22%) or very few availabilities (29%) of the water sources
Electricity Availability	96% of people have access to electricity in both urban and rural areas	Almost 80% of the respondents have access to adequate electricity

Issues	UDD Survey	Consultant Survey
Sanitation	61.4% of the households in the project area have sanitary latrines	About 62% of the households said the existing toilets are hygienic and adequate
Drainage	Only 1.5% of the people agreed on the availability of the drainage facility	The majority of respondents (71%) believe that drainage systems are absent
Waste Collection	95% of the respondents agreed about the unavailability of the waste management system	73% of the respondents agree on the absence of a solid waste collection system in the Upazila
Transportation Modes	More than 50% of the respondents from both Urban and Rural areas mostly move on foot	-Auto rickshaws, CNG, and Tempo are the most dominant transportation facilities - Second percentage comes as walking
Distance Travelled (Education Purpose)	-Most children travel 0.5 Km to Primary School -Travel 0.5 to 1Km for Secondary School - Travel 1-2 Km for College	46% of the respondents travel 1-2 Km for availing educational institutes
Distance Travelled (Shopping, Marketing Purpose)	The highest percentage of people travel about 1-2 Km for availing market services	Most people travel 3-5 Km for market services
Transportation Difficulties	Traffic congestion and high fares are considered the main transport problems	Bad Condition of the Road and unavailability of public transport are the major issues
Satisfaction Level (Health Sector)	About 50% of the respondents were satisfied with the quality of the Public Health Sector	About 33% of the respondents were satisfied with the quality of the Public Health Sector
Satisfaction Level (Education Sector)	About 75% of the respondents were satisfied with the quality of the Education Sector	About 33% of the respondents were satisfied with the Education Sector

2.6 Economic Activity Survey

2.6.1 Introduction

Nawabganj Upazila consists of a large area with fourteen Unions. It is an agriculture-based Upazila. Apart from farmers, people of other occupations also live in the upazila with various social, economic, and cultural diversity. The issue of the economic survey was mentioned in the Terms of Reference (ToR) of the project. in Part- A, Section 6.2- Activity Phase 2 (Data Review, Collection and Preparation Phase) and Part-B, Group F-Economic Activity Survey. The main objective of this survey is to study and analyze the existing economic condition of Nawabganj Upazila and the economic opportunities and challenges of the Upazila. Economic activities are the backbone of prosperity. They are the sources of income and livelihood that decide the lifestyle of the people. Three types of surveys were conducted to study the economic condition of the Upazila. They are Formal and informal activities and Hat/Bazar/marketplace.

Formal economic sector includes small, medium, and large industries, banks, cottage industries, different kinds of registered shops, insurance company, NGO, CBOs etc. A formal economy means the enterprises are registered, pay taxes and they formally contribute to the economy.

Informal economic activities are not registered under specific forms of national legislation which includes private unincorporated enterprises. Informal sector enterprises may be more likely to operate from the entrepreneur's home, from a market stall, or from some temporary locations on the streets. These include vendors in the street, hawkers, rickshaw pullers, drivers, unregistered laborers, etc.

Finally, **Hat/Bazar survey** has also been conducted in order to examine all the economic activities take place in those hat/bazar and challenges occurred during trading.

Understanding consumer behavior, economic service preferences, and the factors influencing the choice between informal and formal services are also studied in this section. The future economic perspective of the Upazila with consideration of national and regional connectivity, production, and consumption patterns will also be addressed here.

2.6.2 Economic Survey Methodology

2.6.2.1 Questionnaire Design

Three separate questionnaires were prepared to conduct the economic activities survey on Formal, Informal, and Hat/ Bazar studies. The questionnaires cover trade, commerce, shopping, and other related activities in the planning area. Trade encompassing banking and other financial institutions, shopping centers, and commercial establishments are also taken into consideration to understand the economic scenario. These questionnaires include information about location, type (structure, product), capacities, number of people engaged in formal and informal activities, etc. The questionnaires were finalized after consultation with the PCO. KoboToolbox was used for designing the required questionnaires. Three separate survey questionnaires are attached in the Appendix.

2.6.2.2 Sample Size Selection

A stratified random sampling method was employed to ensure representation from various demographic groups within the Upazila. A total of 150 respondents were interviewed for formal, informal, and hat/bazar surveys in all fourteen Unions. A structured questionnaire was developed to collect data on consumer demographics, utilization of economic services, reasons for choice, and satisfaction levels.

2.6.2.3 Survey Schedule

According to the schedule, an economic survey was conducted from 14th January 2024 to 16th January 2024. Interviewees/ respondents from different industries, NGO, CBO, marketplace, hat, bazar, and street sellers were interviewed.

2.6.2.4 Survey Team

During the selection of the socio-economic survey investigator team, the consultant considered both prior experience in similar survey activities and educational qualifications. Additionally, the team received guidance from a designated field supervisor. Proper training was imparted before the assignment was carried out in the field. Team members were briefed on the survey objectives, methods, and ethical considerations apart from the process of interviewing, and understanding the questions.

2.6.2.5 Data Collection and Processing

Data were collected using KoboToolbox. Following the completion of field-level survey activities, a comprehensive database was created aligned with the survey questionnaire. KoboToolbox was used to generate Excel sheets automatically for this database. All data were stored in Microsoft Excel.

2.6.2.6 Data Processing and Analysis

Survey data is subjected to quantitative analysis using Microsoft Excel software. Data are presented in tabular, graphical charts (Bar, Pie, Column) and in report form.

2.6.3 Economic Activity Scenario

Table 2-15: Distribution of Population by Activity Status

Union Name	Activity Status							
	Employed		Looking for Job		Household Work		Do not Work	
	Male	Female	Male	Female	Male	Female	Male	Female
Agla	1301	89	15	2	55	1612	332	490
Bakshanagar	1430	128	5	2	13	1840	361	474
Bandura	2177	182	34	10	41	2639	552	753
Barrah	2049	110	36	4	19	2755	591	613
Baruakhali	1286	81	11	5	13	1813	344	412
Churain	1786	142	37	15	108	2037	518	695
Galimpur	898	66	12	0	23	1034	256	360
Jantrail	2093	82	20	2	71	3118	453	541

Joykrishnapur	1686	40	9	1	23	2364	283	278
Kailail	2742	124	17	8	123	3358	542	754
Kolakopa	1436	175	2	4	23	1813	443	451
Nayansree	1851	109	24	2	60	2851	523	661
Shikari Para	1713	57	12	2	26	2160	350	493
Sholla	4290	116	28	4	124	5775	932	991
Total	**26738**	**1501**	**262**	**61**	**722**	**35169**	**6480**	**7966**

(Source: BBS 2011, Community Report, Dhaka, 2015)

The above table shows the economic activity status of the Upazila. The highest number of people are engaged in household activities as a huge percentage of women are involved in household work. The second highest number of households are employed in various economic sectors. The employed population is the highest in Sholla Union. In Galimpur Union, employed population is the lowest. The same status goes for people engaged in household chores (highest in Sholla, lowest in Galimpur). A proportion of the population does not work and very few of people are looking for job in Nawabganj Upazila. This table is based on the 2011 census when the female population engaged in employment was comparatively lower than what is today. At present many females are engaged in productive activities and earn remuneration.

Table 2-16: Distribution of Population by Employment

Union Name	**Field of Employment**					
	Agriculture		**Industry**		**Service**	
	Male	Female	Male	Female	Male	Female
Agla	813	6	130	7	358	76
Bakshanagar	486	6	71	17	873	105
Bandura	720	13	304	42	1153	127
Barrah	1150	15	249	26	650	69
Baruakhali	663	1	125	25	498	55
Churain	1237	59	96	3	453	80
Galimpur	233	3	30	2	635	61
Jantrail	1327	25	228	24	538	33
Joykrishnapur	1262	17	130	6	294	17
Kailail	2085	48	348	56	309	20
Kolakopa	206	9	96	8	1134	158
Nayansree	1315	34	138	12	398	63
Shikari Para	1156	17	43	2	514	38
Sholla	3360	58	444	13	486	45
Total	**16013**	**311**	**2432**	**243**	**8293**	**947**

(Source: BBS 2011, Community Report, Dhaka, 2015)

The table 11-2 denotes the fields of employment. As it is seen from the table, the highest percentage of the people are involved in agricultural activities. In Sholla, the highest percentage of the population is engaged in agricultural activities. A significant number of people are also engaged in service sector. Total population of Sholla is 45499 in 2011 which is almost double than any other union in the upazila representing the highest percentage of employment in all the unions. In Kolakola, Bakshanagar, Bandura, Galimpur Union, maximum number of people are attached with service sector. Some people are also engaged in industrial activities. The proportion

is low compared to other two sectors as there are not very large industries located in Nawabganj Upazila.

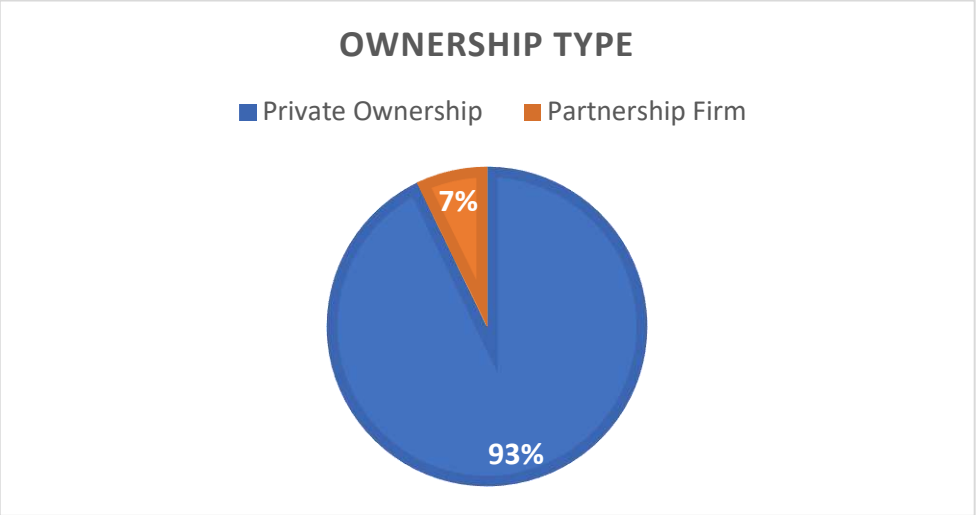
2.6.4 Analysis of the Survey Findings

The details of the economic survey findings about formal, informal, and hat/bazar are given below-

2.6.4.1 Formal Economic Activity

Formal economic activities carry formal recognition of authority in the form of registration of business, as taxpayer and having a license to conduct business. According to BBS the total number of industries in Dhaka district is 31,587 and Nawabganj Upazila has 1,225 so called industries, mostly dairy, fish and poultry farms, shops, etc. According to Upazila at a Glance of Nawabganj Upazila Parishad, there are about 250 fish farms, 240 dairy farms, and 165 poultry farms in the Upazila.

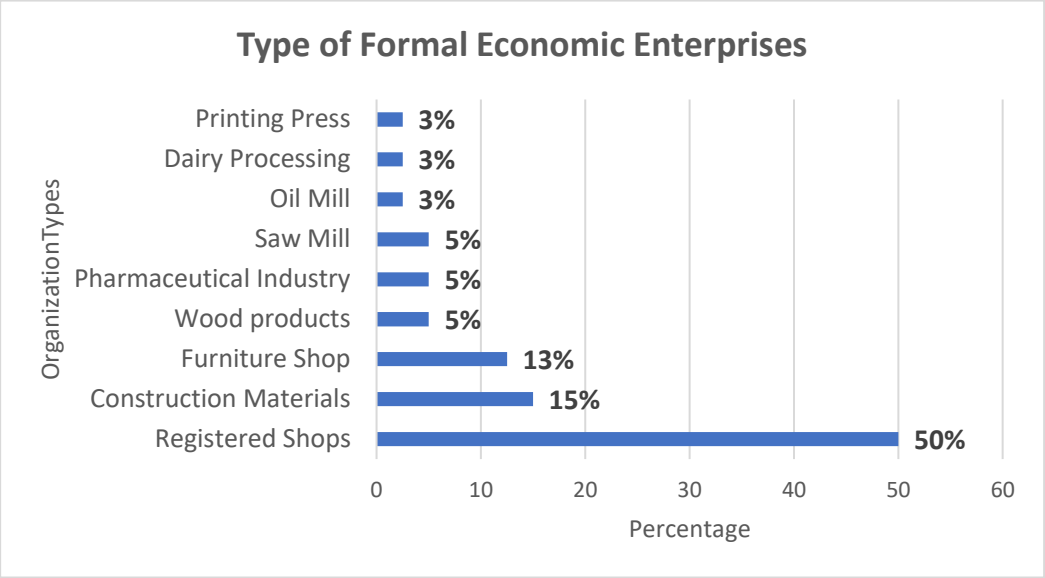
2.6.4.2 Type of Ownership and Enterprises



(Source: Field Survey, 2024)

Figure 2-42: Type of Ownership

The pie chart reveals a predominant trend in ownership distribution in the formal economic sector in Nawabganj Upazila, with individual private ownership comprising a substantial majority at 93%, overshadowing partnership firms which account for a comparatively smaller share of 7%. This suggests a prevalent preference for personal ownership within the surveyed entities. The prevalence of private ownership might be indicative of a desire for more individual control or streamlined decision-making processes. The limited presence of partnership firms signifies a lesser inclination towards shared ownership structures.

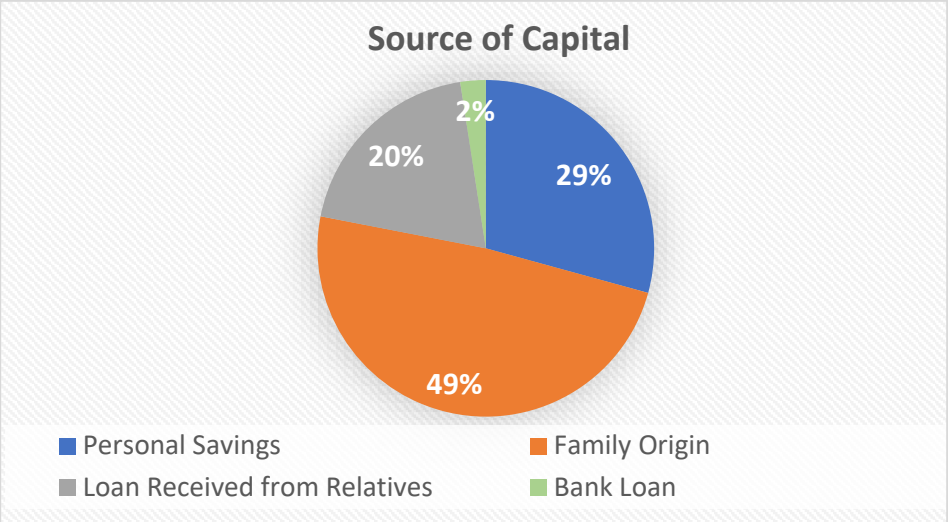


(Source: Field Survey, 2024)

Figure 2-43: Type of Surveyed Formal Enterprises

The bar chart in Figure 11-2 illustrates the diverse composition of the formal economic sector entities across various industries highlighting the distribution of enterprises with specific categories. Registered shops constitute the largest portion of the survey at 50%, indicating their significant presence in the surveyed economic landscape. Grocery shops, general store, stationary shops etc. of different types are present in the Upazila. The construction materials sector follows closely at 15%, emphasizing its substantial role in the formal economy. Furniture shops contribute 13% of the surveyed sectors. Wood products, the pharmaceutical industry, and sawmills each comprising 5%, of the sector, underscoring their roles in the total formal economic sector. The remaining sectors, such as printing presses, diary processing, and oil mills, each contribute 3% showcasing a diversified economic environment. This comprehensive breakdown provides valuable insights into the structure of the formal economic sector, highlighting key players and their relative contributions to the overall economic landscape.

2.6.4.3 Source of Capital



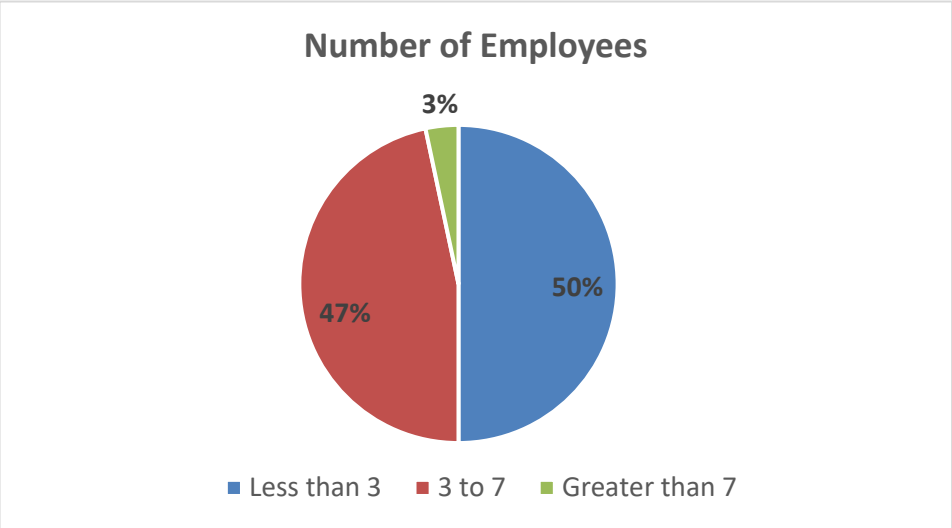
(Source: Field Survey, 2024)

Figure 2-44: Source of Capital

The data outlines the diverse sources of capital utilized by entities, shedding light on the financial landscape within the surveyed context. The predominant source of capital is family origin, constituting nearly half at 49%, emphasizing the significance of familial support in capitalizing businesses. Personal savings follow closely behind at 29%, indicating reliance on individual financial resources. Additionally, loans received from relatives contribute 20%, underlining the role of familial networks in providing financial banking. Bank loans constitute a relatively minor portion at 2%, suggesting a limited dependence on formal financial institutions.

This distribution of capital sources reflects a varied and interconnected approach to sourcing capital, with a notable emphasis on personal and family-based funding. Understanding these diverse channels is essential for comprehending the financial dynamics that underpin business ventures in the Upazila.

2.6.4.4 Number of Employees

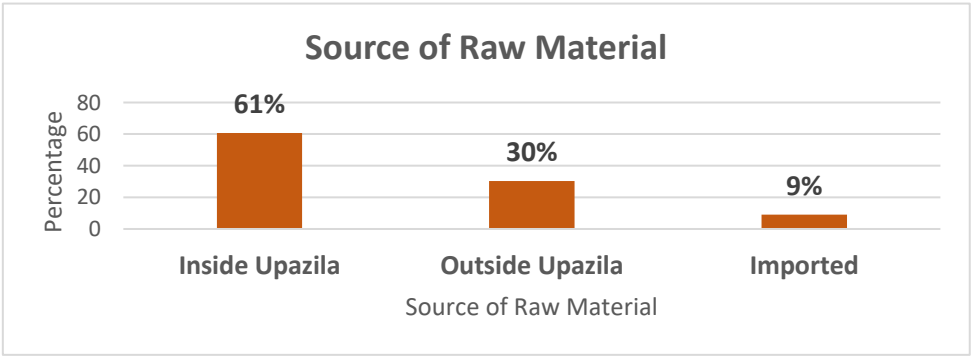


(Source: Field Survey, 2024)

Figure 2-45: Number of Employees in Enterprises

The provided data offers insights into the distribution of number of employees within surveyed entities of the Upazila. A substantial 50% of the businesses have fewer than 3 employees, reflecting a trend of smaller-scale enterprises in the surveyed context. The category of 3 to 7 employees closely follows, encompassing 47% of the entities, indicating a significant portion of businesses operating at a moderate scale. However, a smaller fraction, comprising 3%, consists of businesses with more than 7 employees, emphasizing the limited prevalence of larger-scale enterprises within the surveyed sample. This distribution underscores the diverse nature of employment sizes, with a notable concentration in the smaller and moderately-sized business categories. Understanding these employment patterns is crucial for policymakers, researchers, and business stakeholders to formulate strategies that cater to the unique needs and challenges associated with businesses of varying sizes in the surveyed area.

2.6.4.5 Source of Raw Material



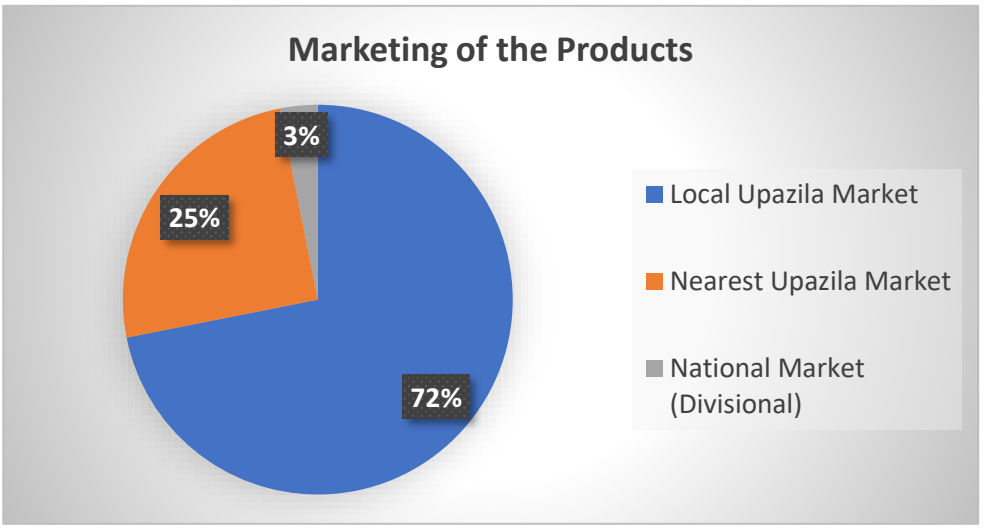
(Source: Field Survey, 2024)

Figure 2-46: Source of Raw Material

The above bar chart provides valuable insight into the sources of raw materials for production. The majority of processing units accounting for 61%, rely on raw materials sourced from within the Upazila itself, indicating a strong local supply chain. Meanwhile, 30% of entities acquire their raw materials from outside the Upazila, demonstrating a substantial but comparatively smaller reliance on external sources. Imported raw materials contribute to 9% of the total, underscoring a minor yet existing reliance on international supply chains.

This distribution highlights the importance of local resources in sustaining the production processes of the surveyed enterprises, with a notable preference for sourcing raw materials within the Upazila. The insights derived from this data can inform strategic decisions related to supply chain management, trade policies, and economic development initiatives within the region.

2.6.4.6 Marketing of Manufactured Goods



(Source: Field Survey, 2024)

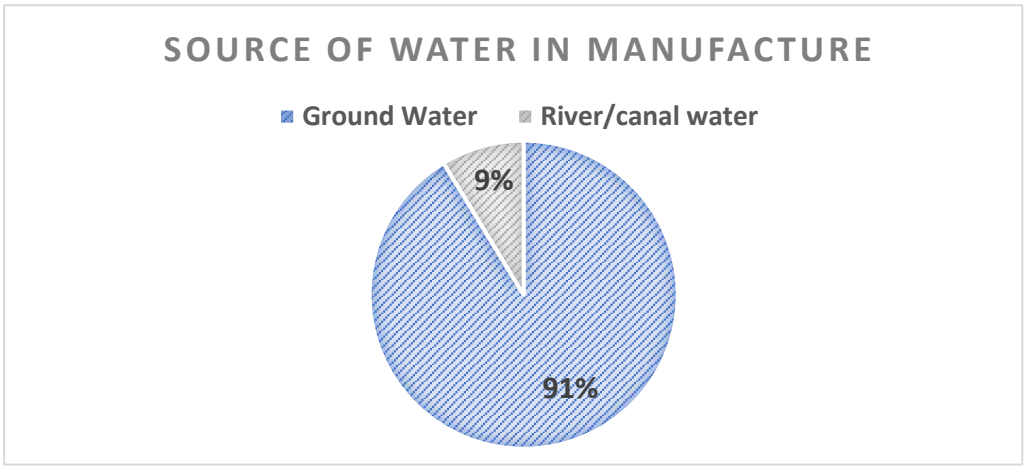
Figure 2-47: Marketing of Manufactured Goods

The above pie chart explains key aspects of the marketing strategies employed by businesses in the Nawabganj area for their manufactured goods. A significant majority of businesses, constituting 72%, the primary target is the local Upazila market, indicating a strong emphasis on catering to the immediate vicinity. Additionally, 25% of businesses extend their reach to the nearest Upazila market, showcasing a broader but still regional marketing approach. A smaller percentage, comprising 3%, engages in marketing their goods at the national level, specifically within the divisional market.

This distribution highlights a predominantly local and regional focus in the marketing efforts of the surveyed businesses, with only a limited number venturing into the broader national market.

Understanding these market preferences is crucial for businesses, policymakers, and stakeholders to tailor strategies that align with the targeted customer base and market dynamics within the surveyed region.

2.6.4.7 Source of Water

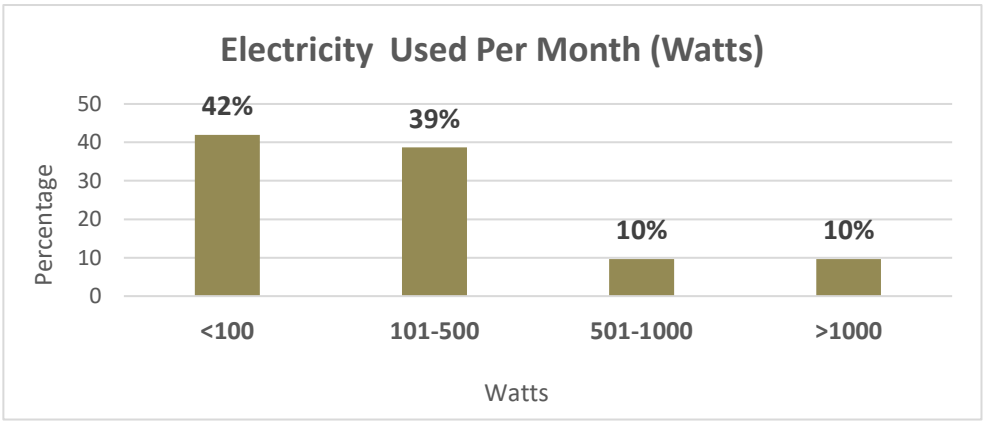


(Source: Field Survey, 2024)

Figure 2-48: Source of Water in Manufacture

The chart reveals that the primary source of water in production processes of goods in Upazila is ground water, accounting for a substantial 91% of the total. Ground water, extracted through wells, tubewells and boreholes, plays a pivotal role in ensuring the consistent and reliable supply necessary for industrial operations. In contrast, river and canal water constitute a smaller percentage at 9%. Although this source contributes less to the overall water usage, it remains significant, particularly in regions where ground water accessibility is limited or specific industrial needs necessitate diverse water sources. The data underscores the importance of sustainable water management practices to preserve these resources and maintain the resilience of manufacturing activities. But dependance on ground water should be lessened as ground water level is decreasing, more surface water should be encouraged to use.

2.6.4.8 Amount of Electricity Used

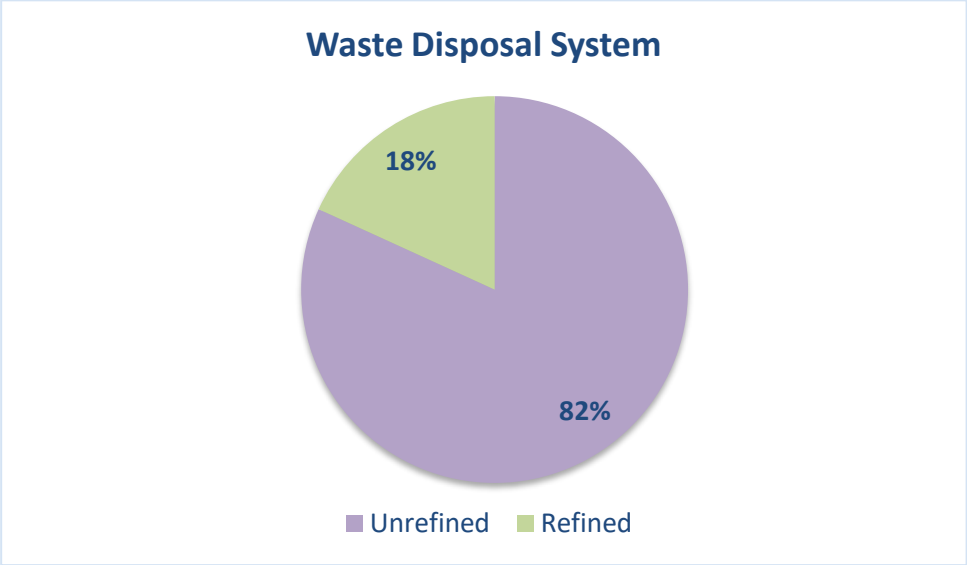


(Source: Field Survey, 2024)

Figure 2-49: Electricity Used

The above chart on electricity usage per month, categorized by wattage ranges, offers insights into the diverse distribution of energy consumption in various shops, and sectors of the formal economy. A substantial 42% of users utilize less than 100 watts, indicating a prevalence of low-power devices or appliances. Close behind, the 101-500 watts range accounts for 39%, reflecting moderate energy needs for various electronics. The 10% distribution in both the 501-1000 watts and greater than 1000 watts categories signify a relatively small segment of users with higher energy demands, likely involving energy-intensive appliances or machinery. These findings emphasize the importance of understanding and addressing the varied energy consumption patterns to implement targeted strategies for sustainable energy use and efficiency across different user profiles.

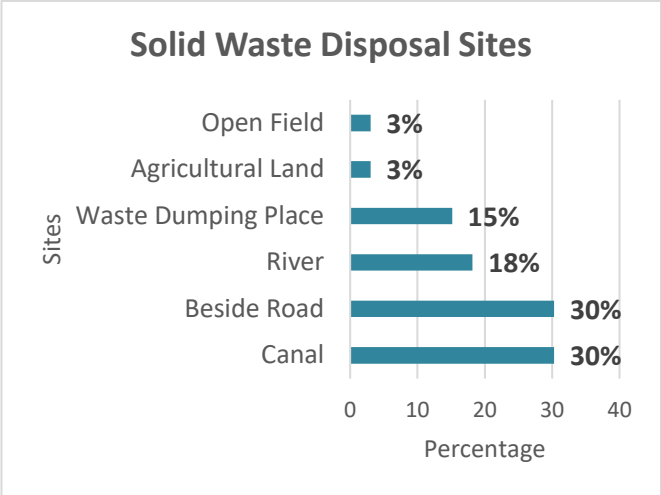
2.6.4.9 Waste Disposal

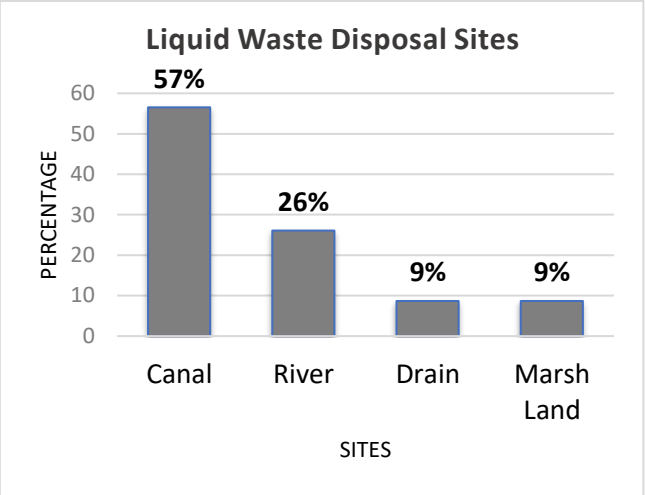


(Source: Field Survey, 2024)

Figure 2-50: Waste Disposal System

Figure 11-9 outlines the distribution of waste disposal systems, categorized into unrefined and refined methods, with associated percentages. Unrefined waste disposal represents the predominant approach, accounting for a substantial 82% of the total. This category likely involves processes that do not undergo advanced treatment or processing before disposal. In contrast, the refined waste disposal method constitutes 18%, indicating a smaller but notable portion of waste management practices involving more advanced and controlled procedures. The data underscores the prevalence of unrefined waste disposal practices, emphasizing the need for sustainable waste management strategies to address environmental concerns and promote responsible disposal methods in the Upazila. Efforts to increase the adoption of refined waste disposal systems may play a role in mitigating the environmental impact associated with unrefined methods.





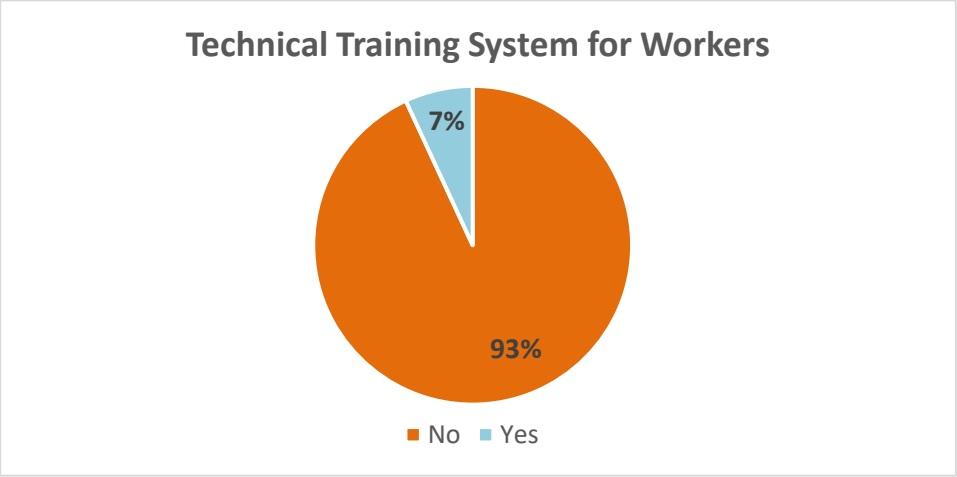
(Source: Field Survey, 2024)

Figure 2-51: Waste Disposal Sites

The above figure provides an overview of solid waste disposal sites, categorized by location and their respective percentages. Shops, mills, dairies, and waste disposal systems were interrogated. Existing Canal areas serve as disposal sites for 30% of the waste, additionally, 30% of solid waste is disposed of beside roads, indicating a significant use of roadside locations for waste disposal with riverbanks following at 18%. Icchamati, Kaliganga are the main rivers where river water is polluted due to waste dumping. Waste dumping places constitute 15%, representing designated locations for the disposal of solid waste. Agricultural land and open fields each account for 3% of waste disposal, reflecting a smaller proportion of waste management in these areas. The distribution underscores the diverse and widespread nature of waste disposal practices, emphasizing the importance of implementing effective waste management strategies to reduce environmental impact and promote cleaner, healthier communities. Efforts to discourage improper waste disposal in natural environments and encourage the use of designated dumping places may contribute to more sustainable waste management practices in Nawabganj Upazila.

Again, canals emerge as the primary liquid waste disposal sites, accounting for a substantial 57% of the total. Rivers follow at 26%, representing another significant location for liquid waste discharge in the Upazila. Drain systems and marshlands each contribute 9%, reflecting a smaller but notable proportion of liquid waste disposal in these areas. The prevalence of liquid waste disposal in natural water bodies like canals and rivers raises concerns about environmental impact and water quality. It underscores the importance of adopting sustainable waste management practices, such as wastewater treatment and proper disposal methods, to minimize adverse effects on ecosystems and public health. Efforts to redirect liquid waste away from natural water sources and towards controlled treatment facilities could contribute to more responsible and environmentally friendly liquid waste management.

2.6.4.10 Technical Training

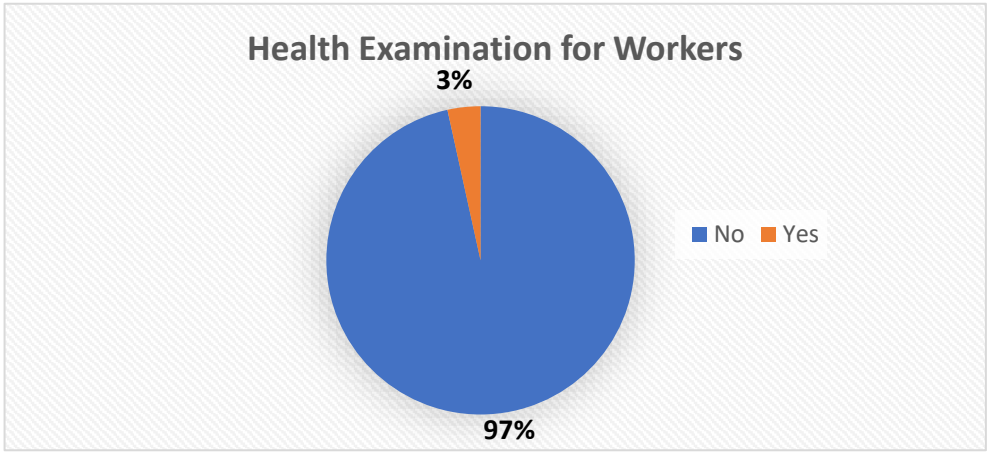


(Source: Field Survey, 2024)

Figure 2-52: Technical Training System

In Nawabganj Upazila, a significant portion (93%) of workers do not have technical training. In contrast, 7% of workers are fortunate enough to have such training. The data highlights a potential gap in providing professional development opportunities for a substantial portion of the workforce. Training is crucial for enhancing the skills and competencies of workers ultimately contributing to overall workforce efficiency to have better job opportunity. Addressing the lack of technical training opportunities may be essential for fostering a skilled and adaptable workforce in various industries.

2.6.4.11 Health Checkup for Employees



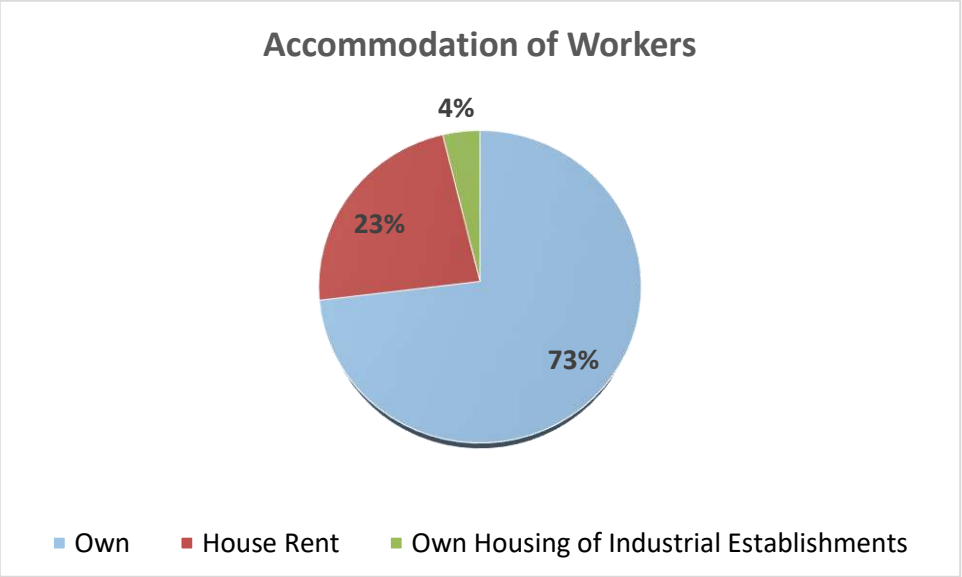
(Source: Field Survey, 2024)

Figure 2-53: Health Examination for Workers

A notable 97% of workers do not undergo health examination, while only 3% benefit from such a checkup. The overwhelming prevalence of the "No" category underscores a potential gap in prioritizing and implementing comprehensive health examination protocols for the majority of the workforce. The limited access to health examinations may have implications for both

individual well-being and overall workplace health and safety. Implementing or improving health examination systems could contribute to the early detection of health issues, fostering a healthier and more productive workforce.

2.6.4.12 Worker Accommodation

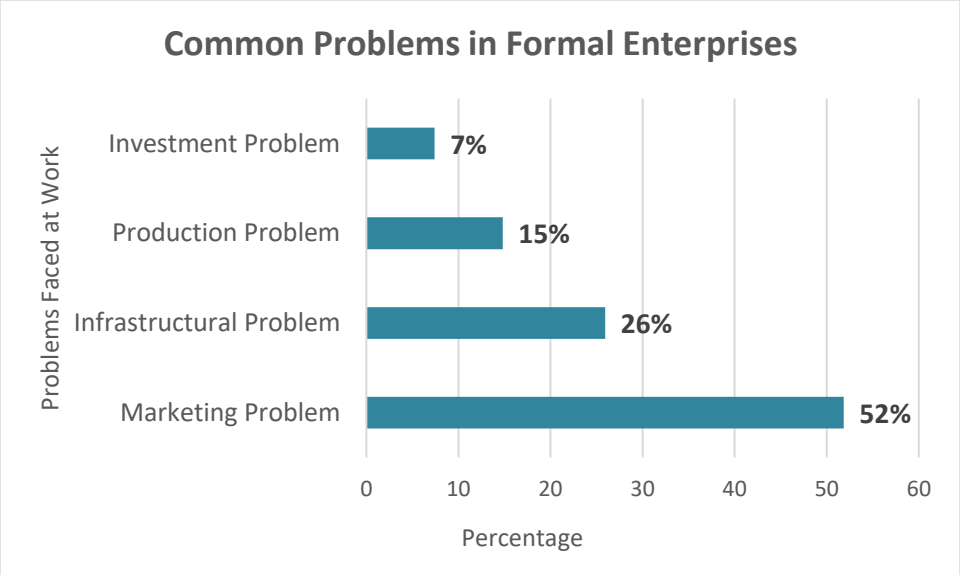


(Source: Field Survey, 2024)

Figure 2-54: Accommodation of Workers

Figure 11-13 provides insight into the residence status of workers, categorized by three options: "Own," "House Rent," and "Own Housing of Industrial Establishments," along with their respective percentages. The majority of workers, comprising 73%, own their residences. In contrast, 23% of workers reside in houses for which they pay rent, indicating a significant portion of the workforce living in rented accommodation. A smaller percentage, 4%, resides in housing provided by the industrial establishments themselves. This distribution highlights the diverse housing situations of the workforce, with a substantial majority owning their homes, a significant portion renting, and a smaller fraction benefiting from housing provided by their employers. Understanding these patterns is crucial for addressing housing-related needs and designing workplace policies that accommodate the varied living arrangements of the workforce.

2.6.4.13 Problems Faced by the Enterprises



(Source: Field Survey, 2024)

Figure 2-55: Problems Faced in the Formal Enterprises

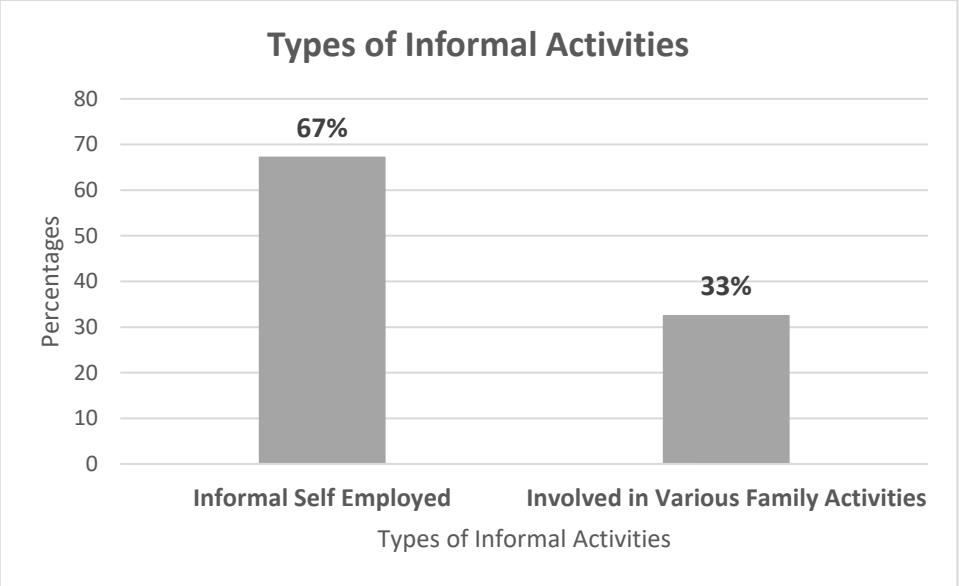
The data presents common problems encountered in formal sectors, categorized into marketing problem, production problem, investment problem, and infrastructural problem, along with their respective percentages. The most prevalent issue, constituting 52%, is identified as marketing problems like lack of buyers, lack of transportation facilities, etc. emphasizing challenges related to promoting and selling products or services. Additionally, an infrastructural problem like problems in the supply of raw materials, waste disposal problems, and lack of electricity represents 26%, highlighting concerns related to the supporting physical and organizational structures. Production problem like lack of skilled employees, lack of capital, follows with 15%, signifying obstacles in the manufacturing or operational processes. Investment problem accounts for 7%, reflecting challenges related to securing financial resources for business activities.

This data sheds light on the multifaceted challenges faced by formal sectors, emphasizing the need for strategic interventions to address marketing, production, investment, and infrastructural issues in order to foster a conducive environment for sustained business growth.

2.6.5 Informal Economic Activity

Informal employment refers to those jobs or enterprises that are not registered with any government agencies. They do not pay taxes to any authorities like local government or central tax agency. They generally lack basic social or legal protection or employment benefits.

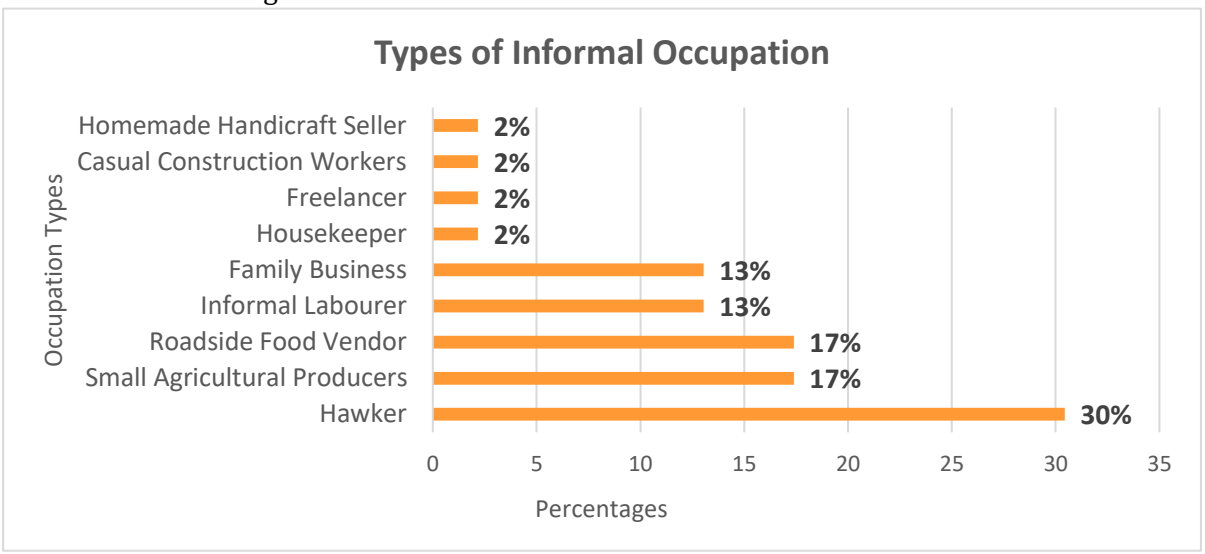
2.6.5.1 Type of Informal Activities



(Source: Field Survey, 2024)

Figure 2-56: Types of Informal Activities

The informal economic activities are mostly self-employed (67%). This category encompasses a diverse range of occupations, from small-scale entrepreneurs to freelancers, indicating a significant portion of the informal workforce derives income from self-initiated endeavors. Involved in various family activities category highlights individuals engaged in informal activities within the family context (33%). These activities could range from caregiving responsibilities to participation in family-run businesses, underscoring the multifaceted nature of informal work within familial settings.



(Source: Field Survey, 2024)

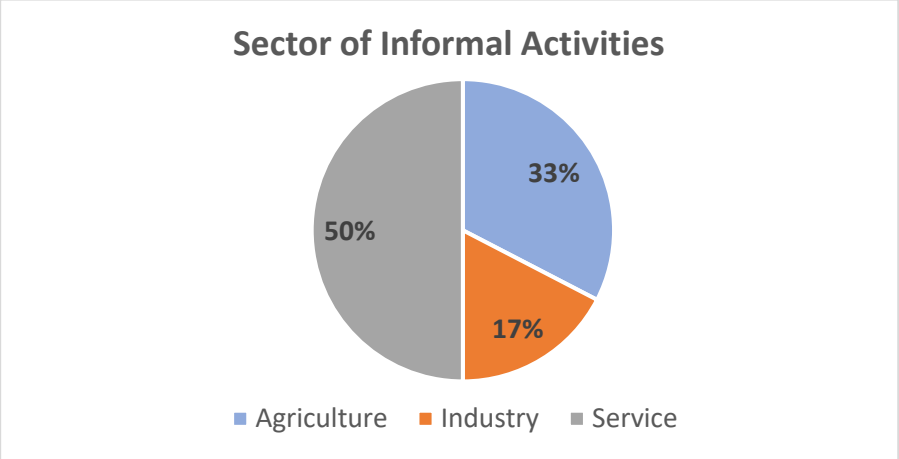
Figure 2-57: Types of Informal Occupation

This analysis explores the diverse landscape of informal occupations. The data reveals a varied distribution across multiple categories, with hawkers constituting the largest segment at 30%, followed by roadside food vendors (17%) and small agricultural producers (17%). Informal laborers and family business participants each contribute 13% to the overall composition. Other categories, including housekeepers, freelancers, casual construction workers, and homemade handicraft sellers, make up the remaining 10% collectively. This diversity underscores the heterogeneous nature of informal occupations in Nawabganj Upazila, ranging from street-level commerce like hawking to agricultural pursuits and family-based enterprises.

Policymakers and stakeholders should recognize this complexity to formulate targeted strategies that address the distinct challenges and opportunities associated with each category, fostering a more inclusive and responsive approach to support the informal workforce.

2.6.5.2 Sector of Informal Activities

The main economic sector falls into the categories of agriculture, industry and service. Informal activities also can be classified into these three broad categories.

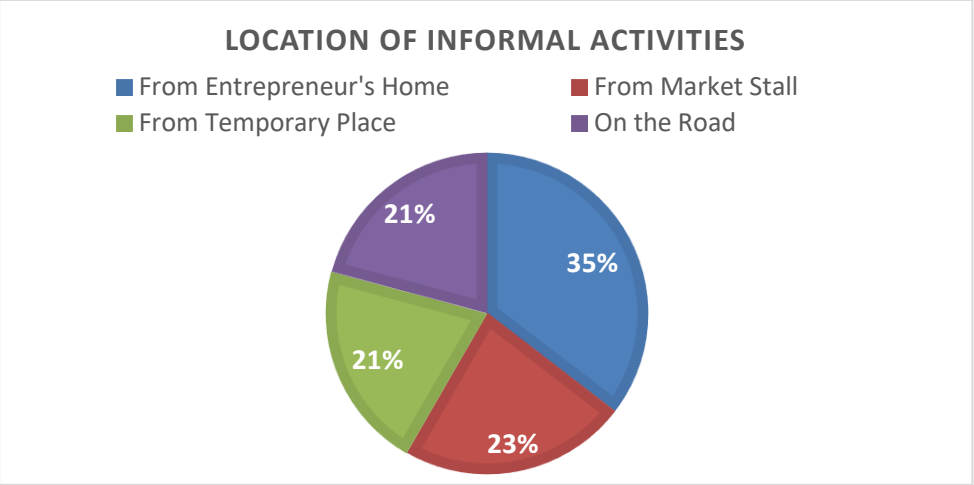


(Source: Field Survey, 2024)

Figure 2-58: Sector of Informal Activities

The data presented in Figure 11-17 illustrates the distribution of informal sectors in terms of percentage contribution to the overall economy in Nawabganj Upazila. The service sector emerges as the predominant force, commanding half of the share of the entire surveyed population which showcase increasing importance of service-oriented activities in economic growth. Agriculture holds a significant share at 33%, highlighting its substantial role in the economic landscape. The industrial sector follows with 17%, indicating a notable but comparatively smaller impact. This sectoral distribution underscores a diverse economic structure with a considerable emphasis on services, while still acknowledging the significance of agriculture and industry in the overall economic framework.

2.6.5.3 Location of Informal Activities

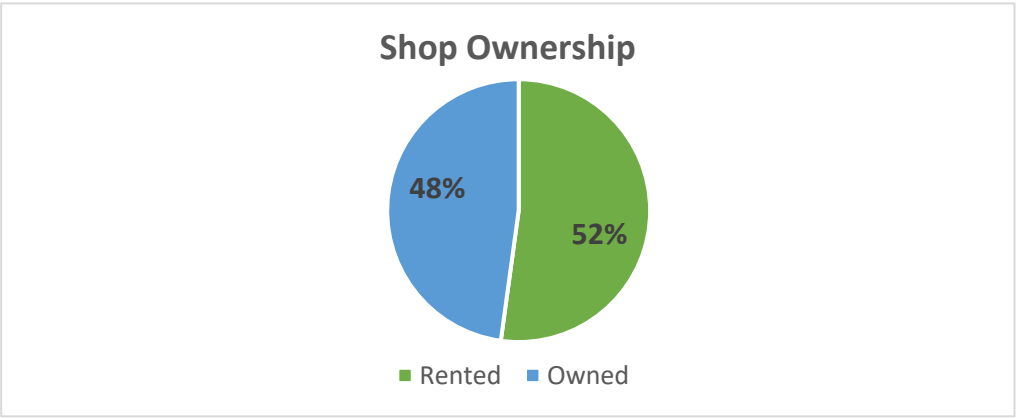


(Source: Field Survey, 2024)

Figure 2-59: Location of Informal Activities

Figure 11-18 delineates places where informal activities are conducted in Nawabganj Upazila. Entrepreneurial endeavors conducted from the entrepreneur's home constitute a substantial portion at 35%, reflecting the prevalence of home-based businesses in informal economies. Market stalls also serve as significant hubs, contributing 23% to the overall landscape of informal activities. Temporary places and on-the-road activities each account for 21%, emphasizing the mobile and dynamic nature of a considerable portion of informal economic engagements. This arrangement underscores the diversity in locations where informal activities thrive, ranging from the entrepreneur's home to more mobile setups like market stalls and on-the-road enterprises.

2.6.5.4 Ownership of Shop



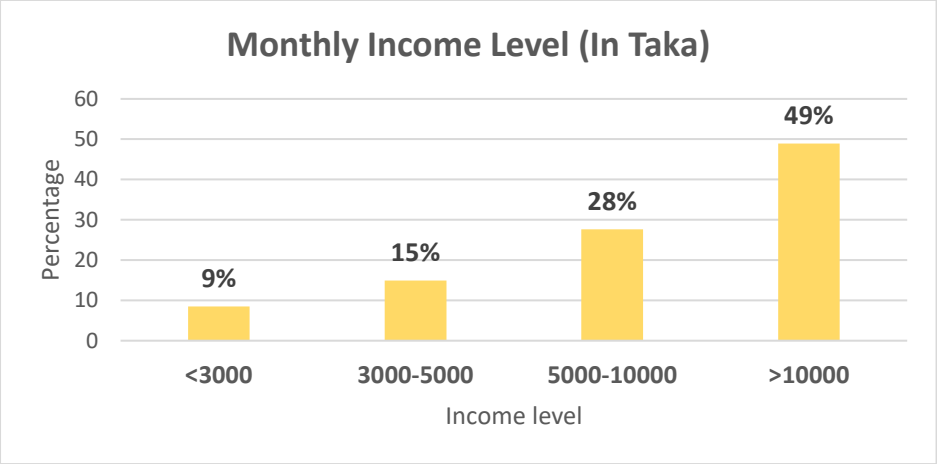
(Source: Field Survey, 2024)

Figure 2-60: Ownership of Shop

Figure 11-19 outlines the distribution of shop ownership, with 52% of shops being rented and 48% operated by the owner. This suggests that a significant majority of businesses opt for rented spaces, possibly due to factors such as flexibility, lower initial costs, leasing arrangements or specific business needs. On the other hand, nearly half of the shops are owned, indicating a substantial portion of entrepreneurs who have invested in and established ownership of their commercial spaces. This nuanced division between rented and owned shops reflects the varied strategies and preferences among business owners in terms of their approach to securing physical establishments for their enterprises.

2.6.5.5 Monthly Income Level

The income range varies according to informal activity type. Their works are mainly temporary and are not registered.

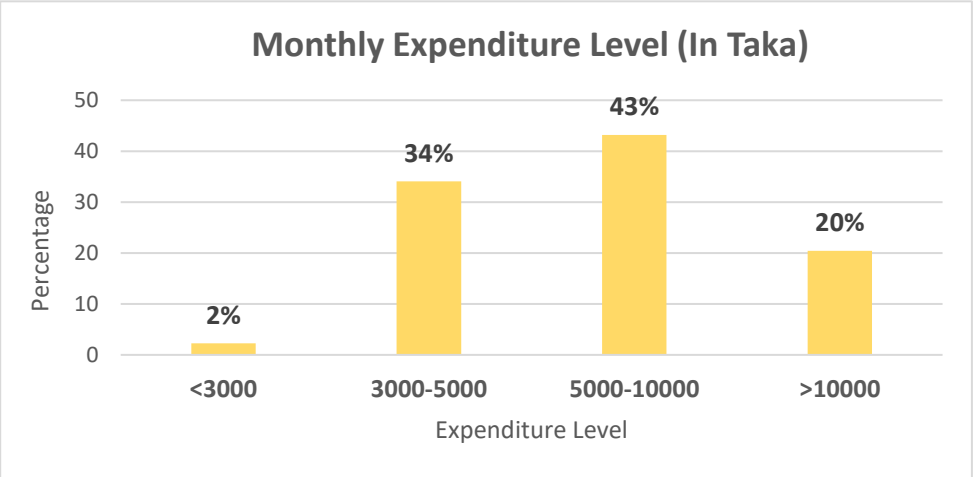


(Source: Field Survey, 2024)

Figure 2-61: Monthly Income Level

The monthly income levels for informal activities reveal a varied distribution among the surveyed population. Those earning less than 3000 Taka constitute 9%, indicating a small segment of the community in the very low-income bracket. The range of 3000-5000 Taka captures 15%, while the 5000-10000 Taka bracket encompasses 28%, portraying a substantial portion of the population in a low-income range. The majority falls into the greater than 10000 Taka category, making up 49%, signifying a significant portion with relatively medium income levels. This distribution reflects a diverse income landscape of the households.

2.6.5.6 Monthly Expenditure Level

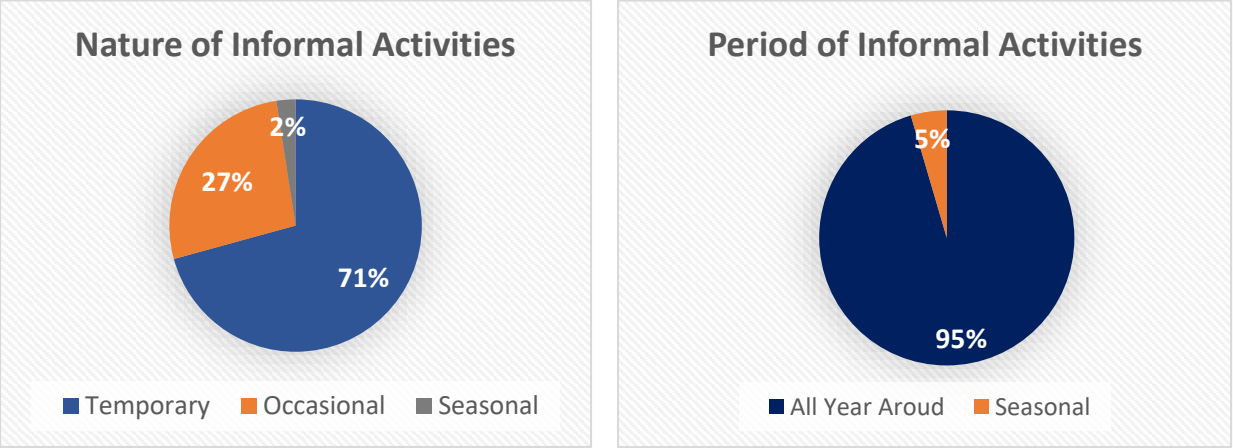


(Source: Field Survey, 2024)

Figure 2-62: Monthly Expenditure Level

The data on monthly expenditure levels illustrates a varied financial landscape among the surveyed population in the Upazila. Those with a monthly expenditure of less than 3000 Taka constitute a small percentage at 2%, indicating a limited but existing segment with relatively very lower spending. The range of 3000-5000 Taka encompasses a significant portion at 34%, reflecting a considerable number of individuals with low spending habits. The 5000-10000 Taka range captures 43%, representing a sizable proportion of the population with a moderate expenditure. The greater than 10,000 Taka category accounts for 20%, indicating a notable segment with comparatively higher spending capacities. This provides insights into the diverse spending patterns within the surveyed community, reflecting various levels of financial priorities and capacities.

2.6.5.7 Temporal Nature of Informal Activities



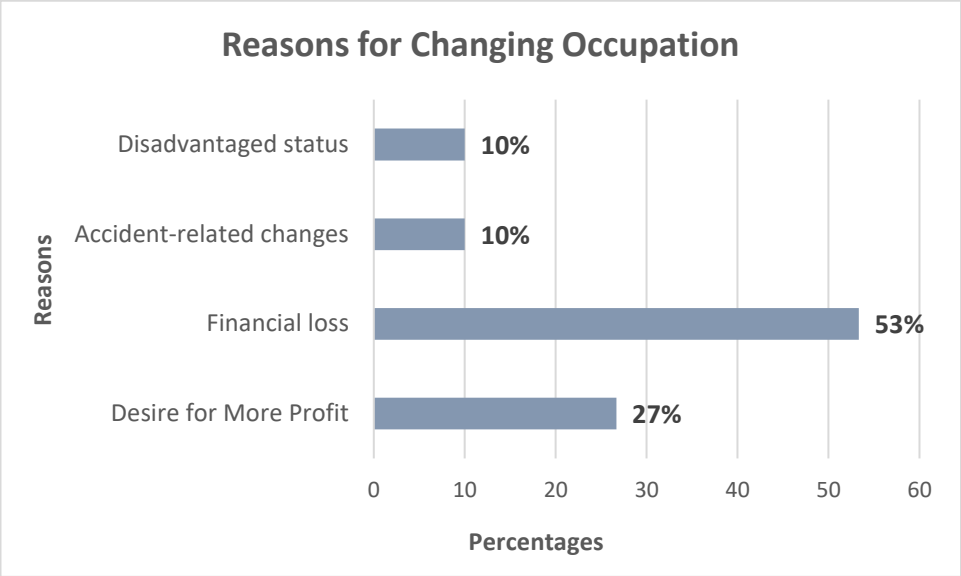
(Source: Field Survey, 2024)

Figure 2-63: Temporal Nature of Informal Activities

The data on the temporal nature of informal activities reveals a predominant focus on temporary engagements, constituting 71% of the surveyed activities. Occasional activities make up 27%, suggesting a noteworthy but less frequent participation in such endeavors. Occasional activities denote activities that occurred to any certain occasion. Seasonal activities represent a smaller percentage at 2%, indicating a minimal presence of informal activities that are specifically tied to certain seasons. This distribution underscores the prevalence of temporary and occasional nature in the surveyed informal activities, with a smaller contribution from those with a seasonal character.

The pie chart in Figure 11-22 indicates a predominant trend of year-round engagement, constituting 95% of the surveyed activities. In contrast, seasonal activities contribute a smaller percentage at 5%, suggesting a limited presence of informal activities tied to specific seasons. This highlights the sustained and ongoing nature of the majority of informal activities, with only a minor portion showing seasonality.

2.6.5.8 Reasons for Change of Occupation

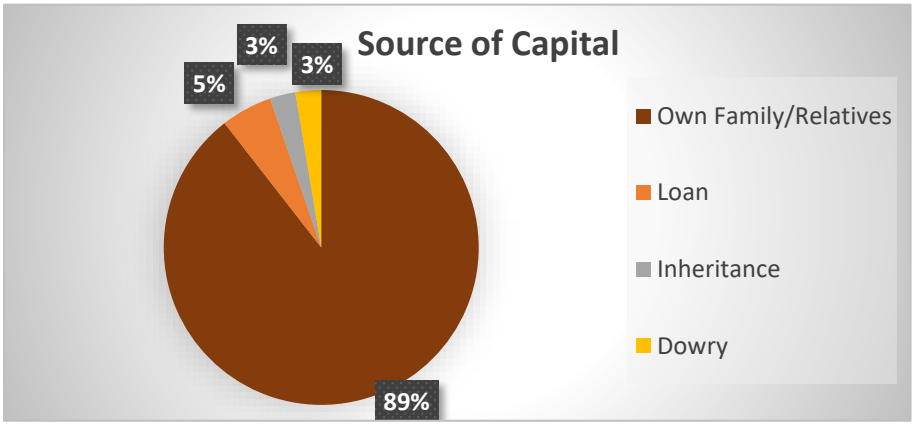


(Source: Field Survey, 2024)

Figure 2-64: Reasons for Changing Occupation

The chart in Figure 11-23 shows the reasons for changing occupations and indicates various factors influencing such transitions. A significant portion, 53%, cites financial loss as the primary reason for changing occupations, highlighting the economic implications in decision-making. The desire for more profit accounts for 27%, underscoring the entrepreneurial drive and financial motivation for occupational changes. Accident-related changes and disadvantaged status each contribute 10%, suggesting that unforeseen circumstances and socio-economic challenges also play a role in occupational transitions. This distribution emphasizes the multifaceted nature of reasons behind changes in previous occupations, ranging from financial considerations to external factors like accidents and social disadvantages.

2.6.5.9 Source of Capital

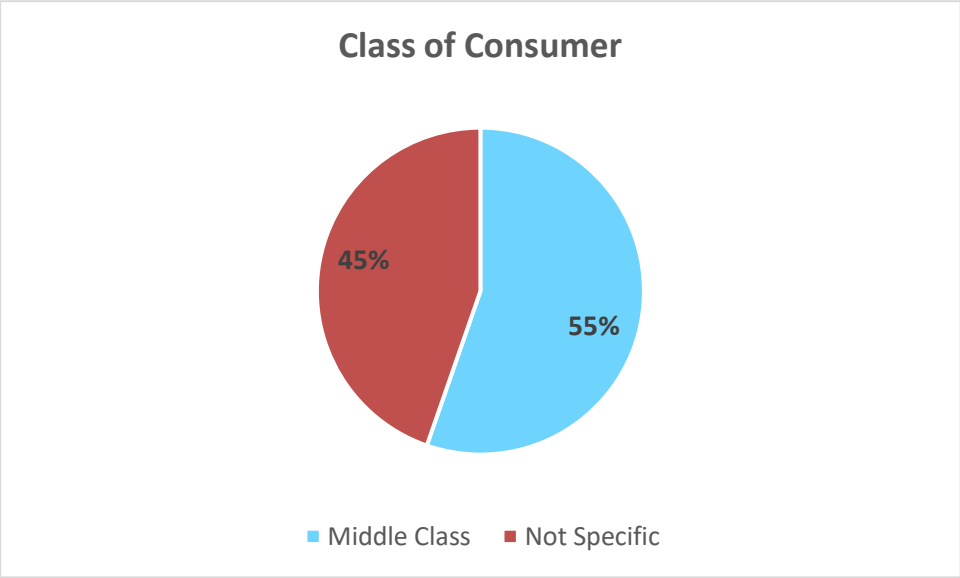


(Source: Field Survey, 2024)

Figure 2-65: Source of Capital

The data on the source of capital for entrepreneurs indicates a predominant reliance on familial support, with 89% securing capital from their own family or relatives. Loans contribute to 5%, representing a smaller but notable portion of entrepreneurs relying on borrowed funds. Inheritance and dowry each constitute 3%, suggesting a minor yet existing role of inherited wealth or dowry in financing entrepreneurial ventures. This highlights the familial and borrowed sources as the primary means for entrepreneurs to acquire capital for their business pursuits.

2.6.5.10 Class of Consumer

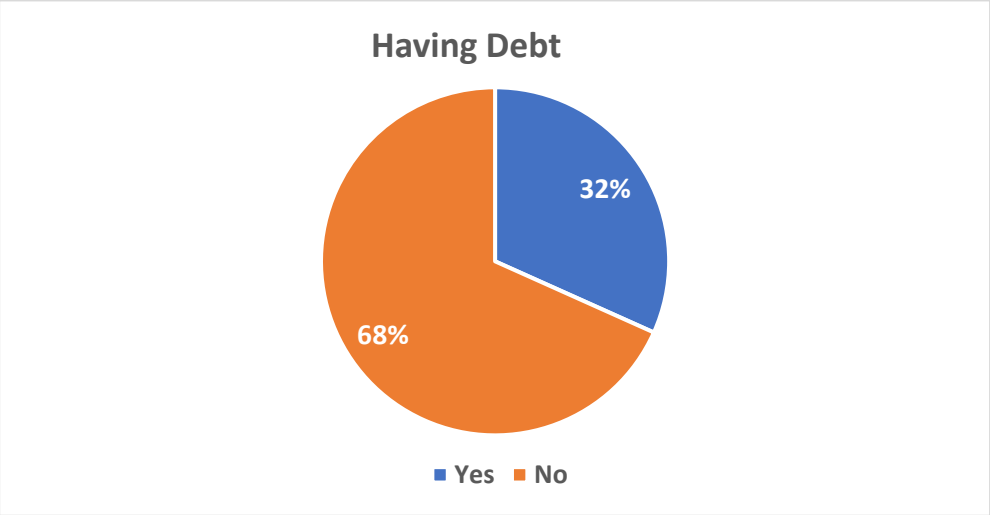


(Source: Field Survey, 2024)

Figure 2-66: Class of Consumer

The breakdown of consumer classes reveals a predominant presence of the middle class, comprising 55% of the surveyed consumers. The remaining 45% fall into the "Not Specific" category, suggesting a diverse group without a specific classification into traditional socio-economic classes. This distribution implies a significant representation of middle-class consumers, indicating their substantial influence on the market, while also acknowledging the diversity and fluidity in consumer classifications among the surveyed population.

2.6.5.11 Condition of Loan

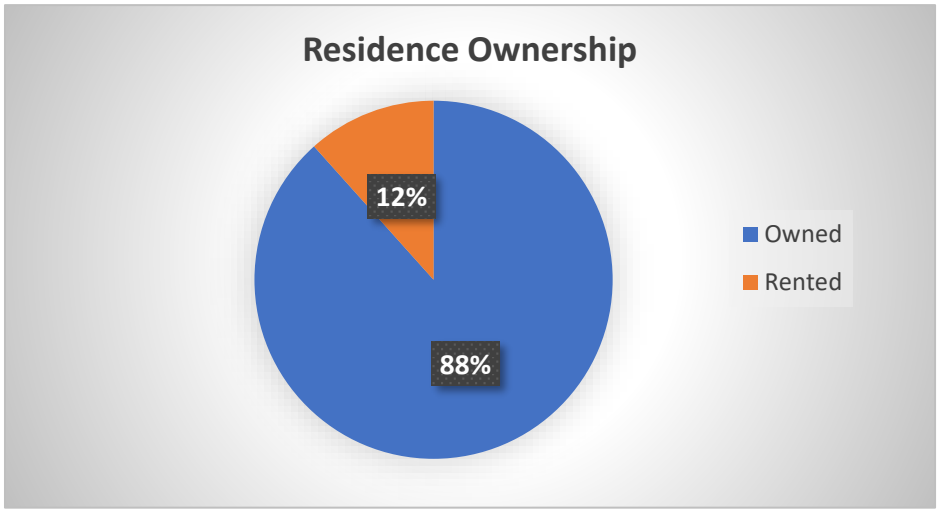


(Source: Field Survey, 2024)

Figure 2-67: Loan Condition

The above pie chart indicates that 32% of the surveyed population has taken a loan, while 68% have not. This distribution highlights a significant portion of the population avoiding the use of loans, potentially reflecting a preference for self-financing or a cautious approach to financial obligations. Meanwhile, the presence of individuals with loans suggests that borrowing is still a notable financial strategy for a portion of the surveyed population.

2.6.5.12 Ownership of Residence



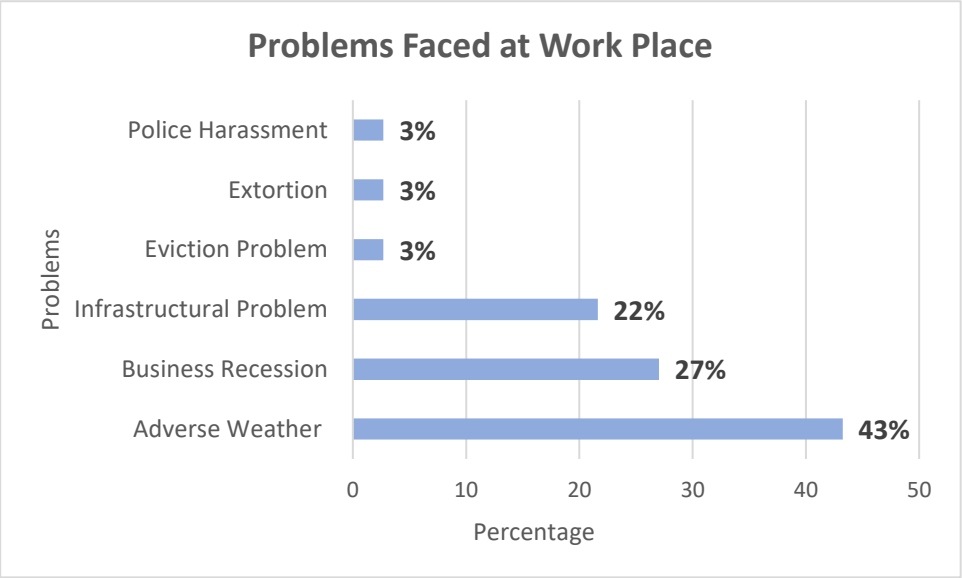
(Source: Field Survey, 2024)

Figure 2-68: Ownership of Residence

The above chart on residence ownership reveals a substantial majority of individuals owning their residences, constituting 88% of the respondents. In contrast, 12% of respondents indicate that they reside in rented accommodations. This data suggests a prevalent trend of

homeownership among the surveyed population, reflecting a significant level of property ownership within the community.

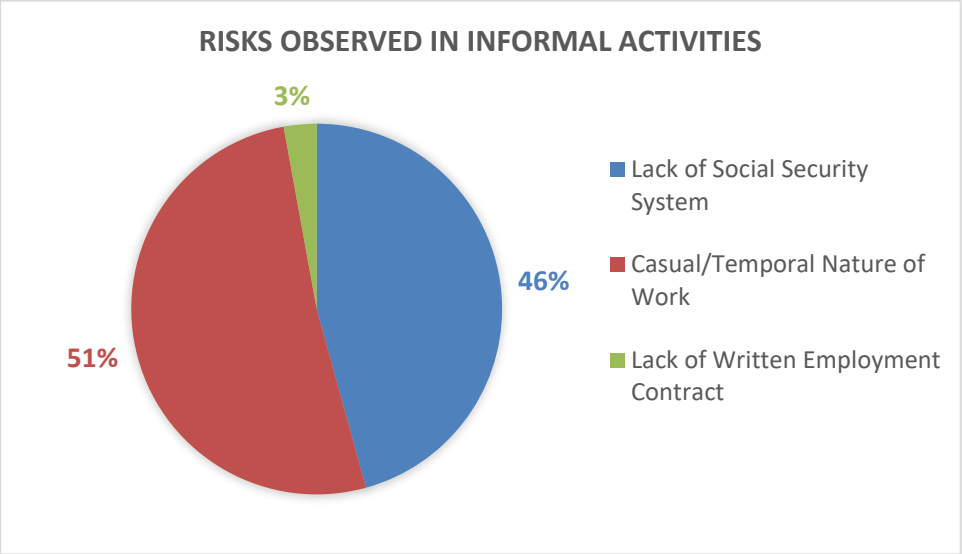
2.6.5.13 Problems Faced at Work Place



(Source: Field Survey, 2024)

Figure 2-69: Problems Faced in the Work Place

In informal sector, problems faced by the entrepreneurs is higher than other sectors as these activities are not registered and majority of economic activities take place at temporary locations. The above chart explains the problems faced by the surveyed population. Adverse weather conditions are a significant concern for 43% of the respondents, underscoring the impact of weather-related challenges on their activities. Many informal activities take place in open spaces hence the weather affects this much for this kind of job. Business recession is identified as a problem by 27%, reflecting economic challenges faced by a notable portion of the surveyed population. They experience economic downturns or reduced business activity. Infrastructural problems are noted by 22% which includes such as inadequate facilities, technological shortcomings, or logistical challenges while eviction, extortion, and police harassment each contribute 3%, suggesting the relatively lower prevalence of these issues. This distribution highlights a range of issues, with adverse weather and business recession standing out as major concerns for the surveyed community.

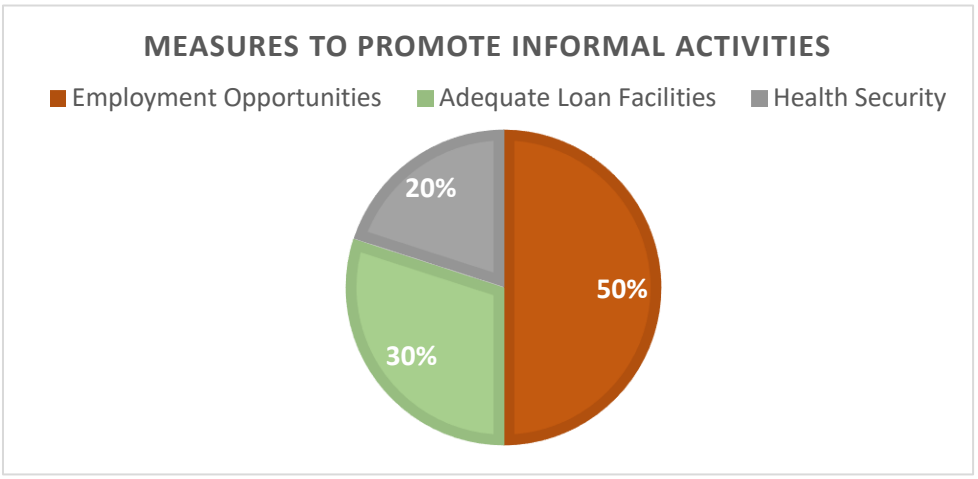


(Source: Field Survey, 2024)

Figure 2-70: Risks Observed in Informal Activities

The casual and temporal nature of work is noted as a risk by 51% (Figure 11-29), emphasizing the instability inherent in many informal occupations. A significant portion, 46%, identifies the lack of a social security system as a substantial risk highlighting the absence of a safety net for individuals engaged in informal activities. Only 3% point out the lack of a written employment contract as a concern, suggesting that this is a relatively minor issue compared to the broader challenges associated with the informal sector. This distribution underscores the vulnerabilities associated with informal activities, particularly in terms of social security and job stability.

2.6.5.14 Measures to Promote Informal Activities



(Source: Field Survey, 2024)

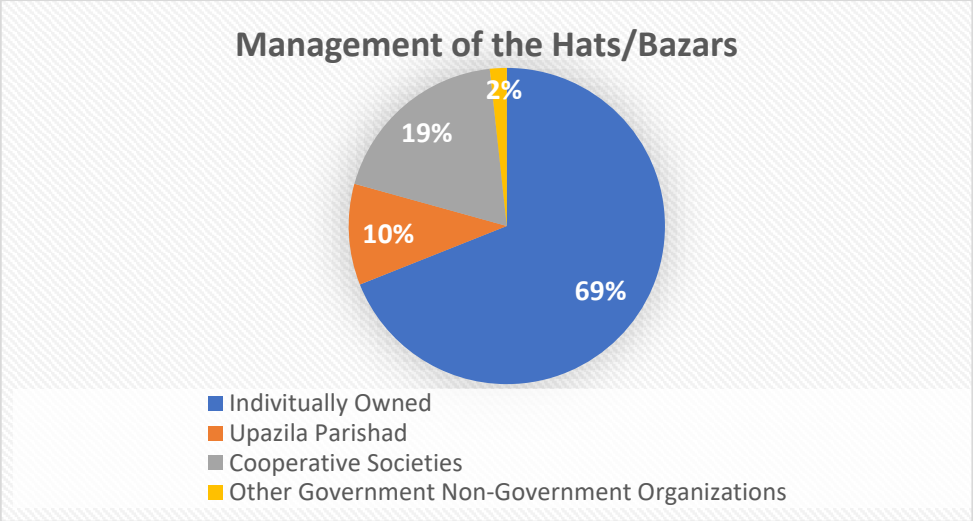
Figure 2-71: Measures to Promote Informal Activities

Figure 11-30 denotes a significant 50% of respondents emphasize the importance of creating employment opportunities, underscoring the desire for initiatives that can contribute to job creation. Adequate loan facilities are identified by 30%, reflecting the perceived need for improved access to financial resources. Health security is noted by 20%, indicating a recognition of the importance of healthcare support in socio-economic development. This distribution underscores the multifaceted nature of socio-economic needs, ranging from employment opportunities to financial and health-related considerations.

2.6.6 Hat/ Bazar

All fourteen unions were surveyed to identify and study the bazars of the Upazila. The Consultant has identified several hats and bazar from all the unions.

2.6.6.1 Management of the Hats/Bazars

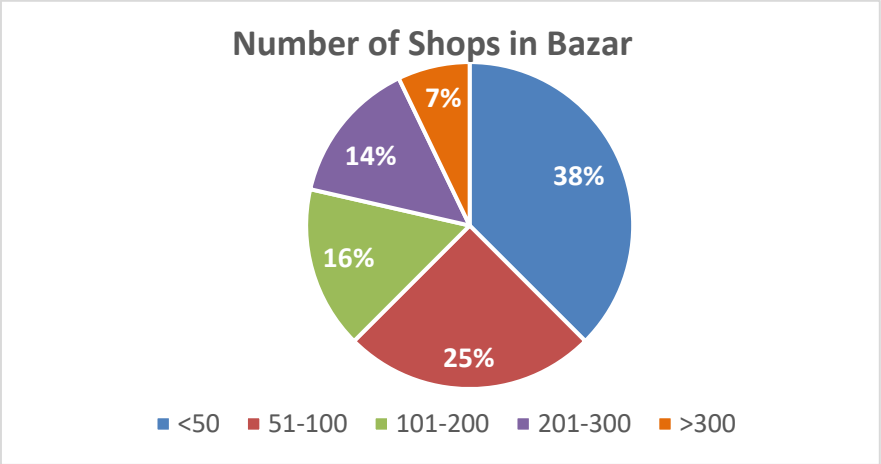


(Source: Field Survey, 2024)

Figure 2-72: Management of the Hats/Bazars

Figure 11-31 shows the management of the Upazila's Hats, Bazars. 69% of the hat/bazars are individually owned which is the highest percentage. Most of the bazars are owner based. 19% of the respondents agree that their shops in Bazar are run on a partnership based. They run the shops under cooperative management of the owners. A small proportion of the shops are owned by Upazila Parishad (10%).

2.6.6.2 Number of Shops



(Source: Field Survey, 2024)

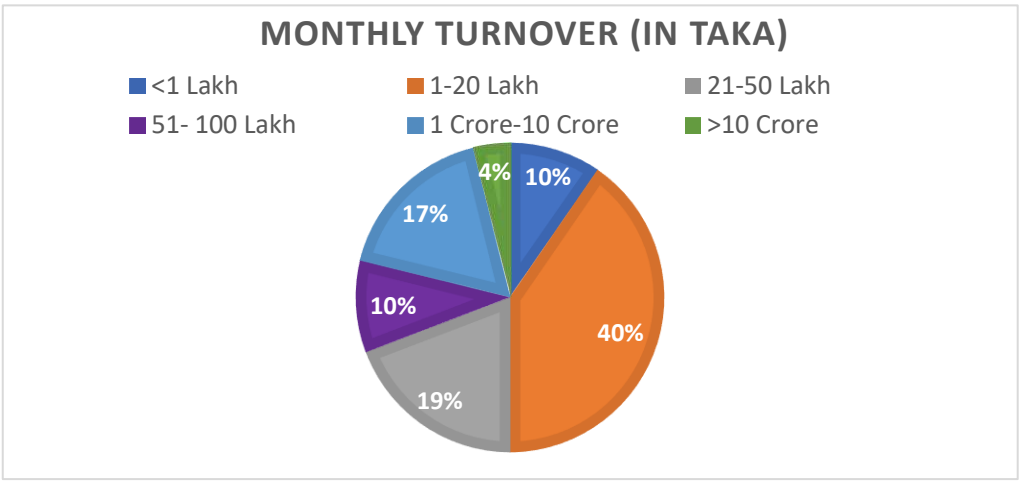
Figure 2-73: Number of Shops

Shops number in the bazars vary depending on the bazar or hat size and location. 38% of the bazar has less than 50 shops. 51 to 100 shops are 25% of the total surveyed bazars. Some bazars also have more than 300 shops.

2.6.6.3 Types of Business Occurring in the Bazars

There are many categories of shops in every bazar in the Upazila. Different types of businesses take place in these bazars like grocery store, food store, house construction, blacksmith and barber place, meat shop, cattle market, clothe store, stationary store, vegetable market, fish market, cement, rod market, furniture shop, mobile phone and motor cycle sale and repair, watches and electronic goods, mechanical shop, shoe shop, hardware content store, pipe, sanitary ware shop etc.

2.6.6.4 Monthly Turnover

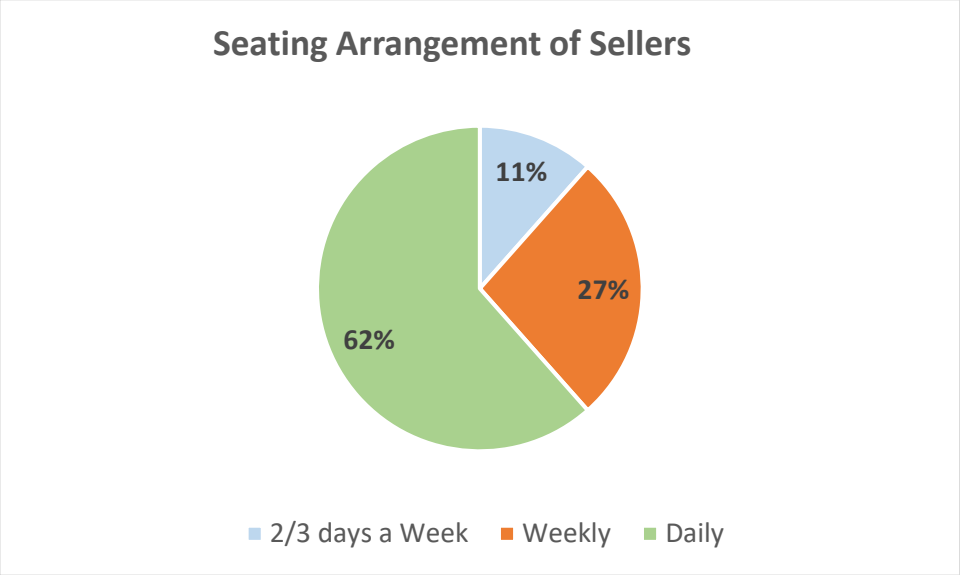


(Source: Field Survey, 2024)

Figure 2-74: Monthly Turnover in Hat/ Bazar

Monthly trading turnover varies according to bazar size and existing business occurred in these bazars. 40% of the respondents said their monthly turnover is within 1 to 20 Lakh Taka per month. Monthly 21-50 Lakh Taka trading in the bazar is also significant (19%). Monthly 1 to 10 Crore Taka trading is also very common in some of the bazars (17%). Very few of the bazars also sell a huge number of products reflecting more than 10 Crore Taka trading per month.

2.6.6.5 Seating Arrangement of Sellers

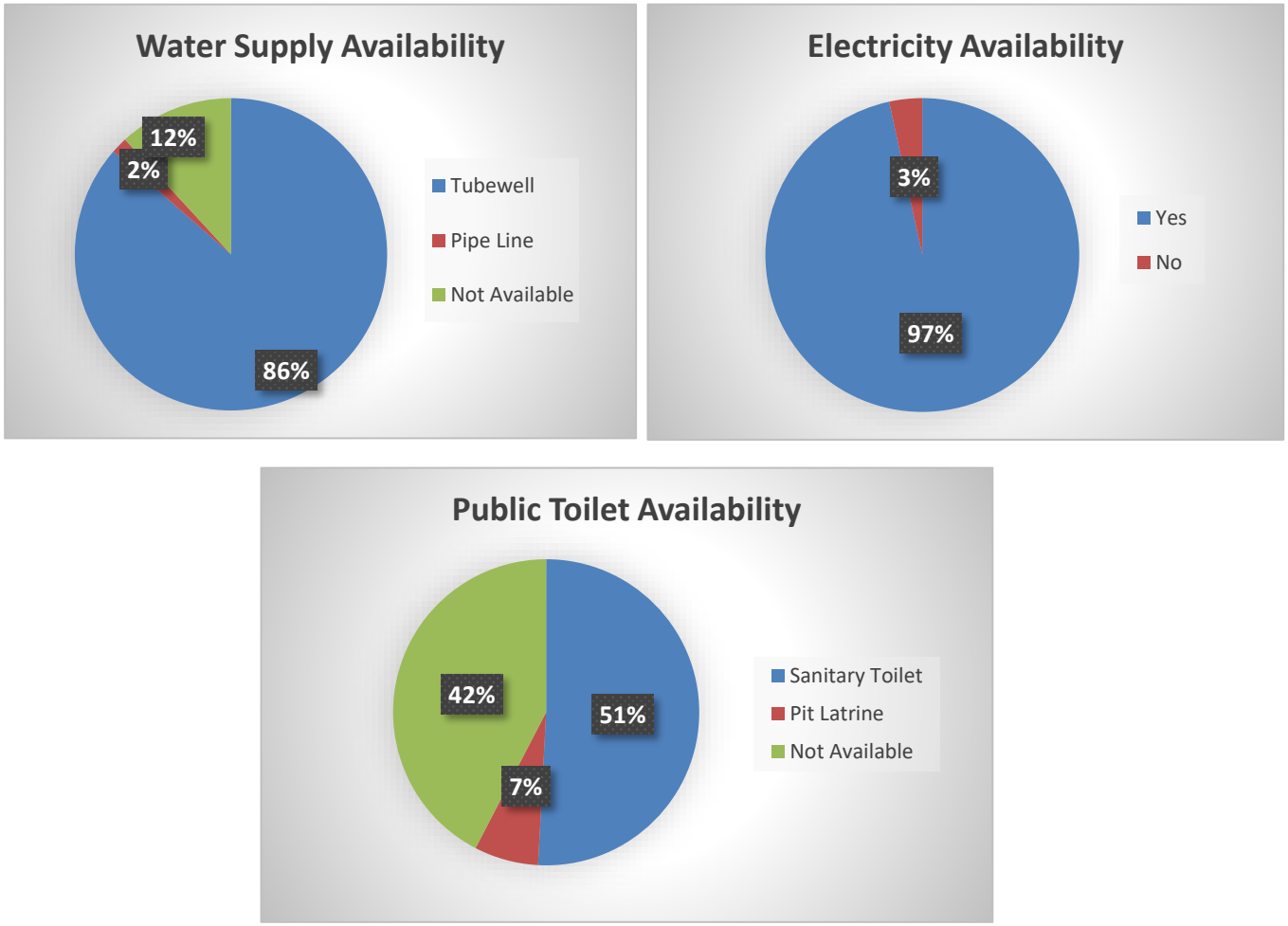


(Source: Field Survey, 2024)

Figure 2-75: Seating Arrangement of Sellers

The majority of participants prefer a daily seating arrangement in Hat/Bazar, constituting 62% of the surveyed population. This suggests a significant demand for daily essentials to the Hat/Bazar among the community. Following daily preference, weekly seating ranks second with 27% of respondents opting for this arrangement. This indicates a notable portion of entrepreneurs who prefer a less frequent but regular presence in the market. Conversely, the least favored option is a 2/3 days a week arrangement, garnering only 11% of respondents' preference. Overall, the data underscores the importance of providing daily seating options at the Hat/Bazar to accommodate the preferences of the majority while also acknowledging the significance of maintaining weekly arrangements to cater to those with less frequent needs.

2.6.6.6 Utility Services (Water, Electricity, Public Toilet)

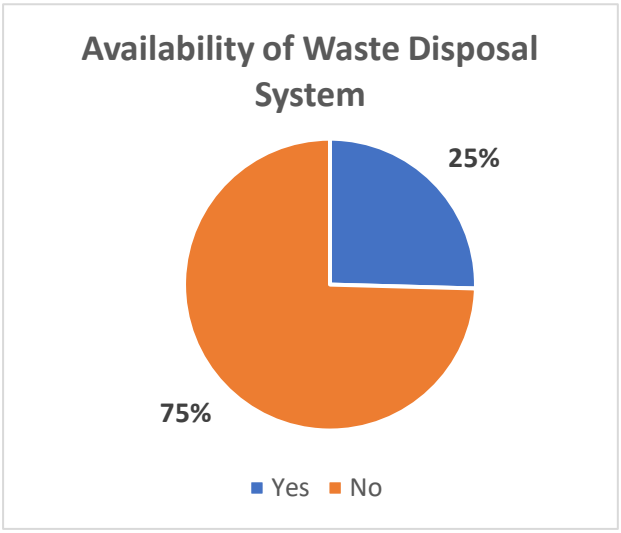


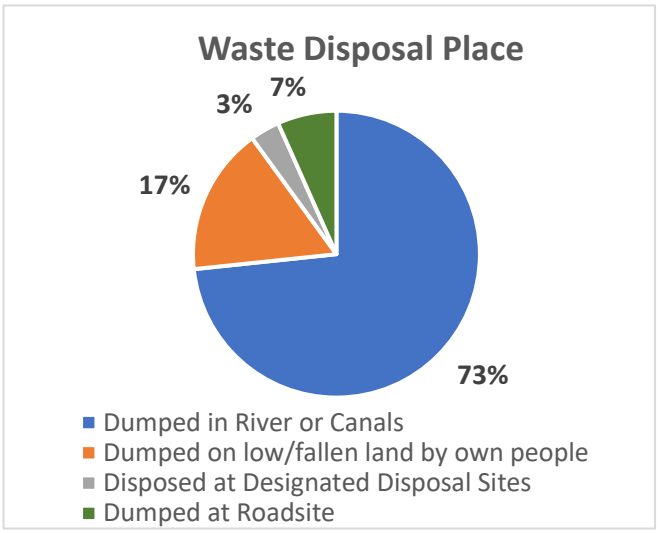
(Source: Field Survey, 2024)

Figure 2-76: Utility Services in Bazar

In most bazars, water supply demand is met by installation of tubewell (86%). Some percentage of the respondents also said the fact about the unavailability of the water supply system in their shops (12%). Very few shopkeepers meet their water demand by piped supply. Electricity is available in almost every hat and bazar as 97% of the respondents of the bazar agree on this fact. Mostly sanitary toilet is available in the bazar as 51% of the respondents said about the sanitary toilet availability. A huge proportion of the surveyed people (42%) in bazar complained about the unavailability of any public toilet. This creates problems in the bazar as the use of hygienic toilets is very important for health.

2.6.6.7 Waste Disposal





(Source: Field Survey, 2024)

Figure 2-77: Waste Disposal System in Bazar

The availability of waste disposal systems is very poor in Nawabganj Upazila bazars. 75% of the respondents agree on the unavailability of the waste disposal system in the bazar. They dump waste haphazardly without any designated place.

73% of the people on the bazar said they dump their shop waste in river or canals which creates huge water pollution. 17% of the surveyed people dump waste on low land making soil pollution and bad environmental impact. Only 3% of the respondents disposed of waste at designated waste disposal sites. Most (88%) of the shop owners in bazar manage waste by individual initiatives. 7% of the surveyed people manage waste by leaseholder and 5% of the people manage waste by shop keepers' association.

2.6.6.8 Major Problems in Hats/Bazars

The existing bazars in the Upazila face some problems. Almost all the shopkeepers face these problems.

Lack of Designated Site for Waste Disposal: This is the first problem for everyone. Shopkeepers including the general people dump waste haphazardly as there is no designated place for waste disposal. Water pollution, and soil pollution are increasing because of these activities.

Absence of Community Organization: Surveyed respondents feel the urge for community organization for the bazar. The presence of community organizations can help mitigate the problems of the hat, bazar and market place.

Lack of Hygienic Public Toilet: It is another issue raised by the surveyed population. The bazars need a hygienic toilet.

Bad Road Condition: Roads of the bazar are not in good condition. Kuccha muddy road create multiple problems for both sellers and customers. Accessibility roads of bazar are in very poor condition and people face difficulties while travelling to bazar.

Shortage of Water Supply: Some respondents raised the issue of shortage of water supply in the bazar.

Overall, in Nawabganj Upazila, both formal and informal economic activities prevail. This Upazila is mainly agriculture based but people engaged in business and service sector is also observed.

2.6.7 Economic Survey Comparison Between UDD Survey and Consultant Survey in Nawabganj Upazila

Formal Economic Activities		
Issues	**UDD Survey**	**Consultant Survey**
Surveyed Formal Sector	Shops in General and shops in Hat/Bazar/Growth Centre, Industry (Small/Medium/Large) Bank/Insurance, NGO, CBO	Shops in General and shops in Hat/Bazar/Growth Centre, Registered shops, construction materials, furniture shops, wood production shops, pharmaceutical, sawmills, oil mills, dairy processing, printing press etc.
Hat and Bazar Management	40% of the hats and bazars are managed by co-operative associations which is the highest percentage	69% of the hats/bazars are individually owned which is the highest percentage
Monthly Transaction	Average monthly transaction of hat/bazar is 26 Lakh Taka	40% of the respondents said their monthly turnover is within 1 to 20 Lakh Taka
Waste Disposal	50% of respondents dump their wastes in a dumping site	75% of the respondents agree on the unavailability of the waste disposal system in the bazar and mostly dumped in rivers and canals
Responsibility of Waste Management	80% of surveyed hats/bazars are done by workers engaged by the shop owners	Most (88%) of the shop owners in bazar manage waste through individual initiatives
Availability of Sanitary Toilet	90% of the respondents have sanitary latrines in Bazars/shops	51% of the respondents said about the sanitary toilet availability in Bazars/shops
Source and availability of Water Supply	All the shopkeepers of hats and bazars use groundwater as the source of water supply using Tubewell	91% of the enterprises use groundwater using Tubewell
Availability of Electricity	All the surveyed hats and bazars enjoy electricity connection	Electricity is available in almost every hat and bazar as 97% of the respondents of the bazar agree on this fact.
Major Problems of Hat/Bazar	Poor drainage has been a major problem	The lack of designated waste disposal sites considered as a major problem
Source of Capital	60% of industrial owners used family savings	The predominant source of capital is family origin, constituting nearly half at 49%

Health Examination Facilities	90% of the respondents do not get health facilities	97% of workers do not undergo a health examination
Training Opportunity	70% of the employees do not get training opportunity	93% of the respondents do not get training opportunity

Informal Economic Activities		
Issues	**UDD Survey**	**Consultant Survey**
Surveyed Informal Sector	Fruit seller, hawker, vegetable seller, plastic goods seller, worker, tea seller, bus driver, rickshaw puller, auto and van driver were surveyed	Hawker, small agriculture producer, food vendor, informal laborer, family business, housekeeper, freelancer, casual construction worker and handicraft seller were surveyed
Class of Consumer	About 60% of purchasers have been found to belong to the low-income group	About 55% of purchasers have been found to belong to the middle class
Location of Informal Trading	About 60% have permanent establishments	35% of the respondents work from the entrepreneur's home, 23% work from a market stall
Period of Doing Business	90% of the informal workers do business the whole year around	95% of the informal workers do business the whole year around
Monthly Income	The average monthly income is 5000-10000 Taka	The majority falls into the greater than 10,000 Taka income category, making up 49%
Condition of Loan	About 100% of the investors had to take credit for doing business	Only 32% of the respondents have taken a loan
Major Problems	Poverty, self-employed, adverse weather are the major problems	Adverse weather and business recession are identified as major problems

3 CHAPTER THREE: TRAFFIC AND TRANSPORTATION

3.1 Introduction

Nawabganj Upazila is one of the peripheral upazilas of Dhaka district. Being surrounded by upazilas like Singair, Dohar, Keraniganj, Serajdikhan, Sreenagar, Harirampur, Manikganj Sadar, Nawabganj is increasingly becoming an important upazila for regional connectivity.

For the review and update of Nawabganj master plan, efficient and effective transportation is given priority for the people living in urban areas as well as rural area. Traffic and transport survey was conducted for the assessment of existing transportation conditions, available transport modes and related facilities, user perspective etc. This also acts as the input to the development of transport plan of the upazila.

Objectives

The objective of the traffic survey is to

a) Collect traffic data to analyze the characteristics and identify major transport problems and needs in Nawabganj upazila.

b) To grasp the differences between traffic and transportation condition from the previous development plan of Nawabganj upazila

c) To provide a detailed transport study for future references.

Survey Description

The following 6 categories surveys were conducted by UDD in January 2016 during preparation of the Nawabganj Upazila Development Plan.

1. Traffic Volume Count- Motorized, Non-motorized vehicles (for intersection and road
2. segments)
3. O-D survey (Roadside Interview Survey)
4. Bus Passenger Interview Survey
5. Pedestrian Survey
6. Regional Transport survey

For the updated and review of master plan of Nawabganj, under the current project the consultant has been assigned to conduct 9 types of surveys according to the Terms of reference. The conducted surveys are shown in the following:

1. Traffic Count Survey (TCS)
2. Pedestrian Count Survey (PCS)
3. Parking Survey (PaS)
4. Roadside Interview Survey/O-D Survey (RSI)
5. Public Transport Passenger Survey (PTPS)

6. Pedestrian Interview Survey (PIS)
7. Travel Time Survey/ Speed Delay Survey
8. Household Interview Survey (HIS)
9. Terminal Survey

Error! Reference source not found.-1 presents the comparison of traffic and transportation survey items between the survey in the previous development plan by UDD and in the current master plan project.

Table 3-1: Survey comparison between previous and current master plan

Survey Items	Survey in the previous plan	Survey in the current plan
Traffic Count Survey	8 locations	8 locations
Pedestrian Count Survey	x	2 locations
Parking Survey	x	3 locations
Roadside Interview Survey/O-D Survey	4 locations	6 locations
Public Transport Passenger Survey	2 locations	5 locations
Pedestrian Interview Survey	2 locations	4 locations
Travel Time Survey/ Speed Delay Survey	x	3 routes
Household Interview Survey	x	14 unions
Terminal Survey	x	2 locations
Regional transportation study	4 locations	Considered in O-D survey, household travel survey and public transportation interview survey

Survey Location

The survey locations are selected by careful consideration of the upazila road network and local road traffic. A team surveyed the upazila to understand the existing traffic and transportation conditions while observing the overall scenario. The expert visited the upazila and interacted with some local people to understand their opinions and views about present road and traffic conditions. Additionally, a discussion with upazila engineer helped understanding the critical issues to keep under consideration while selecting the survey locations. Based on the gathered information and understandings, survey locations and survey stations/points were set. The locations were set considering existing traffic conditions as well as any plan for future infrastructure development activities. The survey locations were shared with PMO office and updated accordingly with the received suggestions. Survey locations, stations/points directions and corresponding surveys are shown in Table 3-2. All road and transport related studies and surveys were conducted at these locations.

Table 3-2: Survey Locations

Name	Location	Description	TCS	RSI	PCS	PTPS	PIS	PaS
Point 1	Puraton Bandura	Puratan Bandura Bridge (u/d)	Yes	No	No	No	No	Yes
Point 2		Puratan Bandura-Hashnabad (u/d)	Yes	Yes	No	No	Yes	Yes
Point 3	Joykrishnapur	Ghoshail (u/d)	Yes	No	Yes	No	No	No
Point 4	Majhirkanda	Majhirkanda-Majhirkanda Primary School Road (u/d)	Yes	Yes	No	Yes	No	No
Point 5		Majhirkanda- Dhapari bazar road (u/d)	Yes	Yes	No	No	No	No
Point 6	Nawabganj Mor	Muktijoddha Chattar-Majhirkanda (u/d)	Yes	No	Yes	No	No	Yes
Point 7		Muktijoddha Chattar-Nawabganj Thana (u/d)	Yes	Yes	Yes	No	No	Yes
Point 8		Muktijoddha Chattar-Sholla (u/d)	Yes	Yes	Yes	No	No	Yes
Point 9		Muktijoddha Chattar-Upazila Parsihod road (u/d)	Yes	No	Yes	Yes	Yes	Yes
Point 10	Bagmara	Bagmara (u/d)	Yes	Yes	No	Yes	Yes	Yes
Point 11	Komorganj hat	Komorgonj Hat (u/d)	Yes	Yes	No	No	No	No
Point 12	Tikorpur	Tikorpur (u/d)	Yes	Yes	No	Yes	No	No
Point 13	Galimpur	Megula-Tikorpur road (u/d)	Yes	No	No	No	No	No
Point 14		Galimpur Rahmania school road (u/d)	Yes	No	No	No	Yes	No
Point 15		Galimpur- Churain road (u/d)	Yes	No	No	No	No	No
Point 16		Galimpur- Nikra Road (u/d)	Yes	No	No	No	No	No
Point 17	Bandura Bazar	Bandura bazar	No	No	No	Yes	No	Yes

Determination of Sample Size and Methods

The sample size refers to the number of observations or units chosen from a larger population for a study. It's a critical factor in ensuring the reliability of study results. The margin of error, which reflects the precision of the study's findings, can stay consistent even when dealing with different sample sizes.

In this context, the margin of error remains the same whether working with a smaller sample size and aiming for a 90% confidence interval or a larger sample size targeting a 95% confidence interval. The confidence interval represents the range within which we are reasonably certain our true population parameter lies.

If we consider a 95% confidence interval with a 5% margin of error, the calculated sample size comes out to be 384. As a practical adjustment and to ensure a more robust study, the sample size is tried to keep upper than this limit. In summary, Table 3-3 provides a breakdown, showcasing the required sample size specifically tailored for a 95% confidence interval with a 5% margin of error. This approach in determining the sample size contributes to the overall accuracy and validity of the survey's outcomes.

Table 3-3: Sample size selection

Required Sample Size (90%)	Required Sample Size (95%)	Margin of Error
1691	2401	2%
752	1067	3%
271	384	5%
68	96	10%

Source: Watts, 2022

Traffic and Transportation Survey Schedule

The survey spanned two months with careful attention paid to maintaining consistent survey conditions to mitigate any factors that could potentially impact data accuracy. Table 3-4 outlines the schedule for the traffic and transportation survey.

Table 3-4: Traffic and transportation survey schedule

Survey Items	Survey period
Traffic Count Survey	November 2023-January 2024
Pedestrian Count Survey	November 2023-January 2024
Roadside Interview Survey/O-D Survey	December 2023
Occupancy survey	December 2023
Public Transport Passenger Survey	November 2023- December 2023
Pedestrian Interview Survey	November 2023- December 2023
Parking Survey	December 2023
Terminal Survey	December 2023
Household Interview Survey	November 2023
Travel Time Survey/ Speed Delay Survey	January 2023

3.2 Road Transport Network in the Study Area

3.2.1 RHD Road Network

RHD is responsible for managing three types of roads: National Highways, Regional Highways, and Zila Roads (sometimes called feeder roads type A). National highways usually connect the capital to important ports or regional divisional headquarters. Regional roadways connect the districts to the divisional headquarters. The zila road connects the upazilas with zila headquarters. The upazila of Nawabganj is devoid of a national highway.

The R820 regional route enters Agla Union and continues into Nawabganj Upazila. It connects Gokulnagar, Tikorpur, Agla, Komorganj, Nawabganj, and Majhirkanda and runs via Bandura Union. In the Nawabganj Upazila, it passes through the unions of Agla, Galimpur, Bakshanagar, Kalakopa, and Bandura.

The intersection of zila roads Z8204 and Z8206 is located in Galimpur Bazar. Z8204 starts at the Agla Bridge and goes via Galimpur and Noadda on its way to Meghula in the Dohar Upazila. In contrast, Z8206 departs Churain and goes via Galimpur Bazar on its way to Dohar.

When moving traffic from Dhaka, the country's capital, to Dohar, the regional highway R820 is crucial. Z8204, which carries daily local traffic inside the upazila, connects Meghula in Dohar Upazila and Agla in Nawabpur Upazila. Local traffic in Nawabganj Upazila is transported from Churain Bazar to Dohar Upazila by Z8206.

3.2.2 LGED Road Network

In collaboration with Local Government Institutions, LGED is in charge of building, developing, and maintaining three classifications of roads: Upazila Road, Union Road, and Village Road. Typically, upazila roads link the unions. It may or may not be paved. Local traffic is transported to Upazila Roads via Union Roads. Village roads in the area facilitate access to union routes for the villagers. All three types of LGED roads are present in Nawabganj Upazila.

MNG77 travels through Munshinagar and Dubli Bazar to traverse Nawabganj Upazila.R326622004 avoids Galimpur Bazar by connecting Tikorpur, Noadda, and Sonahazra. Nawabganj and Paragram Hat are connected by a paved upazila road that passes through Melang Bazar and Sholla. Barrah and Kailail are connected to Nawabganj via a second paved upazila road. Nawabganj and Joykrishnapur are connected by another upazila road that passes through Sonabaju, Bandura, and Baruakhali.There are both paved and dirt roads there.

To facilitate the daily mobility of the locals, there are a lot of union highways and village roads, both paved and unpaved, linking the adjacent community and bazars .Because LGED highways transport local traffic from one union to another and to Nawabganj upazila Sadar, they play a significant role in daily life and significantly improve people's quality of life.

3.3 Inventory of Road and Waterway Network

3.3.1 Inventory of the Roads

In Nawabganj Upazila, there are four types of LGED roads: Upazila Road, Union Road, Village Road A and Village Road B. Village roads exceed upazila roads by a wide margin. Village road A covers the longest distance whereas upazila road covers the shortest.

Upazila Road covers the shortest distance among all classifications of LGED roads. While some roads are HBB and earthen, the majority of the roadways are made of pavement. The network has an appropriate number of bridges and culverts and is well-maintained. The upazila Road network is especially notable since it exhibits a thorough and well-thought-out transportation infrastructure, with seamless connections and no gaps. This network facilitates effective and seamless communication inside the upazila, supporting the general growth and accessibility of the area. Table 3-5 outlines the LGED road types and their specifications in a detailed manner.

Table 3-5: LGED Road details at Nawabganj Upazila

Road Types	Classification	Road Length(in km)	Percentage%	No. of Road
Upazila Road	Pavement	112.23	90.85	
	HBB	2.32	1.88	
	Earthen	8.98	7.27	
	Total	**123.53**	**100**	**18**
Union Road	Pavement	93.09	53.80	
	HBB	16.66	9.63	
	Earthen	63.27	36.57	
	Total	**173.02**	**100**	**30**
Village Road-A	Pavement	129.23	19.73	
	HBB	118.01	18.02	
	Earthen	407.64	62.25	
	Total	**654.88**	**100**	**328**
Village Road-B	Pavement	41.95	11.87	
	HBB	52.85	14.95	
	Earthen	258.72	73.18	
	Total	**353.52**	**100**	**223**
Grand Total	Pavement	376.5	28.85	
	HBB	189.84	14.55	
	Earthen	738.61	56.60	
	Total	**1304.95**	**100**	**599**

Source: Local Government Engineering Department (LGED), July 2023

A variety of pavement types can be seen on union roads. The majority of union roads are constructed of pavement or earth. Sufficient culverts and bridges effectively maintain the network. However, the existence of gaps in union roads suggests potential areas for expansion or

development to enhance the union's overall reach and connectivity. The Union Road network is essential for fostering connectivity and mobility, which significantly boosts the socioeconomic growth of the region it covers, even with the few gaps that still exist.

Village Road-A covers the maximum distance among the LGED road classification. It consists mostly of earthen roads, but HBB roads and pavement roads also share a huge portion of village road A combinedly. Indeed, this road network's diversity of pavement types offers a thorough foundation for meeting a range of transportation needs. Maximum number of bridges and culverts among the LGED road classifications fortifies the road infrastructure. On the other hand, Village Road-A has significant number of gaps, which indicate possible connectivity issues that should be addressed in order to maximize accessibility throughout the villages. Despite these inadequacies, the Village Road-A network is essential for enhancing rural transportation and makes a substantial contribution to the general growth and connection of the villages it serves. The effectiveness and accessibility of this vital road network might be further enhanced by efforts to close the gaps that currently exist.

Village Road-B also stretches a large distance. Village Road B is mostly composed of earthen roadways. The quantity of bridges and culverts it has is lower than other kinds. Conversely, the Village Road-B system contains the greatest number of gaps that are currently in place. These gaps raise the possibility that there are connectivity problems that could impair the efficiency of the villages' transportation infrastructure. By filling up these gaps, Village Road-B might support the socioeconomic growth of the communities it serves while also enhancing the overall use and accessibility of the road network. Despite the gaps that currently exist, the road network is still crucial for fostering rural connectivity and satisfying local communities' transportation needs.

3.3.2 Inventory of Waterway Network

Nawabganj upazila is surrounded by river Padma on the west, river Kaliganga on the north and river Dhaleshwari on the east. River Ichamoti runs through the middle of Nawabganj upazila from west to east.

The Kaliganga River enters Nawabganj upazila via Balukhanda and flows through Patiljhap, Khatia, and Melang before exiting the upazila at Paragram. It converges with the Dhaleshwari River at Hazratpur, located outside of Nawabganj upazila. Subsequently, the river re-enters Nawabganj upazila as the Dhaleshwari River through Malikanda. However, it soon departs Nawabganj upazila near Doulatpur after a brief course.

The Ichamoti River enters Nawabganj upazila at Sonabaju, passing through Baruakhali and Khanepur. Upon reaching Bandura, it is divided into two branches. The primary Ichamoti continues its course within Nawabganj, while the other branch exits Nawabganj upazila through Hashnabad. The main Ichamoti branch progresses through Nawabganj towards Komorganj and ultimately departs the upazila at Moricha. River Padma runs on the west side of the upazila. Nawabganj upazila also covers a small portion of Arial beel, third largest wetland in Bangladesh.

There is no waterway network in Nawabganj upazila. No launch ghat exists inside the upazila area. Some small boat stations named Kheya Ghats are located along the riverside that are used by local

people to cross the river. List of the found boat ghats are provided in Table 3-6 and their distribution are shown in **Error! Reference source not found.**.

Table 3-6: List of boat ghats

Sl no.	List of Boat ghats	Union Name
1	Golla bou bazar kheyaghat	Noyonsree
2	Golla girja kheyaghat	Noyonsree
3	Balukhondo kheyaghat	Sholla
4	Patiljhap kheyaghat	Sholla
5	Singjor kheyaghat	Sholla
6	Telibari kheyaghat	Kalakopa
7	Poddar bajar kheyaghat	Kalakopa
8	Nandi bajar kheyaghat	Kalakopa
9	Komorganj Kheyaghat	Komorganj
10	Moth er ghat	Bandura
11	Deotola ghat	Noyonsree

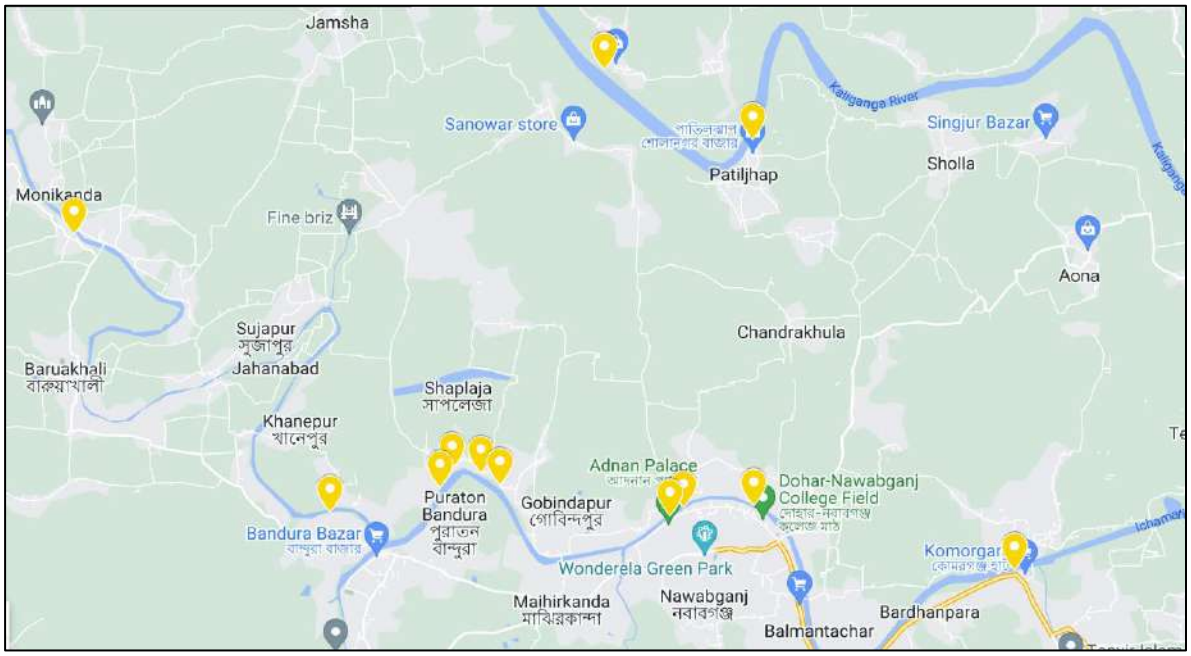


Figure 3-1: Boat ghats in Nawabganj Upazila

There are some ghats that are operating, and some are closed. The operating ghats can be categorized as manual operators and mechanical operators. Currently Borogolla, Deotola ghat, Moth er ghat, Patiljhap ghat, Balukhondo ghat, Poddar bazar, Telibari kheyaghat, Nondi bazar kheyaghat/college ghat and Komorgonj ghat are active and operational witnessing regular flows of activity along the riverbank. In contrast, all other ghats remain inactive. Patiljhap ghat and Balukhondo ghat are equipped with mechanical operators, others rely on manual methods. Table

3-7, Table 3-8 and Table 3-9 presents the collected information of the inactive boat ghats, manually operating ghats and mechanically operating ghats respectively.

Table 3-7:Inactive boat ghat information

Currently closed ghats			
Ghat name	**Choto golla**	**Golla bou bazar**	**Monikanda kheyaghat**
Location	Beside chotogolla field,Noyonsri	Beside golla bazar,Noyonsri	Shikaripara
Destination 1	Choto golla		Monikanda
Destination 2	Mohobbotpur		Gomege house

Table 3-8: Manually operating ghats

Running ghat (Manual operator)							
Ghat name	**Borogolla ghat**	**Deotola ghat**	**Mother ghat**	**Poddar bazar**	**Telibari kheyaghat**	**Nondibazar /college kheyaghat**	**Komorgonj ghat**
Operator	1 Manual	1 Manual	1 Manual	1 Manual	1 Manual	1 Manual	14 Manual
location	Boro golla (beside of church), Noyonsri	Deotola (Beside Primary school), Noyonsri	New bandura (beside new bandura durga temple), Noyonsree	Poddar bazar kolakopa	Adnan palace, kolakopa	Beside Dohar-nobabgonj field, kolakopa	Beside komorgonj bazar
Destination 1	Boro golla	Deotola ghat	New bandura	Poddar bazar	Adnan palace	Dohar-nobabgonj field	Komorgonj kheya ghat
Destination 2	Mohobbotpur	Bandura	Radhakantopur	Infront of Jantrail union	Jalalchor	Horishkul	Bahra kacha bazar
Schedule	6.30 am to 7.00 pm	5.00 am to 6.00 pm	6.00 am to 7.00 pm	6.00 am to 7.00 pm	6.00 am to 7.30 pm	6.00 am to 7.00 pm	4.00 am to 9.00 pm
Fare	10 taka	10 taka	5 taka	5 taka	5 taka	5 taka	5 taka
No of passenger (approximately)	1000	700-800	700-800	100-120	50-60	200-250	4000-5000
Service time	2-3 min	4-5 min	2-3 min	2-3 min	2-3 min	2-3 min	2-3 min
Trip generation	Mostly used by students and Christian Community	Mostly used by Deotola People(Roadway vehicles are not always available and also expensive)	Mostly used by Radhakantopur people		Construction of Horishpur bridge has reduced the pressure but bridge is not yet connected by road. The sailor runs the boat along with other jobs	Mostly used by students	Mostly used by bahra kacha bazar people

Table 3-9: Mechanically operating ghats

Running ghat (Mechanical Operator)		
Ghat name	Patiljhap ghat	Balukhondo ghat
Operator	1 Mechanical	1 Mechanical
location	Patiljhap bazar sholla	Balukhondo sholla
Destination 1	Patiljhap bazar	North balukhondo
Destination 2	Dondokhondo	South balukhondo
Schedule	4.00 am to 9.00 pm	5.30 am to 9.00 pm
Fare	10 taka	Regular 5 taka/irregular 10 taka(free for student)
No of passenger (approximately)	1100-1200	According to sailor 300-400 (general people said 900-1000)
Service time	5-6 min	5-6 min
Trip generation	Mostly used by dondokhondo and balukhondo people for shopping purpose, weekly two days hut and no other trip option except using boat	Mostly used by north balukhondo people and no other option except using boats * Boats get stuck when char accumulates in the river

3.4 Traffic And Transportation Survey

3.4.1 Traffic and Pedestrian Count

The main purposes of count surveys are to acquire the present regular volume on the major corridors, to understand the performance and efficiency with the present volume, to measure the current and future demand for transportation and other infrastructures and for the identification of the existing problems and bottlenecks. Two types of count surveys were conducted for the review and update Nawabganj Master Plan: Traffic Count Survey and Pedestrian Count Survey. The traffic count survey was conducted to get the traffic movement summary of selected locations/ points on working days and weekends. The Pedestrian Count Survey was conducted along with the Traffic Count Survey at selected points. It was conducted to obtain the pedestrian movement summary along the roads at five selected points.

3.4.1.1 Approach and Method of Data Collection

Survey locations/points: Sixteen points were selected for traffic count survey and five points were selected for pedestrian count survey. Hat/Bazar days were kept in consideration in possible circumstances. Survey points for traffic count survey and pedestrian count survey are shown in **Error! Reference source not found.** and **Error! Reference source not found.** respectively.

Survey duration: Surveys were conducted for a period of 15 hours and data were taken every 15 minutes. Surveys started at 6 AM and ended at 9 PM.

Days: Count surveys were conducted on two weekdays and one weekend. The weekdays were normal working days and Friday was considered for the survey on weekend.

Survey considerations: Government holidays, school holidays, political situations or any other exceptional circumstances that could have affected the regular traffic and pedestrian volume weren't scheduled for conducting the count surveys. Hat/ Bajar days were kept in consideration in possible circumstances as it is observed that hat/bajar attracts traffic.

Figure 3-2: Survey points for Traffic Count Survey

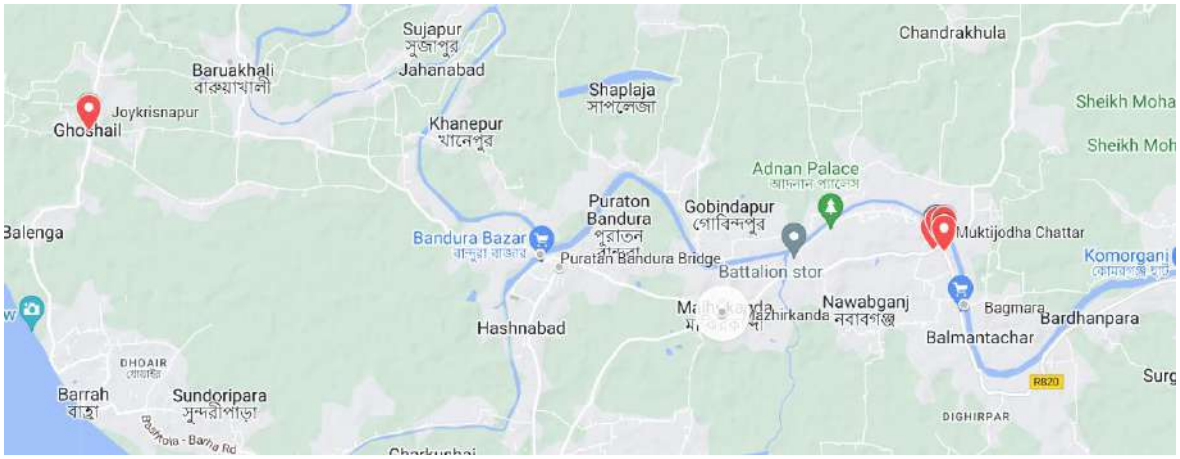


Figure 3-3: Survey points for Pedestrian Count Survey

Survey method

Count survey consisted of two different kinds of approaches: traffic count at selected road sections and count at a selected intersection.

Vehicle count at selected road sections: This survey was conducted using mixed method. Traffic counting was done in both ways. Manual traffic count, and traffic count using technology. Vehicles and pedestrians were counted manually for all the 16 selected midblock sections for both directions at the designated points for each survey. Surveyors were sent to collect data after proper training for the survey to be conducted manually. Data were collected and logged in different tally forms prepared specifically for traffic count survey and pedestrian count survey. Traffic data were collected according to the fixed mode classes.

For four points, survey was conducted at midblock sections using video cameras. The videos were processed with AI technology to collect data according to the vehicle classification.

Figure 3-4: Volume survey at different points (Manual counting)

Figure 3-5: Volume survey at Kolakopa (video survey)

Vehicle count at intersection: As for intersections, turning movement counts were carried out for 15 hours, from 6 am to 9 pm at Muktijoddha Chattar. The survey was conducted through video cameras and the video data were processed by using AI technology. The Intersection count survey includes classified turning volumes for different modes of transport.

Table 3-10: Vehicle Classification and Corresponding Passenger Car Unit (PCU) Value

Class	Description	PCU
1	Pedestrian	-
2	Bicycle	0.5
3	Motorcycle	0.4
4	Rickshaw/ Rickshaw van	1
5	CNG/Auto Rickshaw/Auto Van	1

Class	Description	PCU
6	Tempu/Leguna/Maxi	1
7	Car/ Taxicab	1
8	Utility (Pick up, Jeep, SUV)	1
9	Microbus	1
10	Medium bus (16~39 seats)	3
11	Large bus/ Double decker/ Articulated bus	3
12	Light truck/ 3 ton or less	1.3
13	Medium truck/2-axle Truck	3.6
14	Heavy truck/ Trailer/ Container/ 3 axle Truck	3.6
15	Others (ambulance, fire engine, towing car, construction vehicle, armored car, animal-driven car etc.	1.0

*Derived from multiple studies

PCU values are established according to the LGED PCU standard, with occasional adjustments to reflect current conditions. One such instance involves treating the PCU for CNG and auto rickshaws as identical. In the contemporary context, auto rickshaws occupy a comparable amount of space and accommodate a similar number of passengers as CNG vehicles. Consequently, the PCU for auto rickshaws is maintained at 1. This approach ensures that PCU values align with the present scenario, acknowledging the evolving dynamics of transportation and traffic patterns.

Locations, survey points and schedule for both traffic count and pedestrian survey is provided in Table 3-11. Tally forms, summary sheet and other particulars are provided in Annex 1.

Table 3-11: Details of Traffic Count Survey(TCS) and Pedestrian Count Survey (PCS)

Sl no.	Point no.	Location	Route details	TCS	PCS
				Survey Period	Survey Period
1	Point 1	Puraton Bandura	Puratan Bandura Bridge (u/d)	Nov-Dec 23	X
2	Point 2	Puraton Bandura	Puratan Bandura-Hashnabad (u/d)	Nov-Dec 23	X
3	Point 3	Joykrishnopur	Ghoshail (u/d)	Nov-Dec 23	Nov-Dec 23
4	Point 4	Majhirkanda	Majhirkanda-Majhirkanda Primary School Road (u/d)	Nov-Dec 23	X
5	Point 5	Majhirkanda	Majhirkanda-Dhapari bazar road (u/d)	Nov-Dec 23	X
6	Point 6	Nawabganj mor (chourongi)	Muktijoddha Chattar-Majhirkanda (u/d)	Nov-Dec 23	Nov-Dec 23

Sl no.	Point no.	Location	Route details	TCS	PCS
				Survey Period	Survey Period
7	Point 7	Nawabganj mor (chourongi)	Muktijoddha Chattar-Nawabganj Thana (u/d)	Nov-Dec 23	Nov-Dec 23
8	Point 8	Nawabganj mor (chourongi)	Muktijoddha Chattar- Sholla (u/d)	Nov-Dec 23	Nov-Dec 23
9	Point 9	Nawabganj mor (chourongi)	Muktijoddha Chattar-Upazila Parsihod road (u/d)	Nov-Dec 23	Nov-Dec 23
10	Point 10	Bagmara	Bagmara (u/d)	Nov-Dec 23	X
11	Point 11	Komorganj	Komorgonj Hat (u/d)	Nov-Dec 23	X
12	Point 12	Tikorpur	Tikorpur (u/d)	Nov-Dec 23	X
13	Point 13	Tikorpur	Megula-Tikorpur road (u/d)	Nov-Dec 23	X
14	Point 14	Galimpur	Galimpur Rahmania school road (u/d)	Nov-Dec 23	X
15	Point 15	Galimpur	Galimpur- Churain road (u/d)	Nov-Dec 23	X
16	Point 16	Galimpur	Galimpur- Nikra Road (u/d)	Nov-Dec 23	X

3.4.1.2 Major Findings from Vehicle and Pedestrian Count Survey

Vehicle count at selected road sections:

Peak count of vehicles

Traffic count surveys were conducted for three days at the selected points. Hourly peak count of vehicles among the three days at each point was found out through the survey. The peak vehicle count study at Nawabganj Upazila aimed to identify the highest volume of traffic over a specific time period. This is shown in **Error! Reference source not found.** and it shows that vehicle movement is relatively higher at point 9 and point 6. Both of these points are on the RHD road (R820) which is considered as the main thoroughfare of Nawabganj upazila. Some of the other points possess significantly low volume of vehicles than the points along the principal arterial road. These points represent the overall condition of the upazila. The findings showed that peak traffic hours were typically during the morning (9 AM to 12 AM) and evening (4 PM to 6 PM) rush hours.

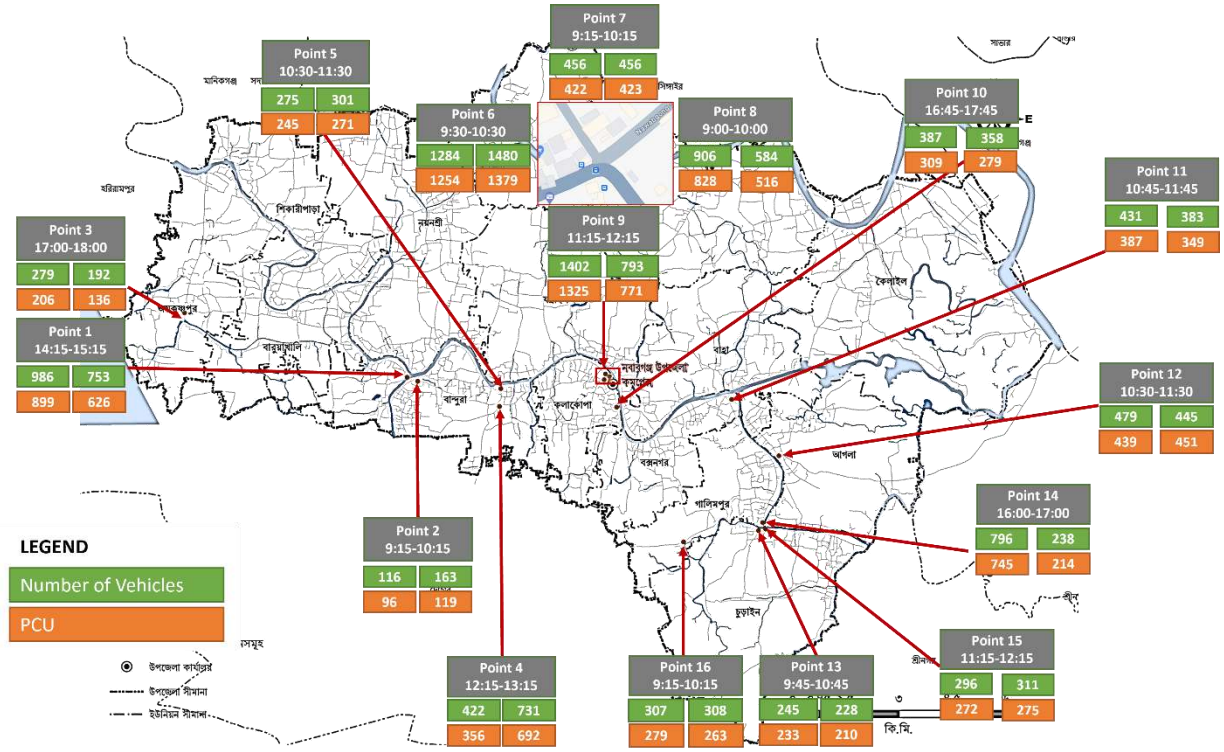


Figure 3-6: Peak count of vehicles from traffic and transportation survey at Nawabganj upazila

Vehicle Types and Distribution

It is evident from the data collected from (Figure 3-5) transportation survey that **CNG/Auto rickshaws** are the modes that dominate the traffic flow of Nawabganj upazila, accounting for 51%

of the total traffic. **Rickshaws** made up around 23% of the total count. **Heavy vehicles** (trucks, buses, etc.) comprised **15%**.

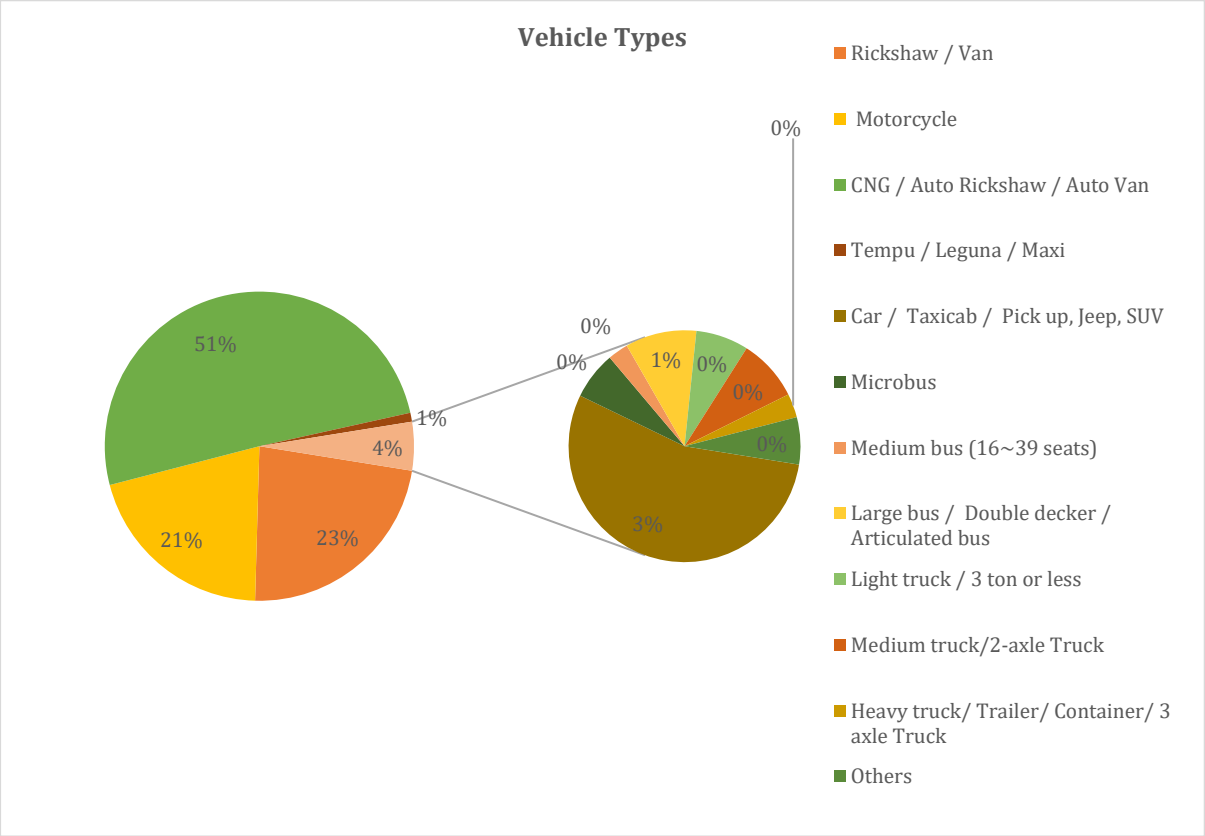


Figure 3-7: Vehicle types and their distribution

Vehicle counts at intersection

The busiest intersection of Nawabganj upazila is Nawabganj mor/chourongi/Muktijoddha chattar. "Turning movement counts" are collected at this intersection to analyze the volume of traffic making these movements at different times of the day. It was found out that the peak volume was logged between 10 AM and 11 AM in the morning and the next peak was between 5:00 PM and 6:00 PM.

Figure 3-6 shows the turning movement of vehicles at Nawabganj mor during the morning peak and Figure 3-7 shows the turning movement during the afternoon peak.

Figure 3-8: Turning Counts of Morning peak (10 AM-11 AM) at Nawabganj mor

Figure 3-9: Turning Counts of Afternoon peak (05:00 -06:00 PM) at Nawabganj mor

Pedestrian count at selected road sections:

Pedestrian count survey was conducted to understand pedestrian movement pattern at the selected road sections. The points are selected considering pedestrian traffic around the selected points. It was identified that pedestrian activity is higher between 10:30 AM to 01:45 PM near the points around the Nawabganj intersection (Figure 3-8).

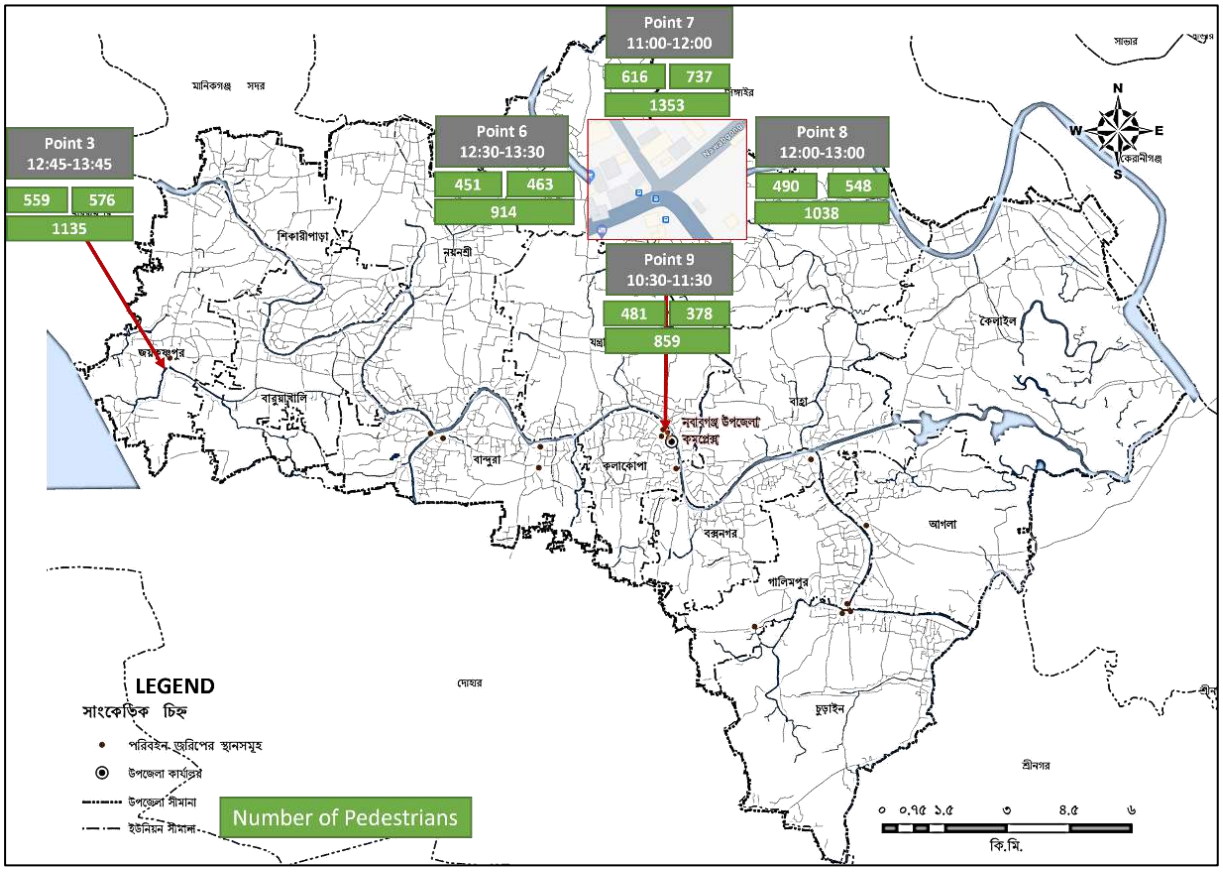


Figure 3-10: Pedestrian count at selected road sections

Pedestrian count at intersection:

The intersection is located at an area where most of the surrounding land uses are commercial and institutional. The intersection saw the highest pedestrian activity during morning (8:15 AM – 9:15 AM) and evening (13:15 PM – 14:15 PM) peak hours shown in Figure 3-9 and Figure 3-10 respectively.

Figure 3-11: Pedestrian crossing at Nawabganj mor (8:15 AM-9:15 AM)

Figure 3-12: Pedestrian crossing at Nawabganj mor (5:00 PM-6:00 PM)

3.4.2 Origin- Destination Survey

The Origin-Destination (OD) survey serves as a pivotal tool in understanding and analyzing the movement patterns of individuals within a specific geographical area. This survey aims to provide valuable insights into the origins and destinations of travel, understanding the intricate web of transportation networks and commuting behaviors that define the urban or regional landscape.

The complexity of transportations systems evolved along with the changes in the localities. It becomes a necessity to understand the changes in transportation systems and this calls for the need to conduct O-D survey. By conducting OD survey, it becomes possible to understand the efficiency of existing infrastructure and anticipate travel demands while driving deep in the travel patterns of the individuals in the locality. Understanding the starting points and ending points of the trips of a locality's residents facilitates the provision of making informed decisions about different dimensions of transportation systems like traffic management, transportation infrastructure development and ensuring efficiency in urban mobility.

This report presents the findings of our OD survey, highlighting key trends, challenges, and opportunities that emerge from the detailed analysis of origin and destination data. As we navigate the ever-changing landscape of transportation, this survey serves as a valuable tool for shaping future policies and interventions that enhance the overall efficiency, sustainability, and accessibility of our communities. The following sections of this report will delve into the methodology employed, the data collected, and the implications of our findings on the present and future dynamics of transportation within the surveyed area.

3.4.2.1 Approach/Methods of Data Collection

Method applied for this survey, workflow and approaches are detailed in the following.

Origin-Destination (O-D) Survey Method

There are different methods for conducting an origin-destination survey, such as roadside interview, license plate mail-out survey, telephone survey, internet survey, mail survey, and GPS receiver. Each method has its own advantages and disadvantages in terms of response rate, accuracy, coverage, and disruption of traffic. For Nawabganj Upazila Master Plan, roadside interview survey has been adopted as O-D survey for the advantages this method provides.

a. It provides more complete and accurate information than other methods, such as trip origin and destination, trip purpose, vehicle occupancy, and frequency of journey.

b. It has a higher response rate than mail or internet surveys, as drivers are more likely to cooperate when stopped by the police or traffic officers.

c. It does not disrupt traffic flow, as vehicles are directed into a designated interview area off the main road.

d. It can be used to collect data for different types of trips, such as external, external-internal, and internal trips.

Origins are the places where a trip starts from. Destinations are the places where a trip ends. The RSI will be done by stopping the vehicles at the selected survey points to interview the passengers of the vehicle. This survey will help in obtaining vehicle origin, destination, vehicle types, trip purpose, occupant number, passenger capacity etc. The selected survey points surrounding the major thoroughfare compose the cordon line which accommodates most traffic of surrounding areas.

Survey Location/Points

Eight points were selected for roadside interview survey. Survey points for roadside interview survey are shown in **Error! Reference source not found.**3-11.

Survey Duration

Surveys were conducted for a period of 15 hours. Surveys started at 6 AM and ended at 9 PM.

Days

Survey was conducted on a weekday. The weekday was a normal working day.

Questionnaire Preparation

To gather the responses needed to assess the travel patterns, a survey questionnaire was developed to facilitate the respondents. Upon completion of the survey, we were able to get the necessary information subjected to obtain from the roadside interview survey. The survey form for roadside interview survey is provided in Appendix.

Survey Considerations

Government holidays, school holidays, political situations or any other exceptional circumstances that could have affected the regular traffic and pedestrian volume weren't scheduled for conducting the count surveys.

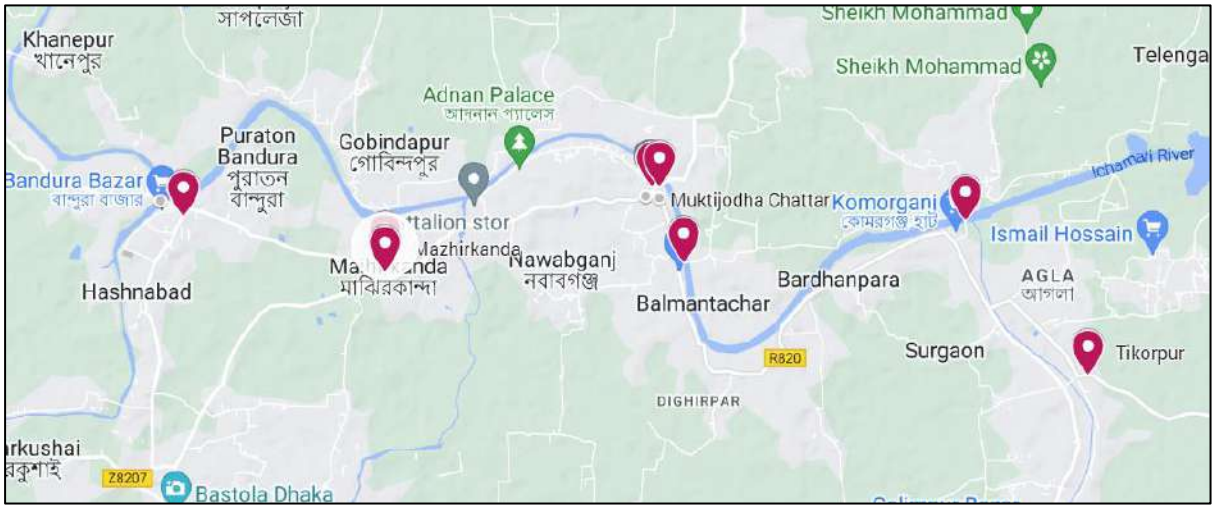


Figure 3-13: Survey points for Roadside Interview Survey

Roadside Vehicular Survey Method

The roadside interview of vehicle drivers was conducted by the surveyors. To carry out the survey in a systematic manner, a standard format was prepared for collecting surveyed data. The surveyors stopped vehicles in each survey points with the assistance of the local authority to obtain responses. It was instructed to get responses from all kinds of vehicles that passes through the point. The surveyors tried to get as many as responses possible in an hour without creating queue in the survey points. The drivers and passengers were asked questions about their 1) origin and destination of the trip, 2) seating capacity and occupancy of the vehicle, and 3) loading capacity/load factor/cargo type for trucks, etc. This helps to get a nearly accurate representation of the travel pattern of the residents of the upazila. Surveyors asked the drivers and passengers questions from the survey form which is provided in Annex 2. If the stopped vehicle is a,

- private vehicle and passenger is present: the passenger will be interviewed
- private vehicle and no passenger is present: the driver will be interviewed
- truck: the driver will be interviewed
- paratransit: one passenger will be interviewed
- bus: one/two passengers will be interviewed.

Figure 3-14: O-D survey, Roadside Interview survey

Table 3-12: Details of OD survey

Survey Period	Point	Description	Directions
Dec'23	Point 2	Puratan Bandura- Hashnabad	2
Dec'23	Point 4	Majhirkanda- Majhirkanda Primary School Road	2
Dec'23	Point 5	Majhirkanda- Dhapari bazar road	2
Dec'23	Point 7	Muktijoddha Chattar- Nawabganj Thana	2
Dec'23	Point 8	Muktijoddha Chattar- Sholla	2
Dec'23	Point 10	Bagmara	2
Dec'23	Point 11	Komorgonj Hat	2

Dec'23	Point 12	Tikorpur	2

3.4.2.2 Major Findings of Roadside Interview

The distribution of roadside interview survey data is presented in **Error! Reference source not found.**13 and **Error! Reference source not found.**14. Distribution is shown based on survey time range and vehicle types. **Error! Reference source not found.**13 shows that the trend of collecting data follows a downward trend from morning to afternoon and again takes a brief upward trend followed by downward trend from afternoon to evening.

Table 3-13 shows the distribution of surveyed mode across the survey locations. The table shows that CNG/Auto Rickshaw/Auto Van is the most surveyed mode in all survey points.

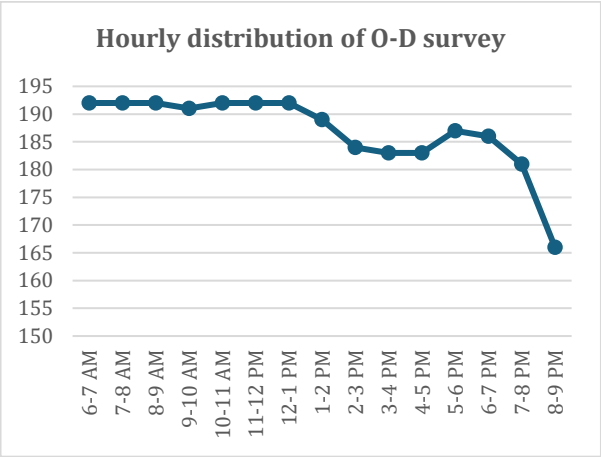


Figure 3-15: Hourly distribution of Roadside Interview survey

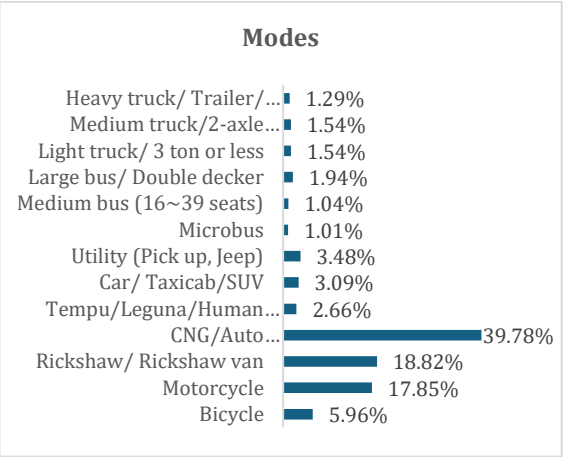


Figure 3-16: Distribution of surveyed modes

Table 3-13: Point wise distribution of surveyed modes (in percentage)

	Bicycle	Car/ Taxicab/SUV	CNG/Auto Rickshaw/Auto Van	Heavy truck/ Trailer/ Container/ 3 axle Truck	Large bus/ Double decker	Light truck/ 3 ton or less	Medium bus (16~39 seats)	Medium truck/2-axle Truck	Microbus	Motorcycle	Rickshaw/ Rickshaw van	Tempu/Leguna/Human Hauler	Utility (Pick up, Jeep)	Total

Bagmara	0.7	0.6	3.4	1.0	0.0	0.5	0.2	0.3	0.2	2.0	2.9	0.1	0.5	12.4
Dhapari bajar	0.8	0.4	4.7	0.0	0.0	0.1	0.0	0.0	0.1	2.5	3.2	0.8	0.3	12.9
College road	1.3	0.3	4.2	0.1	0.0	0.4	0.0	0.2	0.1	3.2	2.8	0.2	0.2	12.9
Hasnabad	1.3	0.3	3.7	0.0	0.0	0.1	0.0	0.0	0.0	3.5	3.3	0.0	0.8	12.9
Komorganj	0.9	0.1	3.3	0.0	0.0	0.0	0.0	0.3	0.3	2.3	2.4	0.8	0.7	11.2
Majhirkanda	0.3	0.1	7.4	0.0	0.8	0.2	0.2	0.1	0.1	1.6	0.9	0.6	0.3	12.7
Sholla	0.6	0.5	6.5	0.0	0.0	0.1	0.0	0.4	0.1	1.2	2.7	0.1	0.3	12.5
Tikorpur	0.1	0.7	6.6	0.2	1.2	0.2	0.6	0.3	0.1	1.5	0.6	0.0	0.4	12.5
Grand Total	6.0	3.1	39.8	1.3	1.9	1.5	1.0	1.5	1.0	17.8	18.8	2.7	3.5	100

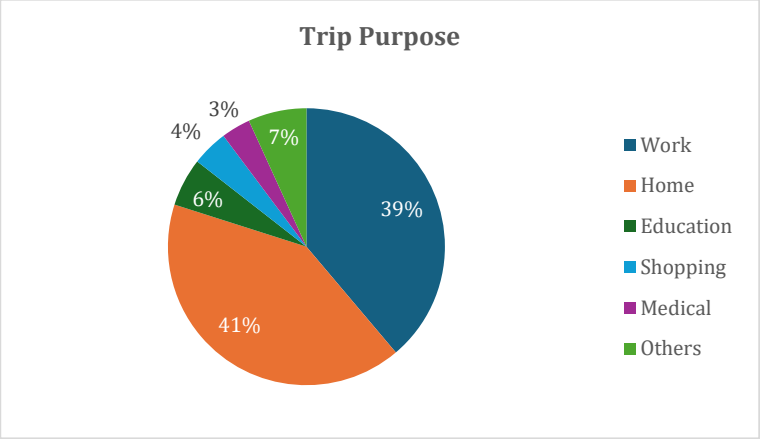


Figure 3-17: Trip purposes of the trip makers

Trip purpose is the reason why a person makes a trip from one location to another. It reflects the activity or goal that motivates the travel behavior and choice of the trip maker. Figure 3-15 presents the trip purposes of the respondents who were interviewed during the roadside interview survey. According to the figure, people mostly travel to and from their workplace. Their travel patterns are like; homework, work-home, work-work. Other significant purposes include education, medical and shopping.

Error! Reference source not found.3-16 and **Error! Reference source not found.**3-17 depict the distribution of trip types based on both origin and destination across different time intervals. The analysis reveals a clear prominence of two primary trip types—those originating from home and work—throughout all time ranges.

The analysis of trip distribution based on origin reveals distinct patterns throughout the day. In the morning, there is a significant increase in trips starting from home, suggesting that many people initiate their journeys from residential areas during early hours. As the day progresses, there is a decline in home-originating trips, indicating reduced travel from residential areas. In contrast, work-based trips show the opposite trend, with fewer trips in the morning and a gradual increase throughout the day, peaking later in the day. However, when examining distribution based on destination, a morning surge is observed for trips heading to work. As the day advances from morning to afternoon, number of trips generating for home increases while number of trips for work decreases.

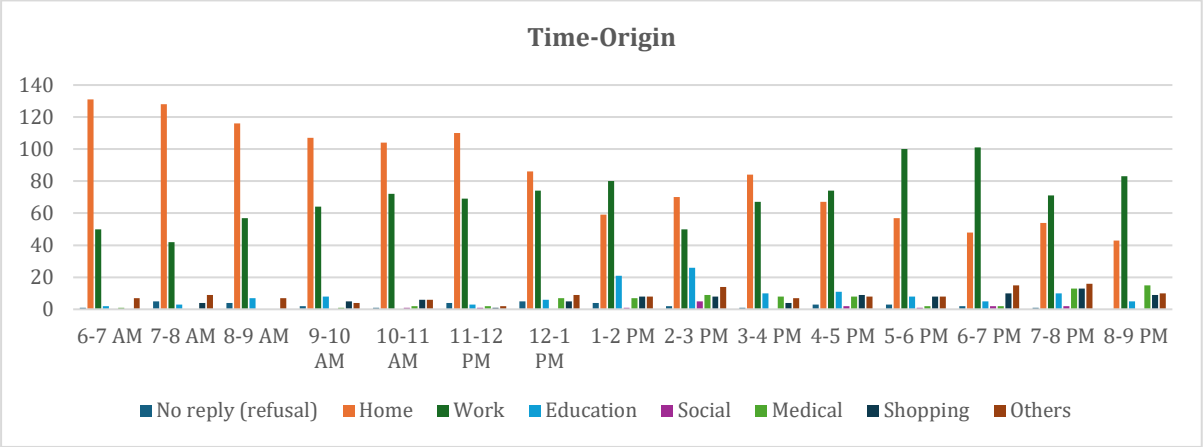


Figure 3-18: Origin trip type distribution based on time

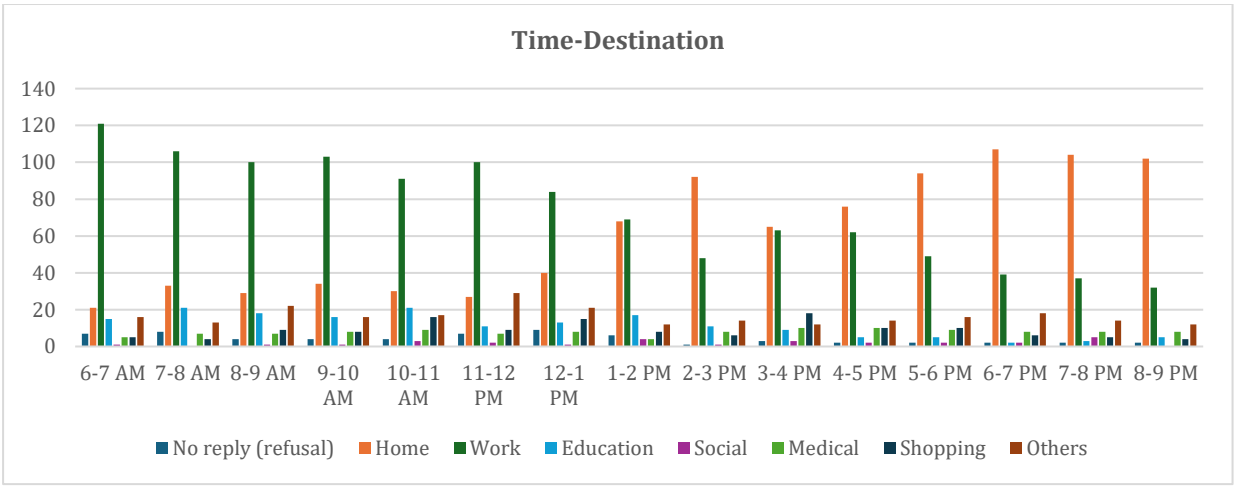


Figure 3-19: Distribution trip type distribution based on time

The map in Figure 3-18 displays the origins and destinations of trips recorded in the roadside interview survey conducted in Nawabganj. The details specifically highlight trips within Nawabganj Upazila, providing a more in-depth understanding of the trips 'to' and 'from' the different unions.

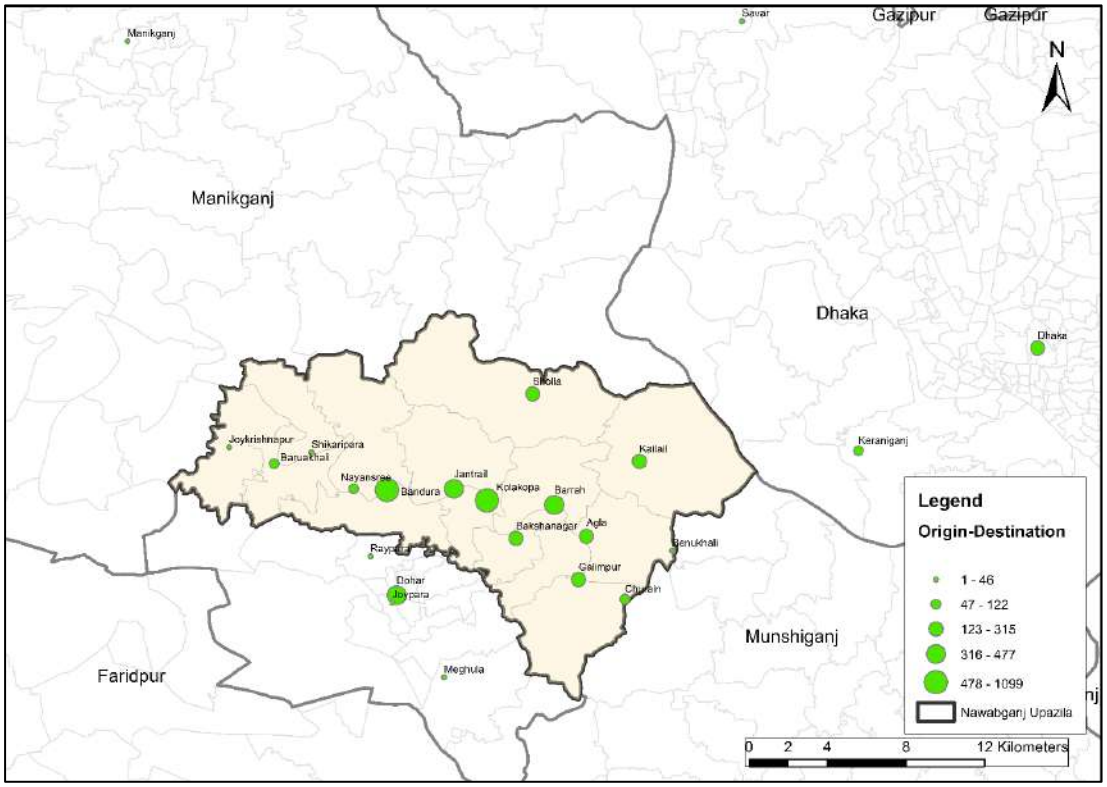


Figure 3-20: Distribution of origins and destinations from Roadside Interview survey

3.4.3 Occupancy Survey

A vehicle occupancy survey is a method of collecting data on the number of people in the specified vehicles at specific locations or roadways. This data can help analyze the efficiency of transportation systems, evaluate carpooling initiatives, and assess the impact of occupancy levels on traffic congestion and emission.

3.4.3.1 Approach / Methods of Data Collection

Among the methods of occupancy survey, some popular ones are roadside method, carousel method, video surveillance method. For Nawabganj Upazila Master Plan, roadside survey has been adopted and this survey has been done together with Roadside Interview survey (O-D survey) because of the similarity in the method of both surveys. Survey locations, duration, number of days for conducting surveys, survey considerations and method are same as Roadside Interview Survey.

3.4.3.2 Major Findings

From the occupancy survey, average occupancy for each vehicle has been calculated. **Error! Reference source not found.** represents the average occupancy for each kind of vehicle. According to Table 3-14, occupancy rate is relatively higher for light vehicles and buses share a high occupancy rate among the heavy vehicles.

Table 3-14: Average occupancy of existing modes in Nawabganj upazila

Modes	Average occupancy
Bicycle	1.30
Rickshaw/ Rickshaw van	2.85
Motorcycle	2.08
Car/ Taxicab/SUV	3.79
CNG/Auto Rickshaw/Auto Van	4.68
Tempu/Leguna/Human Hauler	2.52
Microbus	6.32
Utility (Pick up, Jeep)	2.80
Heavy truck/ Trailer/ Container/ 3 axle Truck	3.14
Large bus/ Double decker	38.71
Light truck/ 3 ton or less	2.77
Medium bus (16~39 seats)	22.52
Medium truck/2-axle Truck	3.35

3.4.4 Public Transport Passenger Survey

Introduction

Public Transport is a system for passengers that facilitates more people to travel in a single vehicle to commute to their destination. Generally, this type of transport runs on a designated route and schedules with moderate fares that are affordable for all kinds of people living in a locality/city/country. Public transportation play a vital role in maintaining connectivity between localities, cities, regions, urban and rural areas. They are an integral part of transportation systems to provide efficient and equitable solution for mobility. Public transport passenger surveys are generally done to understand people's perceptions on different aspects of public transport and their acceptance of the public transportation system. The relevant authorities will be able to use the outcome of the survey to develop comprehensive policies and strategies from the passengers' perception of public transportation. These will help in optimizing the functionality of the public transportation system and increase acceptance be meeting the evolving needs of the communities.

3.4.4.1 Approach / Methods of Data Collection

Transport User Survey

Survey Location/Points

Five points were selected for land public transport passenger survey. The points are located at Tirkorpur, Bagmara, Muktijoddha chattar mor, Majhirkanda and Ghosail. It was evident that there were some boat ghats in the upazila. To get some insight on boat transportation, two ghats were selected for getting responses from the people using boats as a mode to complete their trip. The selected points are shown in Figure 3-19.

Survey Duration

Surveys were conducted for a period of 15 hours. Surveys started at 6 AM and ended at 9 PM.

Days

Surveys were conducted on a weekday and a weekend. The weekday was a normal working day and Friday was the weekend for the survey.

Questionnaire Preparation

Questionnaire was developed to facilitate the respondents to obtain their responses. The questionnaire contained questions about their introductory and general information, their travel behavior, their perception about using public transportation. The prepared questionnaires were used both in paper form and digital form. The questionnaire is attached in Annex 3.

Survey Considerations

Government holidays, school holidays, political situations or any other exceptional circumstances that could have affected the regular traffic and pedestrian volume weren't scheduled for conducting the count surveys.

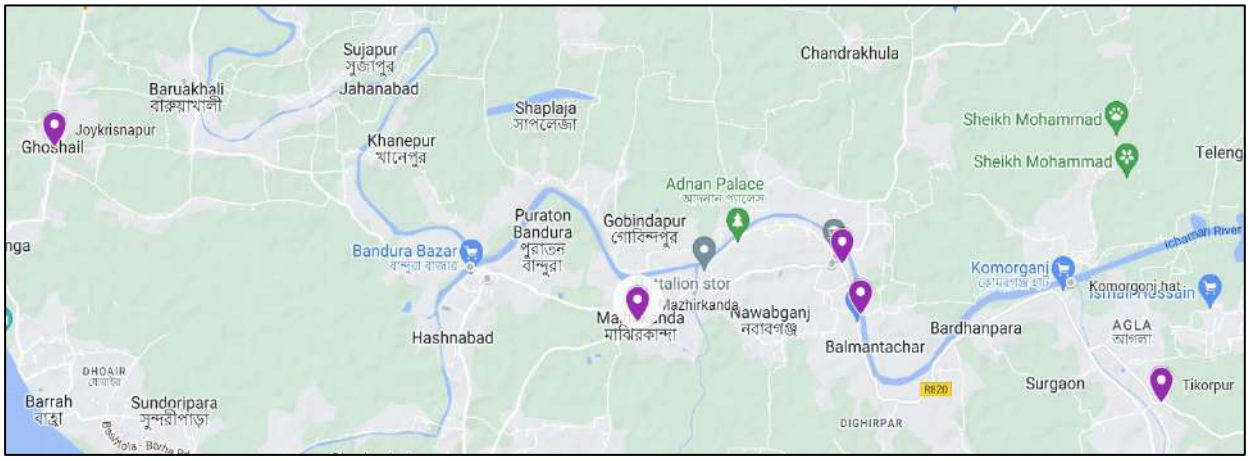


Figure 3-21: Survey locations of Public Transport Passenger Survey

Public Transport Passenger Survey Method

Surveyors were appointed to carry out the survey. They interviewed people from inside the buses, bus stops and other places where public transportation stops. Some samples were collected from the places where water transportation is available. Data were collected following hybrid method; paper-based data collection system and online data collection system using Kobo Toolbox.

Figure 3-22: Public transport passenger survey using paper-based system

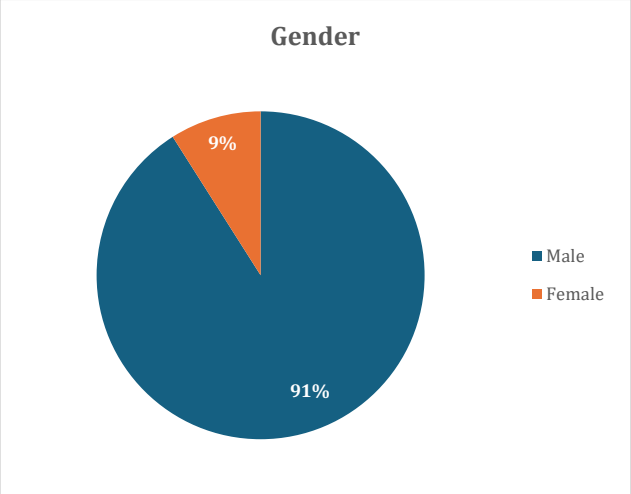
Figure 3-23: Public transport passenger survey using Kobo Toolbox

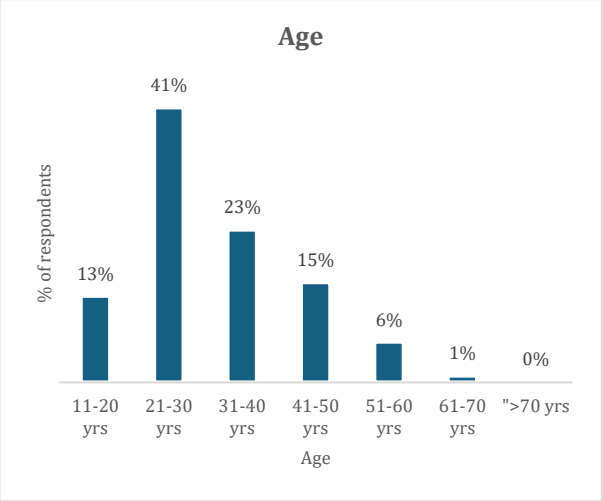
3.4.4.2 Major Findings

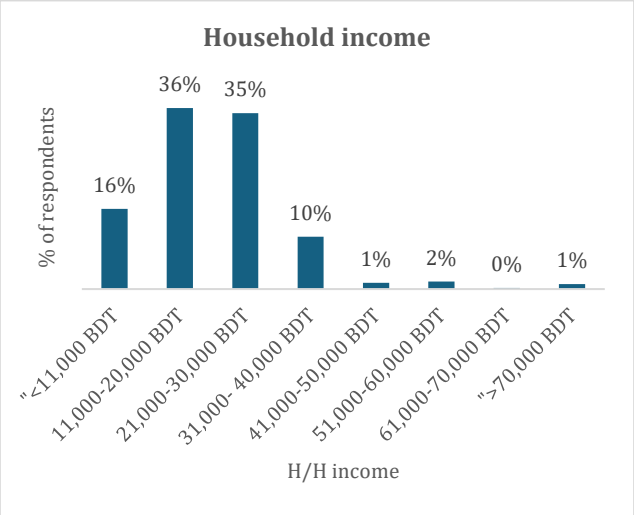
In Figure 3-22, the chart reveals that 91% of the respondents identify as male, giving an abstracted picture of the commuters. Among the respondents, 73% fall within the age range of 21 to 40 years. While most of the respondents are businessman (29%) and private job holders (26%), 71% responded that their household income falls within the range of 11,000 BDT to 30,000 BDT.

Error! Reference source not found.23 depicts the respondents' purpose of the trips are for which they are using public transportations. A majority of the respondents (34%) uses public transport to commute to their workplace. While a significant proportion (14%) uses public transportation for going to bazar or shopping purposes.

Error! Reference source not found.24 illustrates one of the travel behaviors of the respondents. It was found from the survey that a vast majority of the respondents(94%) changes mode while travelling, while a few(9%) do not have to change modes. 54% of respondents change mode twice to go to their destination and 23% of respondents change mode only once. Some of the respondents change modes three and four times as well.







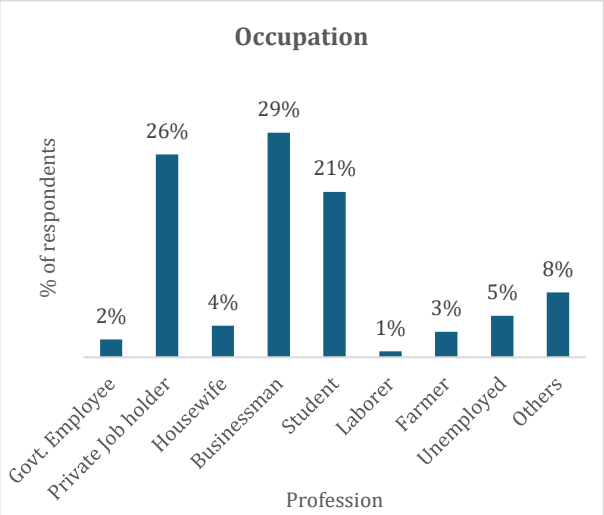


Figure 3-24: Socio-economic condition of public transport users

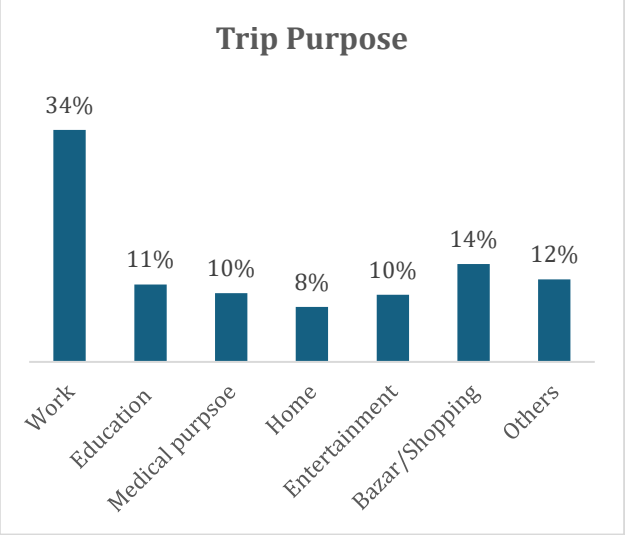


Figure 3-25: Trip purpose of the public transport users

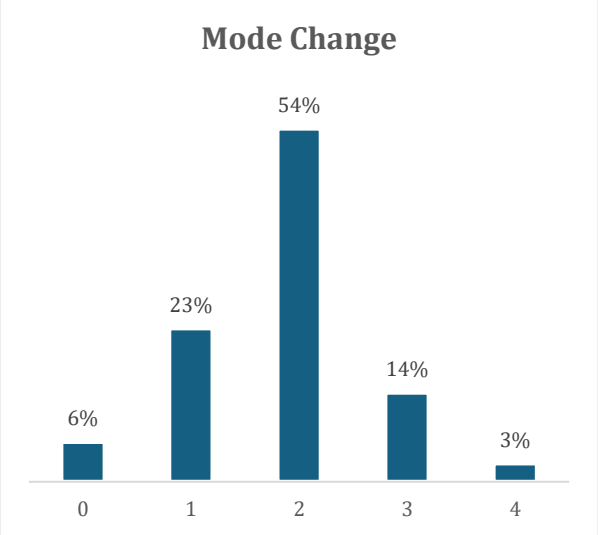


Figure 3-26: Change of modes

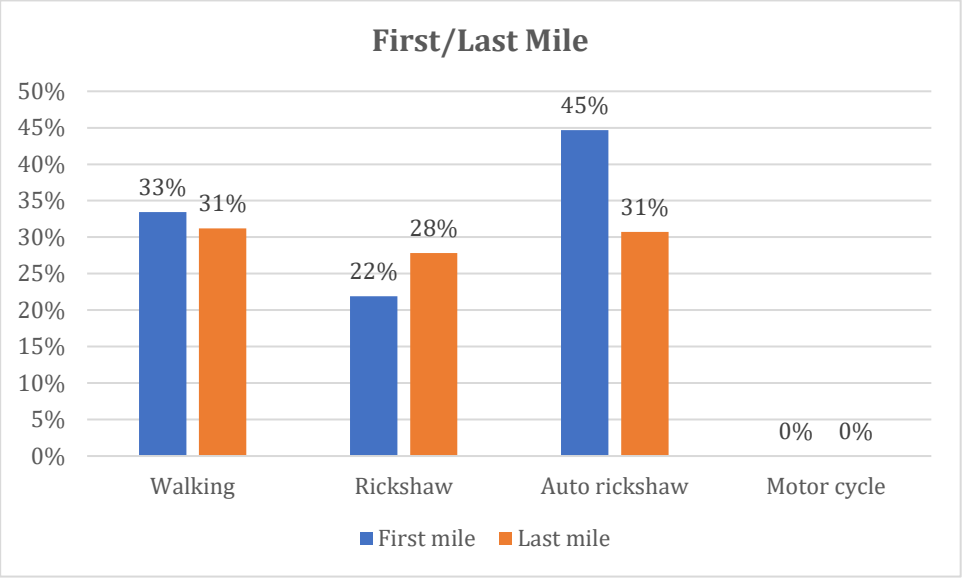


Figure 3-27: Access to the public transport

Figure 3-25 compares the percentage of individuals using different modes of transportation for the first and last mile of their journey using public transportation. The chart includes four modes of transport: walking, rickshaw, auto rickshaw, and motorcycle. 33% use walking for the first mile, while 31% use it for the last mile. 22% use a rickshaw for the first mile, compared to 28% for the last mile. About 45% of the respondents uses auto rickshaws as their first mile transportation and 31% use auto rickshaw as their last mile transportation. Motorcycle is not used for first or last mile mode of transportation while using public transportation.

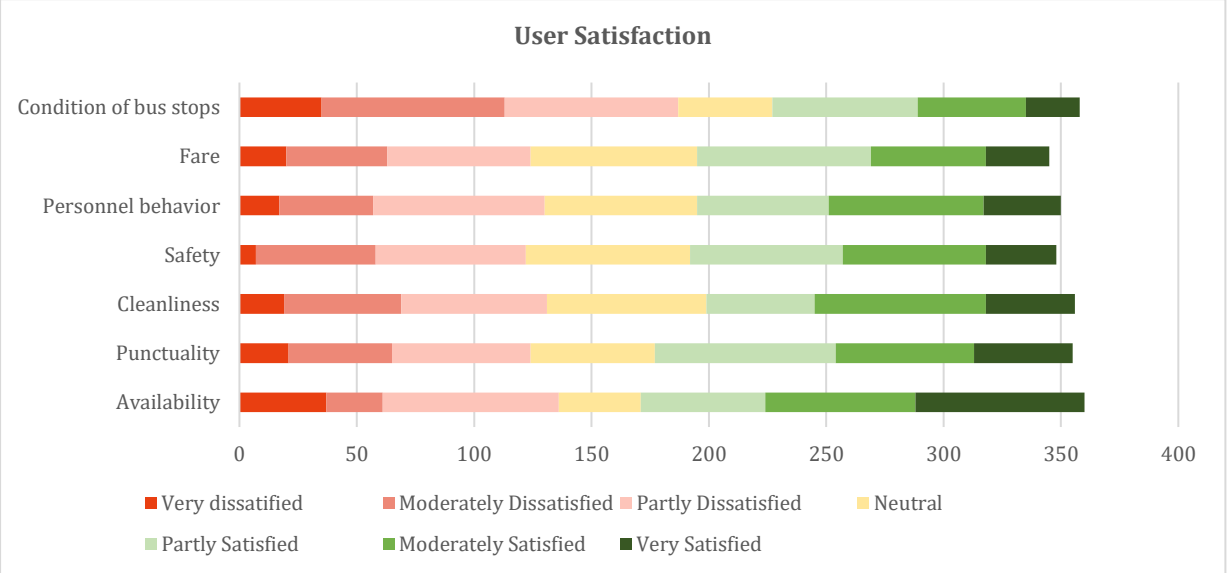


Figure 3-28: User satisfaction for public transportation service

The information from Figure 3-26 underscores a generally positive sentiment among respondents when evaluating the overall state of public transport, taking into account various critical aspects such as fare, personnel behavior, safety, cleanliness, punctuality, and availability. However, a noteworthy observation is the expressed dissatisfaction specifically concerning the condition of bus stops in Nawabganj upazila.

This targeted dissatisfaction with the condition of bus stops in Nawabganj upazila indicates a localized area of concern that may require focused attention and improvement efforts. Understanding the specific issues contributing to this dissatisfaction—whether related to infrastructure, amenities, cleanliness, or other factors—becomes crucial for devising effective strategies to enhance the overall quality of bus stops in the mentioned location.

Operator Survey

A recent survey was conducted to identify bus operators serving the Nawabganj upazila, operating both within and throughout the region. The survey revealed the presence of six operators in Nawabganj: Nobokoly Paribahan, BRTC, Druto Paribahan, Jamuna Deluxe Private Limited, DNK Paribahan, and Jaypara Paribahan. Notably, two of these operators originate from Nawabganj. Further details about these operators are presented in the following table.

Table 3-15: Bus operator details in Nawabganj Upazila

	Nobokoly Paribahan	**BRTC**	**Druto Paribahan**	**Jamuna Deluxe PVT LTD**	**DNK Paribahan and Jaypara Paribahan**
Number of buses	42	5	15	18	25
Capacity of buses	44	75	50-55	56	45-50
Origin	Bandura/Sonabaju	Bandura	Moinotghat	Moinot ghat	Joypara College gate
Destination	Gulistan	Gulistan	Gulistan	Gulistan	Gulistan
Schedule	10 minutes interval from 6 am to 7 pm	6 am -9 am	Every 30 minutes (from 5:30 am to 4 pm)	6 am to 9 am: every 15 minutes 9 am to 5 pm: every 20 minutes	5:40 am to 5 pm: every 30 minutes
No. of passengers (approximate)	2200	325		1000-1100	7-10 am: 45 persons In other times:20-25 persons

Route (via)	Nawabganj	Nawabganj	Majhirkanda	Majhirkanda	Galimpur and Tikorpur

3.4.5 Pedestrian Interview

Introduction

A pedestrian interview survey is a method of collecting data on the travel behavior and preferences of pedestrians. It involves interviewing pedestrians at selected locations, such as sidewalks, crossings, or public places, and asking them questions about their trip origin, destination, purpose, mode, frequency, and satisfaction. Pedestrian interview surveys can provide useful information for planning and designing pedestrian facilities, improving walkability, and promoting walking as a mode of transport which helps in ensuring a healthy community. Nawabganj Upazila, being in the periphery of Dhaka city, in a potential for developing an efficient pedestrian friendly locality. A pedestrian interview survey in Nawabganj helped in understanding the travel behavior of the pedestrians and their thoughts about their walking conditions.

3.4.5.1 Approach and Methods of Data Collection

Survey Location/Points

Considering the overall context of Nawabganj Upazila, four points are selected for the Pedestrian Interview survey. The points are located at Galimpur, Bagmara, Nawabganj Mor and Bandura area. The locations/points were selected to get perceptions of pedestrians at different places at Nawabganj. The selected points are shown in **Error! Reference source not found.**3-27.

Survey Duration

Surveys were conducted for a period of 15 hours. Surveys started at 6 AM and ended at 9 PM.

Days

Survey was conducted on a weekday and a weekend. The weekday was a normal working day and Friday was the weekend for the survey.

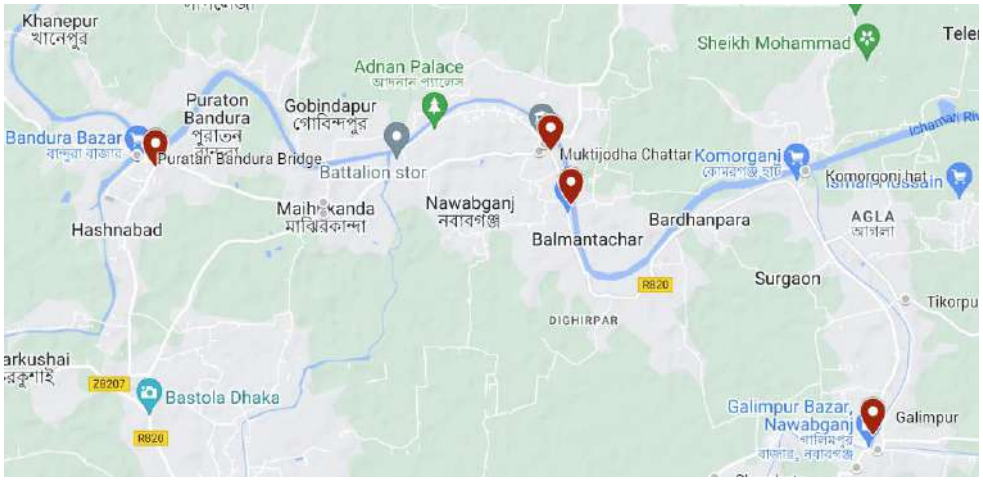


Figure 3-29: Survey points for Pedestrian Interview Survey

Questionnaire Preparation

To obtain detailed travel behavior and perceptions from the pedestrians, questionnaire was developed. The questionnaire contained questions about their introductory and general information, their travel behavior, their perception about the need for walking infrastructure etc. The prepared questionnaires were used both in paper form and digital form. The questionnaire is attached in Annex 4.

Survey Considerations

Government holidays, school holidays, political situations or any other exceptional circumstances that could have affected the regular traffic and pedestrian volume weren't scheduled for conducting the count surveys.

Survey Method

The survey was carried out by surveyors. They collected data from the pedestrians across the survey locations. Data were collected in hybrid manner, using paper-based method, and also using Kobo Toolbox. Snaps during the survey are provided in Figure 3-28 and **Error! Reference source not found.**29.

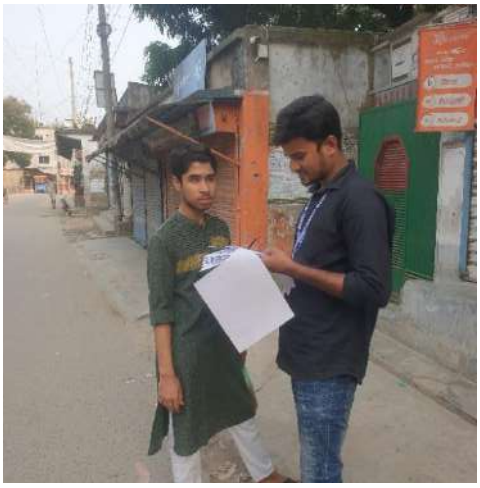


Figure 3-30:Pedestrian interview survey using paper-based system

Figure 3-31: Pedestrian interview survey using Kobo Toolbox

3.4.5.2 Major Findings

Collected data from the pedestrian interview survey provided valuable insights into the transportation experiences of pedestrians in the designated area. Some common information about the pedestrians was collected to have an idea of the demographics of the respondents.

The analysis of gender distribution within the surveyed population reveals a notable disparity in the representation of males and females which in represented in Figure 3-30**.** This gender distribution indicates a majority of 73% being males, while females account for the remaining 27%. The age distribution reveals a varied demographic profile, with the highest percentage in the 21-30 age group, comprising 34% of the surveyed population. The 31-40 age group follows

closely with 26%. The distribution decreases gradually for older age groups, with 61-70 years representing 3% and no respondents reported to be over 70 years old.

From the graph showing the distribution of occupation of the respondents, it is revealed that most individuals are involved in business (35%), followed by students (17%), and housewives (15%). Private job holders constitute 9%, while government employees are at 1%. Farmers, laborers, and unemployed individuals collectively make up a smaller percentage, with 2%, 0%, and 4%, respectively.

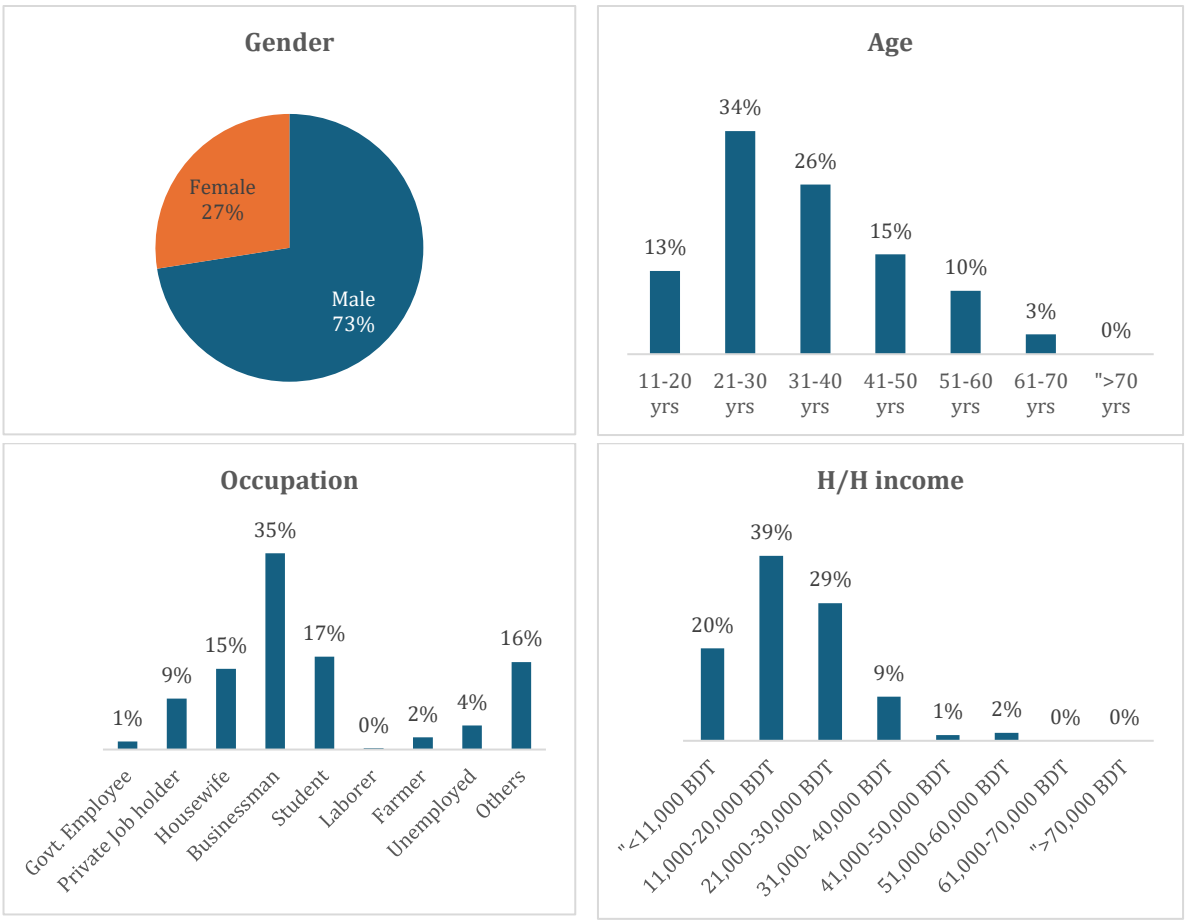


Figure 3-32: Demographic information of the respondents

This income distribution provides a clear picture of the financial demographics within the surveyed population. The majority of individuals fall into the 11,000-20,000 BDT income range, comprising 39% of the respondents. The next significant group is in the 21,000-30,000 BDT range at 29%. Smaller percentages are distributed across lower and higher income brackets, with fewer percentages in other income ranges.

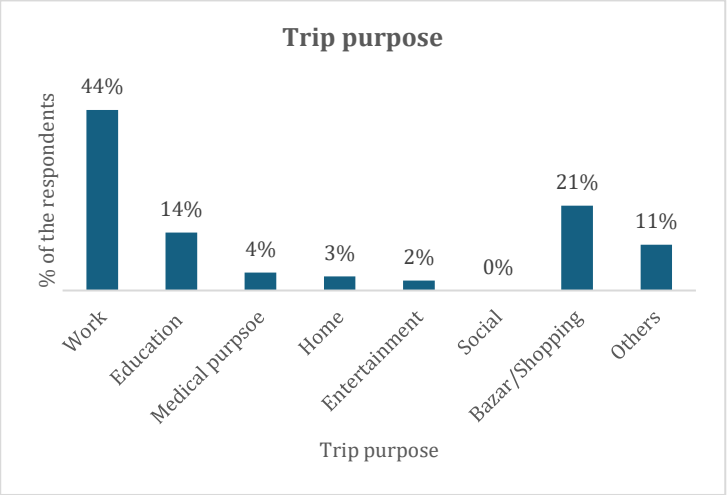


Figure 3-33: Trip purpose of the respondents

Travel behavior of the pedestrians is presented by their trip purpose, travel distance, travel time, travel cost and frequency of that trip. The graph gives a clear picture of the fact that people mostly travel for work purposes (44%). A lower percentage of pedestrians made their trips for bazar/shopping purposes (21%) followed by education purposes (14%). Others (11%) category is a catch-all for various purposes not covered explicitly in the survey. It could include miscellaneous activities like running errands, attending events, or any other non-specific reasons for walking.

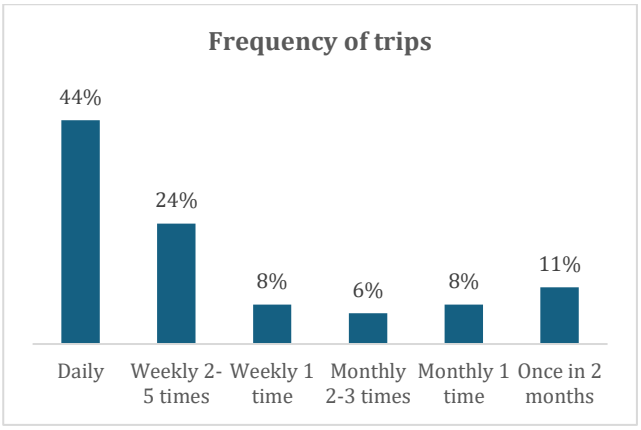


Figure 3-34: Frequency of trips made by the pedestrians

Error! Reference source not found. This suggests that a substantial portion of the surveyed pedestrians engage in walking activities for their trip purpose on a daily basis. This could suggest a population that relies heavily on walking for their daily commute, exercise, or routine activities. A significant number of pedestrians (24%) walk 2 to 5 times a week. This frequency may indicate a mix of regular and occasional walkers for their specific trip purpose.

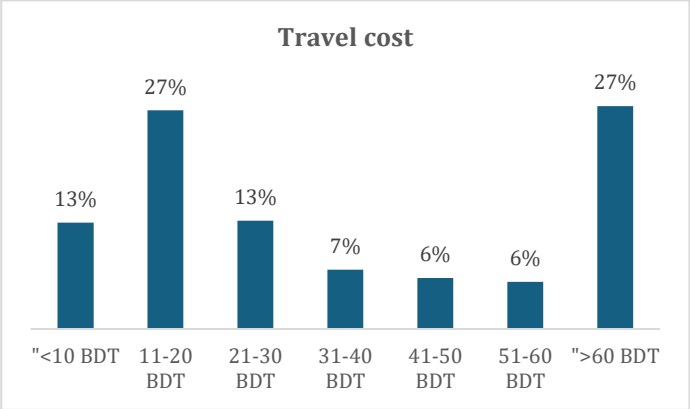


Figure 3-35: Travel cost of the respondents

The respondents were asked about their travel costs for the trips they were making at the time of the survey. They were asked about the travel costs of the trips they were on at that time. Their responses are presented in Figure 3-33 where it is clear that majority of respondents (27%) spend 11-20 BDT and more than 60 BDT for those specified trips. A noticeable percentage of respondents spend 21-30 BDT and less than 10 BDT for their trips.

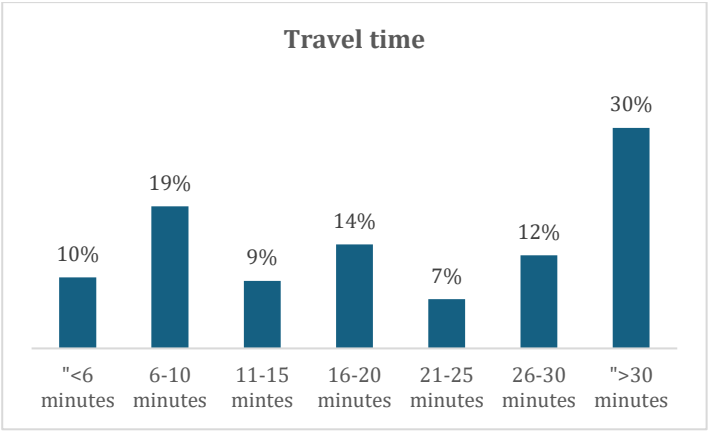


Figure 3-36: Travel time for the trip

From Figure, it is apparent that most of the respondents have to commute for more than 30 minutes to get to their destinations. 19% of respondents need 6-10 minutes to complete their trip while 14% of them complete their trips within 16-20 minutes.

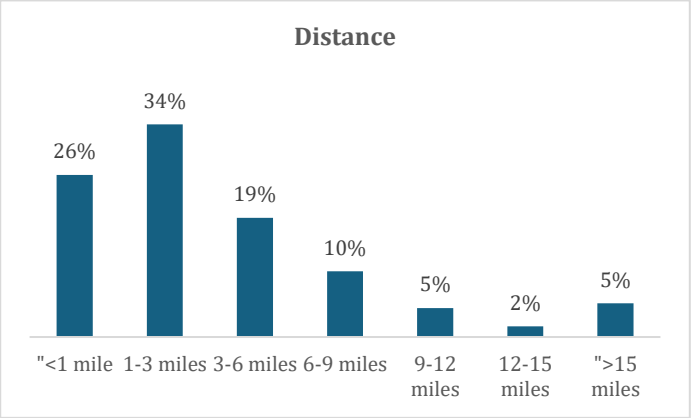


Figure 3-37: Travel Distance of the respondents

The Figure expresses that most of the respondents travel between 1-3 miles for their trips while 5% of them is opting for long distance travels. This suggests that a significant portion of pedestrians cover moderate distances.

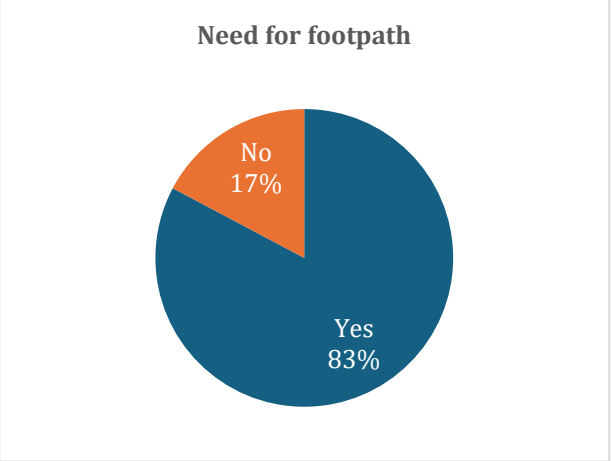


Figure 3-38: Opinion on footpath availability

The survey engaged pedestrians inquiring about the availability of footpaths in their locality and whether they believed there was a necessity for additional footpaths to enhance their walking experience. Distribution of opinion for this query is illustrated here. A significant majority of respondents (83%) expressed a positive viewpoint, indicating a strong desire for more footpaths in their area. Conversely, a minority held the opposite perspective. These findings emphasize the prevalent sentiment among pedestrians that additional footpaths are needed to improve the overall walking experience in their community.

3.4.6 Parking Survey

Introduction

A parking survey is a systematic examination and assessment of parking facilities, practices, and related factors within a specific area or community. This type of survey is conducted to gather data on parking patterns, demand, and challenges, and it plays a crucial role in urban planning, transportation management, and community development.

Nawabganj Upazila, as a growing and vibrant locality, faces evolving demands in various aspects of infrastructure, and parking is a critical component of this urban landscape. As the population and economic activities in the Upazila continue to expand, understanding the dynamics of parking is crucial for an efficient transportation system and improved quality of life for residents. This report aims to provide a detailed analysis of the current state of parking facilities, challenges, and opportunities within our community.

The need for a parking survey in Nawabganj Upazila arose due to the growing population, increasing vehicular traffic, and the desire to enhance the overall urban experience.

3.4.6.1 Approach and Method of Data Collection

The parking survey conducted in Nawabganj Upazila primarily involves on-site assessments with the main objective of gauging the existing demand for parking along the busy roads in the area. Specifically chosen roads and survey points were utilized to comprehensively examine the current state of roadside parking.

A notable discovery from the survey indicates the absence of designated parking areas within Nawabganj Upazila. Consequently, vehicles are compelled to utilize the roadside spaces for parking. The predominant observation is that on-street parking has become the prevalent practice among vehicle owners in the area. This highlights a pressing need to address the lack of organized parking infrastructure in Nawabganj Upazila to enhance traffic management and ensure the safety and convenience of both drivers and pedestrians.

Survey Location/Points

Considering the overall context of Nawabganj Upazila, three locations are selected for the parking survey. The points are located at Bagmara, Nawabganj Mor and Bandura area. The locations/points were selected considering the roads where vehicles were observed to be parked on the roadsides. The selected points are shown in Figure 3-37.

Survey Duration

Surveys were conducted for a period of 15 hours. Surveys started at 6 AM and ended at 9 PM.

Days

The survey was conducted on a weekday. The weekday was a normal working day.

Questionnaire Preparation

A parking survey form was developed to facilitate the surveyors in collecting parking data. The parking survey form is attached in Annex 5.

Survey Considerations

Government holidays, school holidays, political situations or any other exceptional circumstances that could have affected the regular parking volume weren't scheduled for conducting the count surveys.

Figure 3-39: Survey locations for parking survey

Survey Method

A comprehensive parking survey was conducted, involving the counting of fifteen types of modes at 30-minute intervals at selected locations. The survey covered both sides of each road at each intersection, and parking data were collected and recorded using a prepared parking survey form. The collected data were then organized and input into an Excel database for further analysis, aiming to gain a deeper understanding of the existing parking conditions. Figure 3-38 shows the parking condition at different locations and Table 3-16 provides the details of parking survey.

Figure 3-40: Parking condition at different survey locations

Table 3-16: Details of parking survey

Survey period	Location/Intersection	Road	Land Use
January'24	Bagmara	Bagmara Bazar road	Commercial/Shop
January'24		Bagmara-Court Building (Nawabganj Road)	Commercial/ Administrative
January'24		Bagmara Bridge	Commercial/Shop
January'24	Nawabganj	College Road	Mixed/Education
January'24		Jantrail Bridge (to Sholla)	Commercial/Shop
January'24		Nawabganj Road	Commercial/Shop
January'24		Majhirkanda Road	Commercial/Shop
January'24	Bandura	Hasnabad road	Commercial/Shop
January'24		Bandura bazar-Terminal	Commercial/Shop
January'24		Bandura bridge	Commercial/Shop

3.4.6.2 Major Findings

The parking survey helped to understand the demand for parking for the modes present in Nawabganj upazila. Based on the parking survey, the predominant modes for parking in Nawabganj upazila are auto rickshaws. The other dominant modes are rickshaw, CNG, motorcycle and bicycle. Parking conditions in the three intersections are described in the following.

Bagmara

In Bagmara bazar intersection, one of the legs lead to Bagmara bazar, one of them leads to Bagmara Bridge and the other one is on Nawabganj Road.

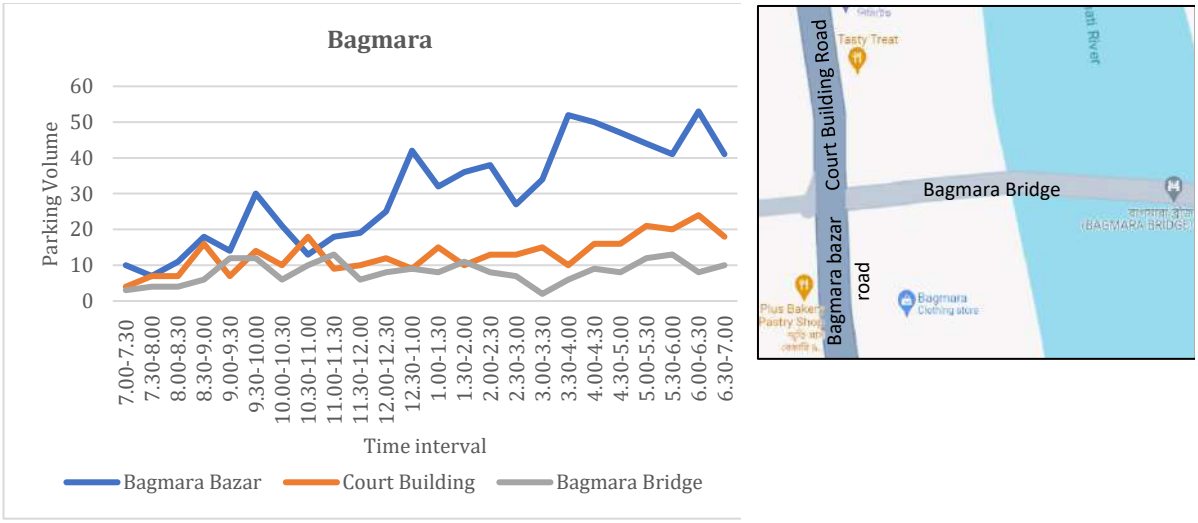


Figure 3-41: Parking volume at Bagmara intersection

In the Figure the graphical depiction illustrates the distribution of parking volume along the roads surrounding Bagmara intersection. Evidently, there is a notable surge in parking intensity along the Bagmara Bazar road, indicating a significant concentration of parked vehicles in that area. On

the contrary, the other two roads exhibit a comparable and relatively lower parking intensity, showcasing a similarity in the parking patterns observed along these thoroughfares. This finding helped in understanding the parking dynamics of Bagmara intersection.

Nawabganj

Nawabganj intersection, otherwise known as Nawabganj mor or 'chourongi' is an important intersection in the transportation network of the upazila. It's a four-legged intersection maintaining connectivity with different parts of the upazila.

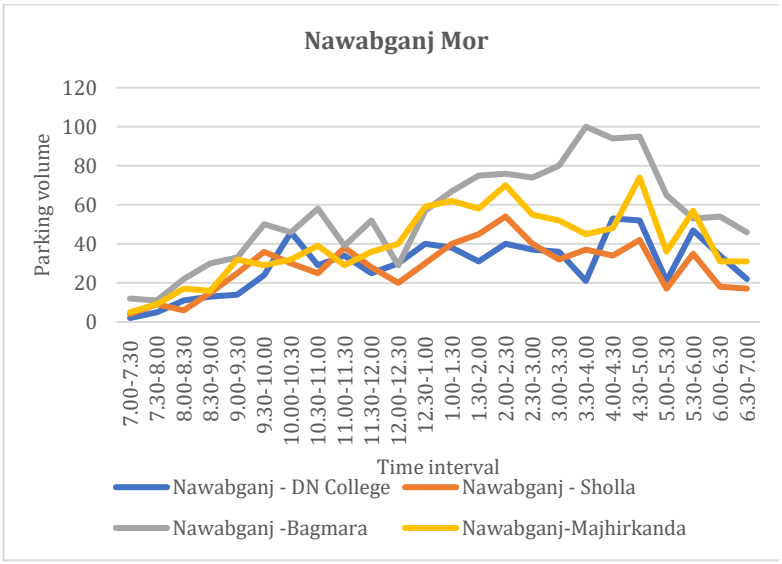


Figure 3-42: Parking volume at Nawabganj Mor

As the Figure suggests, parking volume is relatively higher on the sides of college road at Nawabganj Upazila. The road that leads toward Majhirkanda also possess relatively higher parking volume. In contrast, the roads connecting to Jantrail Bridge (towards Sholla) and the route intersecting from Bagmara demonstrate a parking scenario that is relatively lower but comparable. This nuanced examination of parking patterns provides valuable insights into the distribution of parking activities in the specified areas, enabling a more comprehensive understanding of the local parking landscape.

Bandura

Another important intersection in Nawabganj upazila is located at Bandura. It's a three- legged intersection with the only terminal of Nawabganj upazila near this.

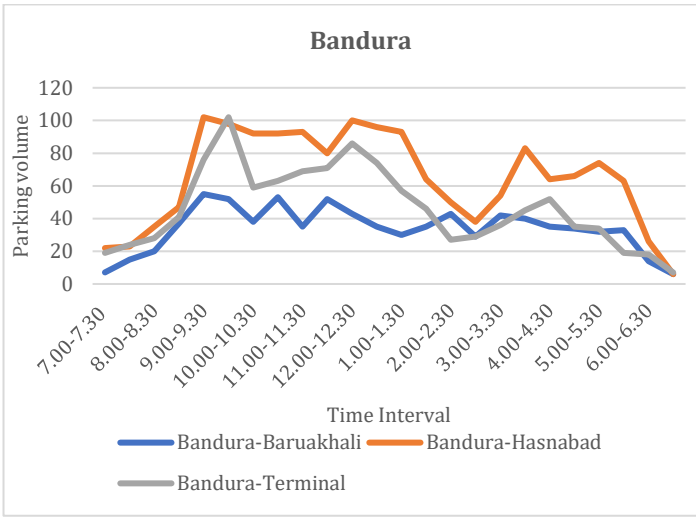


Figure 3-43: Parking volume at Bandura Intersection

Parking volume at Bandura is relatively higher than the other two locations. Among the three legs of the intersection, the road that leads to bandura bus terminal has the highest parking intensity as it can be seen in Figure 3-41. Unlike the other two intersections, parking conditions are very specific for the other two roads at Bandura. The road that leads to Hasnabad has higher intensity than that of the road leading to Baruakhali bazar.

Summary

Table 3.17 represents details of parking during peak parking time. The table provides an overview of parking volumes during peak hours at various locations in **Bagmara**, **Nawabganj**, and **Bandura**, categorized by the type of road and surrounding land use. The data also includes total parking volumes for each location.

Table 3-17: Parking details

Location	Peak Time	Road	Surrounding land Use	Peak Demand	Total Peak Demand
Bagmara	6:00-6:30 PM	Bagmara Bazar road	Commercial	53	85
		Bagmara Court Building, Nawabganj	Commercial, Administrative	24	
		Bagmara Bridge	Mixed	8	
Nawabganj	4:30-5:00 PM	College Road	Commercial	52	263
		Jantrail Bridge	Commercial	42	
		Nawabganj road	Commercial	95	
		Majhirkanda road	Commercial	74	
Bandura		Bandura bridge	Commercial	52	252

	9:30-10:00 AM	Hasnabad road	Commercial	98	
		Bandura bazar terminal	Commercial	102	

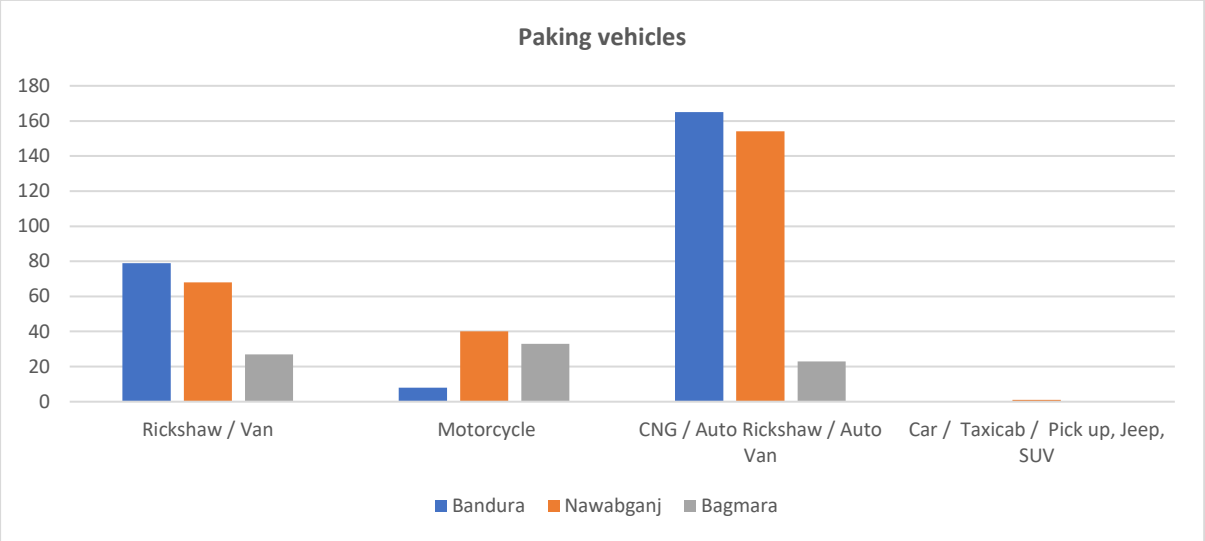


Figure 3-44: Distribution of parked vehicles at different locations

Figure presents parking data for three locations: Bandura, Nawabganj, and Bagmara, showing the number of parked vehicles by vehicle type across these locations. The vehicle types include Rickshaw/Van, Motorcycle, CNG/Auto Rickshaw/Auto Van, and Car/Taxicab/Pickup/Jeep/SUV.

According to the graph, CNG/Auto Rickshaw/Auto Van dominates parking volumes in both Bandura and Nawabganj. Rickshaw/Van also sees high parking volumes, especially in Bandura and Nawabganj. Motorcycle parking is significantly higher in Nawabganj compared to the other locations. Car/Taxicab/Pickup/Jeep/SUV parking is minimal across all locations, with only a small presence in Nawabganj.

3.4.7 Terminal and Boat Ghat Survey

Introduction

In the ever-evolving domain of transportation, the significance of terminals as crucial nodes connecting various localities cannot be overlooked. This part sheds light on the existing conditions and significance of the terminals of Nawabganj Upazila (if any), delving into its functionalities, user experiences, and potential areas for enhancement. As a pivotal hub in the upazila's transportation network, understanding the operations and perspectives surrounding the terminals present in Nawabganj is paramount for optimizing efficiency, ensuring passenger satisfaction, and contributing to the seamless flow of people and goods.

The motivation for undertaking this comprehensive terminal survey arises from the acknowledgment that terminals play a central role in shaping the overall travel experience. We embarked on an in-depth exploration, employing a diverse range of methodologies, including passenger interviews, staff consultations, and operational assessments.

3.4.7.1 Approaches and Methods of Data Collection

Being at the periphery of Dhaka city, Nawabganj upazila is not very far from the bustling nature of the city. The upazila attracts/generates/contains considerable amount of traffic inflow and outflow to/from/within the upazila. Hence, the terminal/s existing in the upazila can/might influence the nature of transportation activities of the upazila.

Terminal survey was started from finding the information on the existence of any terminal (e.g.: bus, truck etc.) in Nawabganj Upazila. One **bus** terminal were found in the upazila. No truck terminals were found in the process. Location of the bus terminal is shown in Figure 3-42.

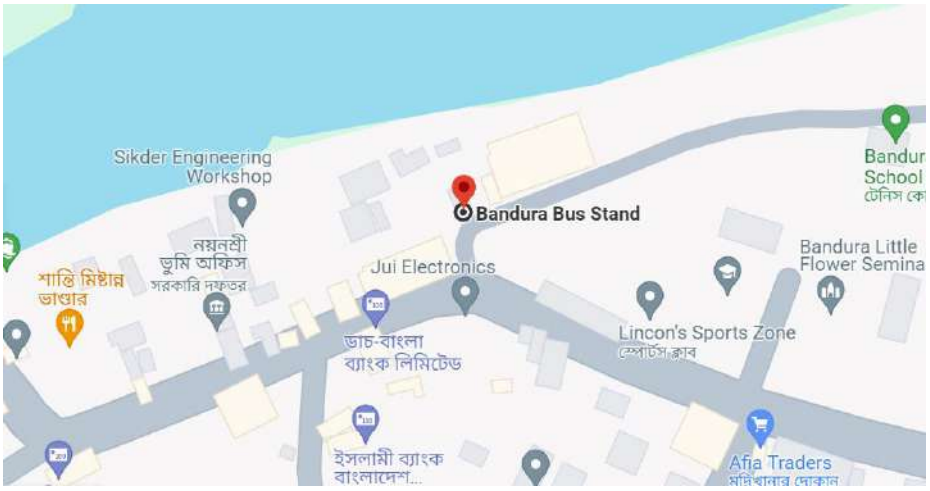


Figure 3-45: Bandura bus terminal

A fact sheet was prepared to understand the visible condition of the terminals. To understand the comprehensive condition of the bus terminals, discussion with the relevant personnels was done to observe and understand their views about the terminals. Pictures were taken from the terminals and notes regarding the opinions of the interviewed personnel were noted by the team. The survey findings are summarized in the fact sheets, and they are provided in Annex .

Figure 3-46: Terminal survey

3.4.7.2 Major Findings

Bandura bus terminal is located near Bandura bazar encompassing 24 % area. The terminal was built up on khas land. The terminal has the capacity to hold 22 buses at a time. 70 buses depart from the terminal per day on average. It was observed that only two operators operate from the terminal, one in Nobokoly Paribahan and BRTC. Generally, buses of Nobokoly Paribahan depart from the terminal at 10 minutes intervals, and five buses from BRTC operate between 6:30 and 8:00. The buses operate only on one route, which is Badura-Gulistan route (Route number 416). It is apparent that the terminal plays as a hub to maintain connectivity between the capital city and the upazila.

The personnel from the terminal spoke about the existing problems of the terminals. According to them, the overall condition of the terminal is very poor. The waiting room is suffering from shortage of seats and cleanliness is not maintained. They mentioned that the toilets are not in good condition and need to be improved. They also mentioned that the condition of the terminal worsens during monsoon.

Figure 3-47: Existing condition of terminal facilities

Key Recommendations

The following recommendations are based on the feedback of personnels, as well as an assessment of the current conditions of the bus terminal.

- Establish regular cleaning and maintenance schedules for restrooms and toilets to ensure cleanliness and hygiene.
- Expand and upgrade terminal facilities to accommodate the growing number of buses and passengers.
- Invest in modern amenities such as comfortable waiting areas, restrooms, and information kiosks.
- Install proper lighting and security cameras to enhance safety and security.
- Designate loading and unloading zones for buses to minimize congestion.
- Implement waste management systems to ensure cleanliness and environmental sustainability.
- Ensure the terminal is accessible to people with disabilities, including ramps and elevators.
- Implement a regular maintenance schedule for the terminal infrastructure and facilities.
- Keep the terminal clean and well-maintained to create a positive impression for passengers.
- Provide free access to clean toilets for passenger convenience.
- Create separate, well-maintained restrooms exclusively for women.

3.4.8 Household Travel Survey

Introduction

A socio-economic survey was conducted in Nawabganj Upazila to gain an understanding of the perceptions of households about the overall scenario of the upazila. Household travel information was gathered through a household travel survey conducted along with the socio-economic survey.

3.4.8.1 Approach/Methods of Data Collection

The household travel survey tried to better understand the household travel behavior/patterns of the residents of the upazila. It was aimed at gathering valuable insights about people's travel patterns, mode share of transportation, trip purpose etc., and the distribution of trips through this household travel survey (shown in Figure 3-45). The survey was conducted on a sample basis with a sample of 400 households.

৫।দৈনিক ভ্রমণ

৫.১ প্রতিদিনের ভ্রমণ সংখ্যাঃ

খানা সদস্য নং	কাজের জন্য ভ্রমণ	শিক্ষার জন্য ভ্রমণ	বাজারের জন্য ভ্রমণ	অন্যান্য ভ্রমণ
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১০				

* ভ্রমণ = 10 মিনিটের অধিক হাঁটা পথের দূরত্ব

৫.২ কার্ড /লগ্ড মাইল মাধ্যমঃ

খানা সদস্য নং	কাজের জন্য ভ্রমণ	শিক্ষার জন্য ভ্রমণ	বাজারের জন্য ভ্রমণ
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১০			

যানবাহন/মাধ্যমঃ ১ = হাঁটা ; 2 = রিকশা/ভ্যান; 3 = সাইকেল ; 4 =মটর সাইকেল ; 5 = সিএনজি/টেম্পু/মিশুক/ব্যাটারী চালিত রিকশা; 6 = বাস; 7 = প্রাইভেট কার

৫.৩ প্রতিদিনের ভ্রমন বৃত্তান্ত

খানা সদস্য নং	কাজের জন্য ভ্রমণ			শিক্ষার জন্য ভ্রমণ			বাজারের জন্য ভ্রমণ			অন্যান্য ভ্রমণ		
	দূরত্ব	যানবাহন	খরচ	দূরত্ব	যানবাহন	খরচ	দূরত্ব	যানবাহন	খরচ	দূরত্ব	যানবাহন	খরচ
১												
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৪												
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৯												
১০												

দূরত্বঃ ১ = <১ কি মি ; ২ = ১-২ কি মি; ৩ = ২-৫ কি মি ; ৪ = >৫ কি মি

যানবাহন/মাধ্যমঃ ১ = হাঁটা ; 2 = রিকশা/ভ্যান; 3 = সাইকেল ; 4 =মটর সাইকেল ; 5 = সিএনজি/টেম্পু/মিশুক/ব্যাটারী চালিত রিকশা; 6 = বাস; 7 = প্রাইভেট কার

খরচঃ ১= >২০ টাকা , ২=২০-৫০ টাকা , ৩= ৫০-১০০ টাকা, ৪=১০০-২০০ টাকা ,৫=>২০০ টাকা

Figure 3-48: Household travel survey questionnaire

3.4.8.2 Major Findings

It was thought to obtain the trip related information to get the trip diary of the households living in the upazila. A few limitations were encountered during the survey. The limitations were not limited to the ones mentioned below:

The respondents had to respond to the socio-economic survey before reaching the travel survey part. The length of the questionnaire resulted in monotony and reluctancy of the respondents to answer the questions to fill up the trip dairy of the members.

Several trip diaries were not completed. Many a time, all the family members were not present in the house during the survey and the respondent found it difficult to response to the detailed trip information of other family members.

Condition of adjacent roads

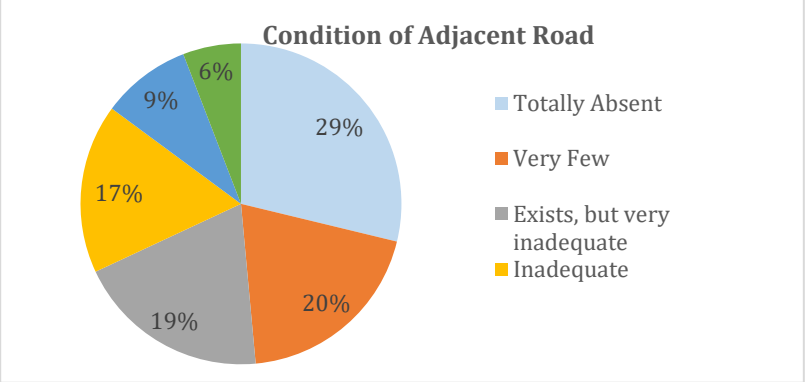

Figure 3-49: Opinions on availability of adjacent roads

People living in the upazila expressed their concern about the condition of the adjacent roads in their locality. It can be seen that many people (29%) hold the idea that adjacent roads are absent in their concerned locality. Some of the respondents (20%) feel that there are very few roads available and, in some cases, (19%) roads are very inadequate. On the contrary, there are a few residents who feel the opposite way and think that the existing roads are sufficient for the locality.

Availability of Footpaths

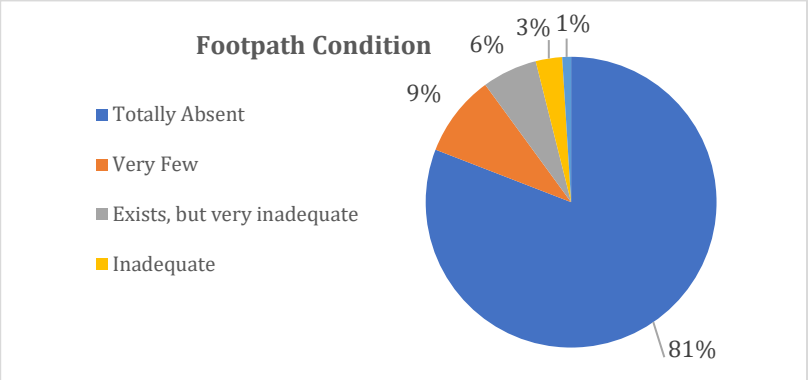

Figure 3-50: Opinions on footpath availability

The Figure represents the opinions of the respondents about their knowledge of footpath availability in Nawabganj upazila. A vast majority of the respondents (81%) expressed their belief about the absence of footpaths on the roads of the upazila. While the other respondents expressed their varied opinions on having footpaths. Their varied opinions expressed the concerns about not having sufficient footpaths. However, the responses from all the respondents conveyed the idea of lacking pedestrian infrastructures of Nawabganj Upazila.

Trip Purpose

Trip purpose of the respondents is shown in Figure 3-48. Purpose of trips are broadly detailed as work purpose, education purpose, bazar/ shopping purpose. Trips that are not categorized in the mentioned three purposes are categorized as others. According to the figure, share of work-related trips are highest (51%), followed by shopping/bazar purpose (30%) and other trips (13%). Education related trips got the lowest percentage of trip share (6%).

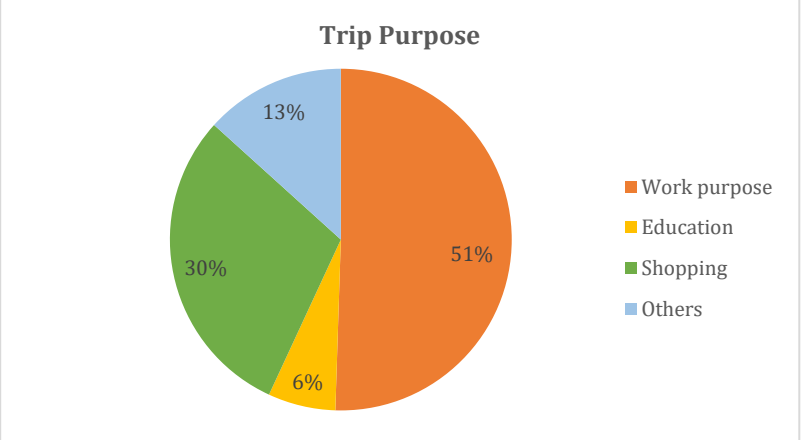

Figure 3-51-: Trip purpose of the respondents

First mile/Last mile mode

It was observed that the residents of the upazila use different modes for their trips. To observe the differences in mode share, mode used by the respondents for the first mile and the mode used for last mile has been recorded. First mile mode and last mile modes were categorized according to trip purposes. Figure 3-49, Figure 3-50 and Figure 3-51 shows the share of first mile modes and Figure 3-52, Figure 3-53 and Figure 3-54 shows the share of last mile modes. For each

purpose, walking is preferred for first mile trips and CNG/Auto rickshaws are preferred for last mile trips.

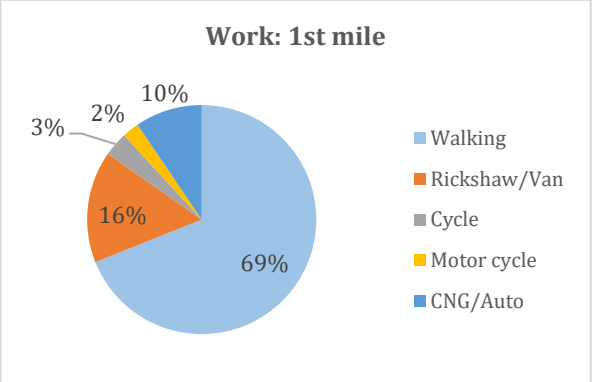

Figure 3-52: Modal share for first mile work trips

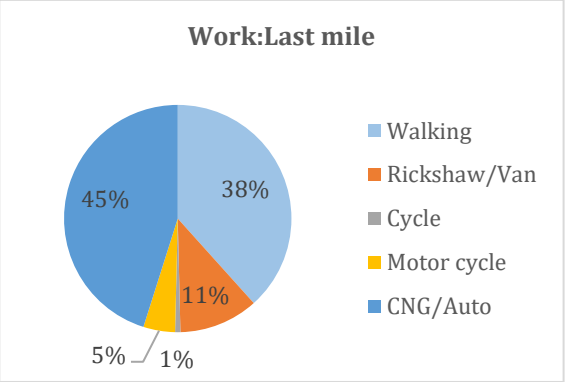

Figure 3-53: Modal share for last mile work trips

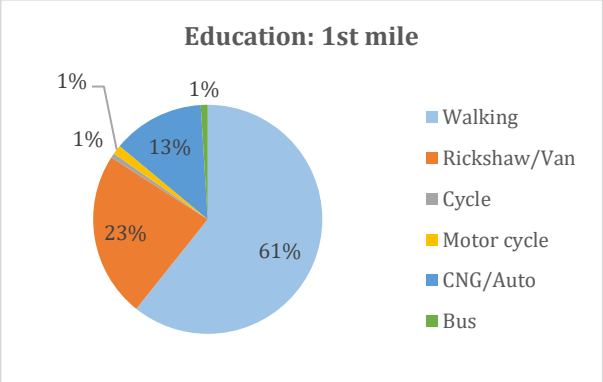

Figure 3-54: Modal share for first mile education trips

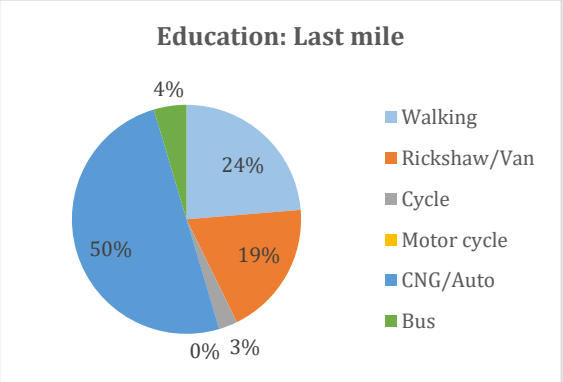

Figure 3-55: Modal share for last mile education trips

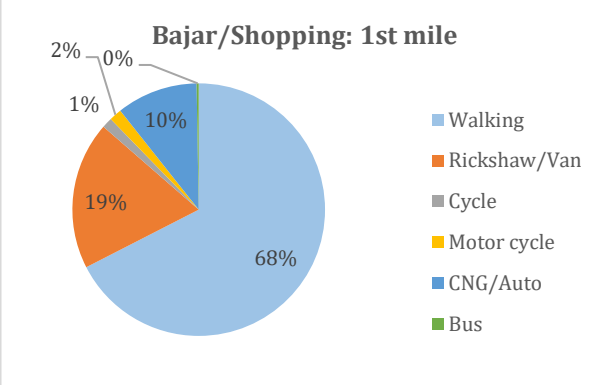

Figure 3-56: Modal share for first mile bazar/shopping trips

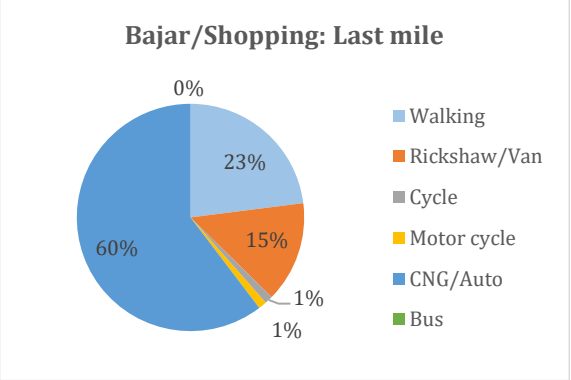

Figure 3-57: Modal share for last mile bazar/shopping trips

Daily Trip Details

Responses have been collected from the households of Nawabganj upazila regarding their trip details. The trips are categorized in four types; work related trips, education related trips, bajar/shopping related trips and other trips. For each kind of trip, information was collected from the households about the distance of trip, generally used mode and cost of the trip for each family member.

Figure 3-58: Distances covered by respondents' household members for specific purpose

It is apparent that, a large percentage of the residents who commute for work purpose makes relatively long-distance trips (>2 km). Relatively short distance trips are made by the people who commute for education, bazar/shopping and other purposes.

Figure 3-56 picturizes the mode share of the respondents' household members for each purpose. The greater part of the surveyed households use CNG/Battery rickshaws as their mode of transport for each purpose. This summarizes the existing condition of the respondent's mode choice while focusing on the predominance of Battery rickshaws in the upazila. A significant amount of the respondents favors walking for their trip purposes and rickshaw/van comes after that. It can be seen from the graphs in **Error! Reference source not found.** this holds true in every instance.

Trip cost of the households are illustrated in here. It is observed that majority of the people choose to spend up to 50 BDT for all work, education, bazar/shopping purposes and other trip purposes.

While a few people spend more than 50 BDT for education, bazar/shopping and other purposes, a significant

percentage of people spend between 50 to 100 BDT, and some spend more than 100 BDT for work purposes. Also, some people have to spend more than 50 BDT for education purposes.

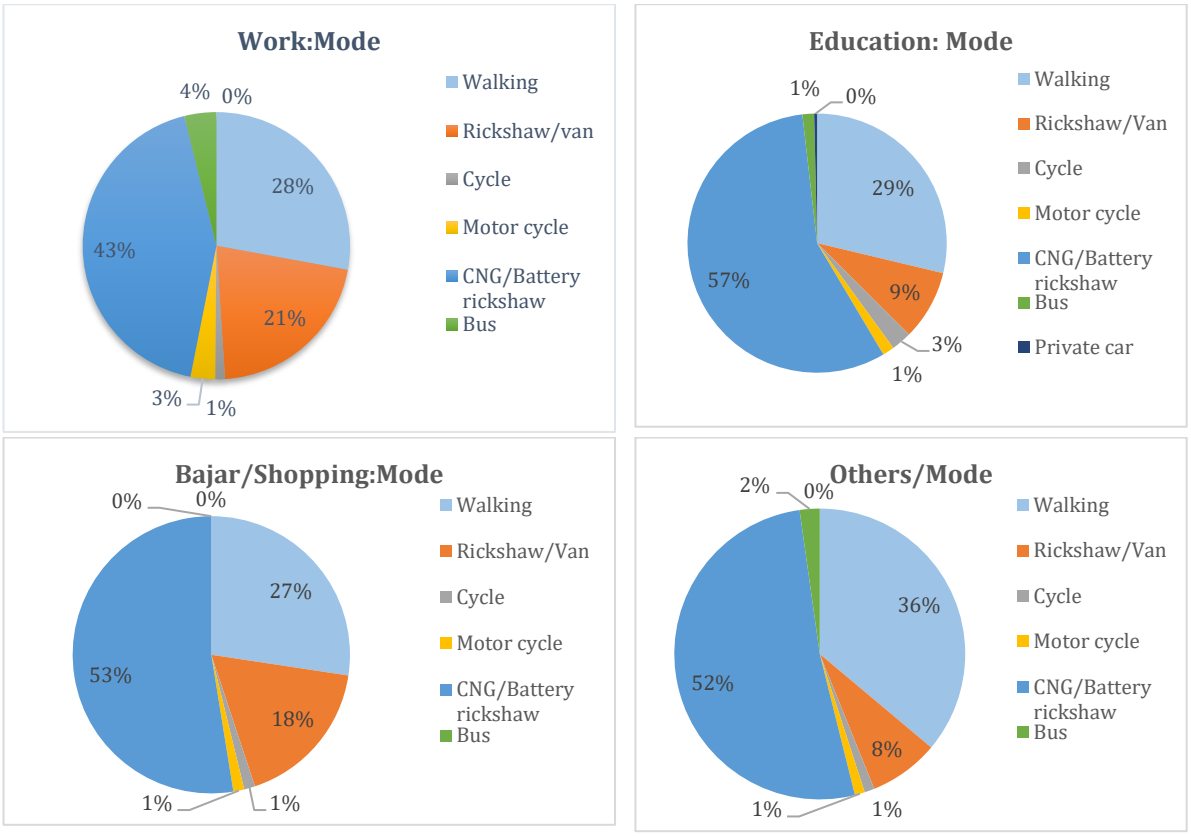

Figure 3-59: Mode choices of the member of the household of the respondents for specific purposes

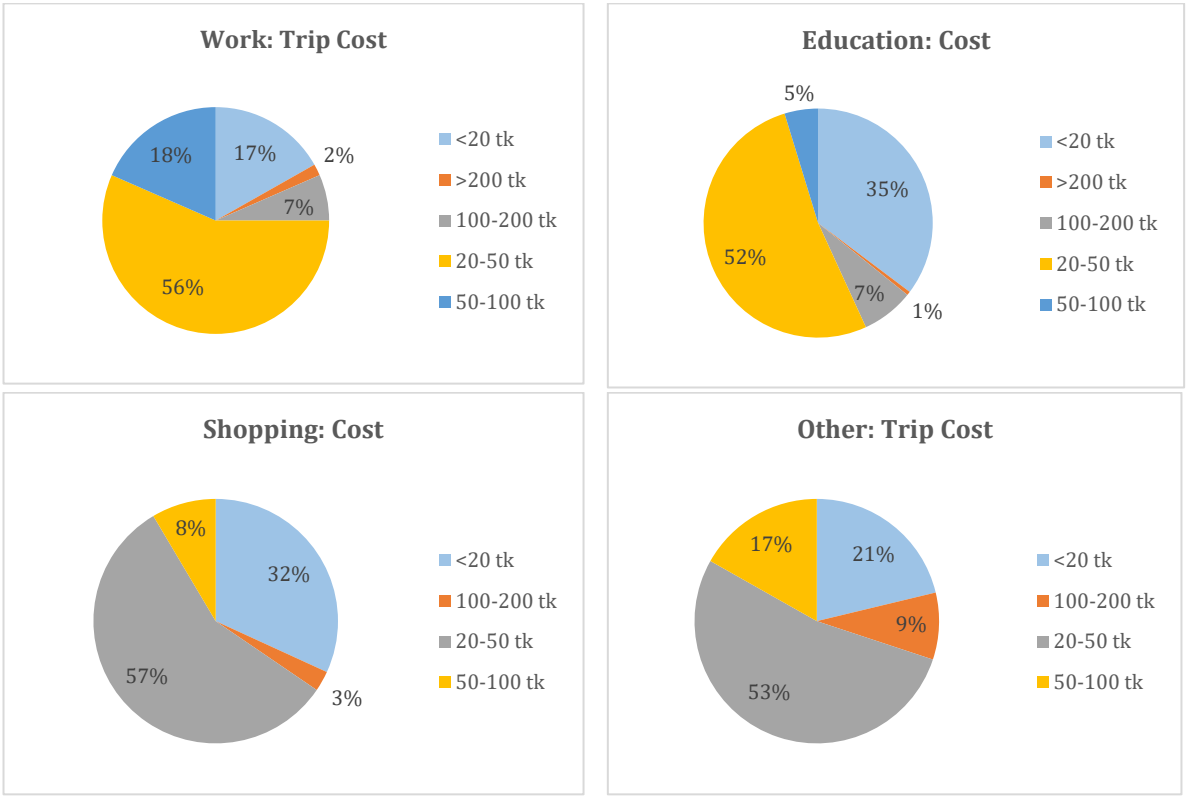

Figure 3-60: Cost of the trips the members of the household of the respondents make for specific purposes

3.4.9 Travel Time Survey

Introduction

The dynamics of transportation play a pivotal role in shaping the efficiency and functionality of a locality. Efficient transportation systems are vital components of modern urban infrastructure, playing a crucial role in fostering economic development, ensuring public safety, and enhancing overall quality of life. To evaluate and optimize these systems, it is essential to conduct thorough assessments of travel speeds, a key metric that reflects the effectiveness of a transportation network. Understanding travel speed patterns is paramount for ensuring efficient and safe mobility from the aspect of transportation planning and management.

Here, we present findings from a comprehensive travel speed survey conducted across [City/Area], aiming to analyze current travel speeds on major thoroughfares and identify areas for potential improvement are presented.

By examining the data collected, we aim to gain insights into the current state of travel speeds, identify potential bottlenecks, and propose recommendations for optimizing the overall transportation experience. The insights gleaned from this survey will contribute to informed decision-making, aiding in the development of strategies to enhance the efficiency and sustainability of our transportation network. This study not only contributes to the broader

discourse on urban mobility but also provides actionable information for stakeholders involved in the planning and management of transportation infrastructure.

3.4.9.1 Approaches/Methods of Data Collection

The main objective of the survey is to obtain information on the current road traffic situation and to identify bottlenecks in traffic flow.

Survey Location/Points

Considering the overall context of Nawabganj Upazila, three routes are selected for the travel time survey. They are identified as route A, route B and route C. These three routes encompass the major roads connecting different unions. Details of the routes are given in the following.

Route A: Komorganj hat- Hashnabad

Checkpoints: Komorganj Hat-Bordhonpara bajar- Bagmara- Muktijoddha chottor-Majhirkanda-Bandura polli biddut office- Puraton bandura bazar-Hashnabad

Figure 3-61: Route A of travel time survey

Route B: Muktijoddha Chottor- Sholla Hospital

Checkpoints: Muktijoddha chottor- Jantrail central mosque- Vawalia bazar- Chandrakhula bazar-Sholla Hospital

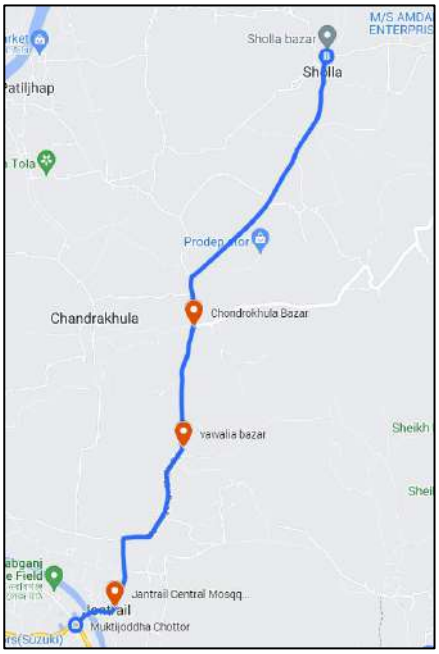

Figure 3-62: Route B of Travel Time Survey

Route C: Puraton Bandura- Beribadh (Figure 3-60)

Checkpoints: Bandura Bazar- Notun Bandura Bus Stop- Boro Barilla Jame Mosque- Baruakhali Jame Mosque- Anwara Begum High School- Food village Chinese restaurant

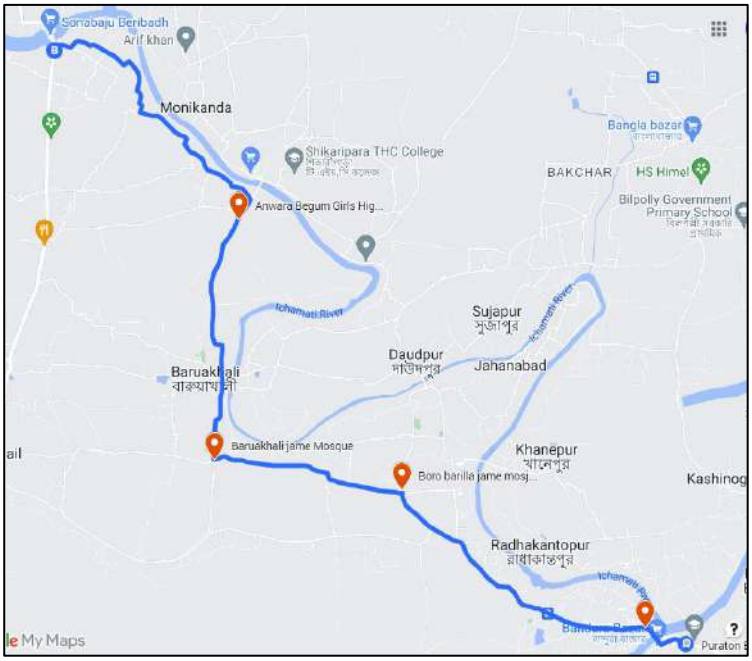

Figure 3-63: Route C of travel time survey

Survey Duration

Surveys were conducted during the peak hours in the respective areas.

Days

Survey was conducted on two weekdays.

Questionnaire Preparation

To obtain detailed travel time and delay data from the survey, a form was prepared. The travel time survey form is attached in Annex 7.

Survey Considerations

Government holidays, school holidays, political situations or any other exceptional circumstances that could have affected the regular traffic and pedestrian volume weren't scheduled for conducting the count surveys.

Survey Method

The detailed survey method was determined by considering the local situation. In principle the method is as follows:

- The primary vehicle to conduct the survey is a passenger car. It was observed that battery rickshaw/auto rickshaw can be considered as one of the most common modes in Nawabganj Upazila. Hence, battery rickshaw/auto rickshaw is also considered for conducting the travel time survey. The survey was conducted with the following plan.
  Route A: Only car
  Route B: Car and auto/battery rickshaw
  Route C: Car and auto/battery rickshaw
- A driver and three investigators boarded the car.
- The survey car was operated by the driver. The car moved at the same general speed as the other vehicles moving along the route to match the prevailing traffic conditions. It was instructed not to run at excessive speed or slower and to not overtake excessively or fall behind other vehicles.
- Each vehicle run through each route three times a day at the peak hours. The method of the survey involves running the vehicles on the chosen routes to make a round trip and track the amount of time it takes to get from one place to another as well as any delays. The cars will start from location A (marked in map) and run through the route to reach location B (marked in map) and again return to location A. Time to reach A-B point and B-A point will be noted using stop watches.
- The investigators recorded the departure time at the beginning of each trip. One of the investigators recorded the passing time through each link, one of them investigated the cause of delays and the other one recorded the delay time using stop watches.

3.4.9.2 Major Findings

Figure 3-61 and Figure 3-62 are the two maps representing the average travel speed to travel on route A, B and C by car. Figure 3-63 and Figure 3-64 depicts the average travel speed for auto rickshaw along route B and route C.

Route A

These figures show that travel speed is relatively low around the intersections of route A. There are two major intersections along route A, Muktijoddha chattar and Bandura. Another intersection is situated at Bagmara. Delays have been reported more near Nawabganj mor and Bandura bridge.

Route B

As it is mentioned earlier, two different modes have been used for the purpose of travel time survey along Route B. Along with Figure 3-63 and Figure 3-64 depicts the travel speed for battery rickshaw along Route B. Travel speed is relatively lower near Muktijoddha chattar because of delays caused at or near the intersection.

Route C

The scenario is the same as the others. Travel speed is relatively lower near Bandura intersection. Additionally, lower travel speed can be seen in the union roads as well.

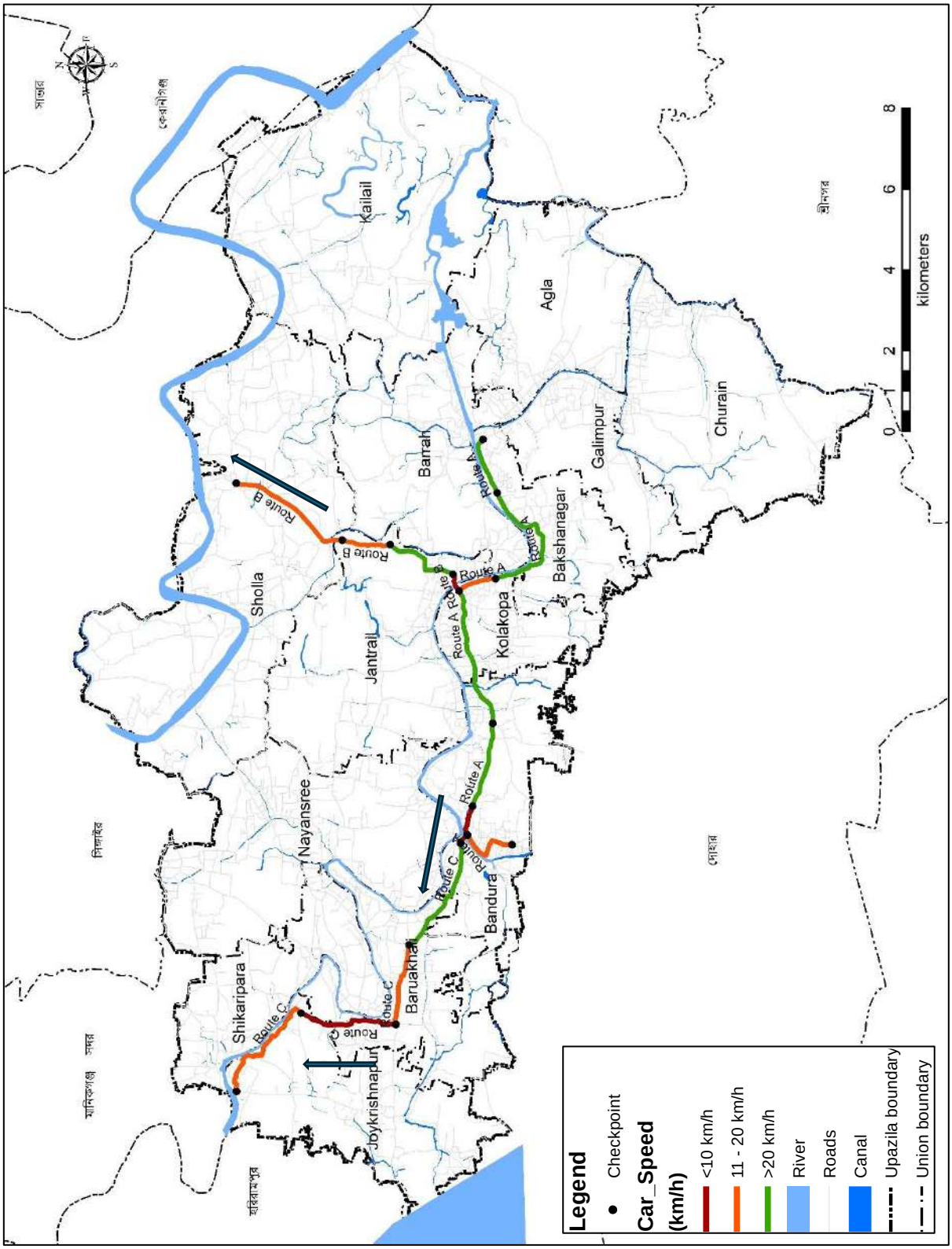

Figure 3-64: Travel speed by car on Route A (Komorganj hat ->Hashnabad), Roue B (Muktijoddha Chattar -> Sholla Hospital) and Route C (Puraton Bandura Bazar- Beribadh)

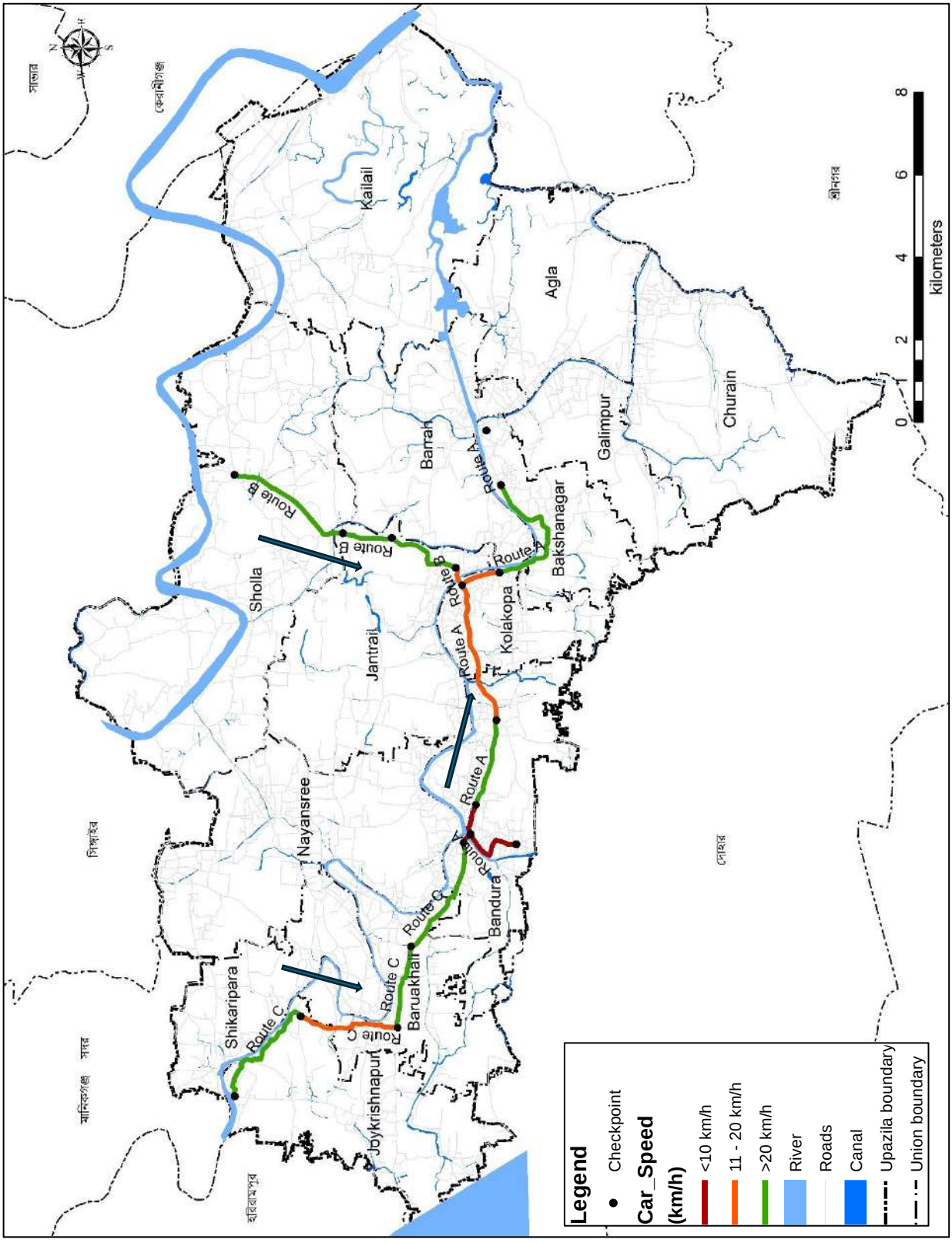

Figure 3-65: Travel speed by car on Route A (Hashnabad-> Komorganj hat), Roue B (Sholla Hospital -> Muktijoddha Chattar) and Route C (Beribadh- Puraton Bandura Bazar)

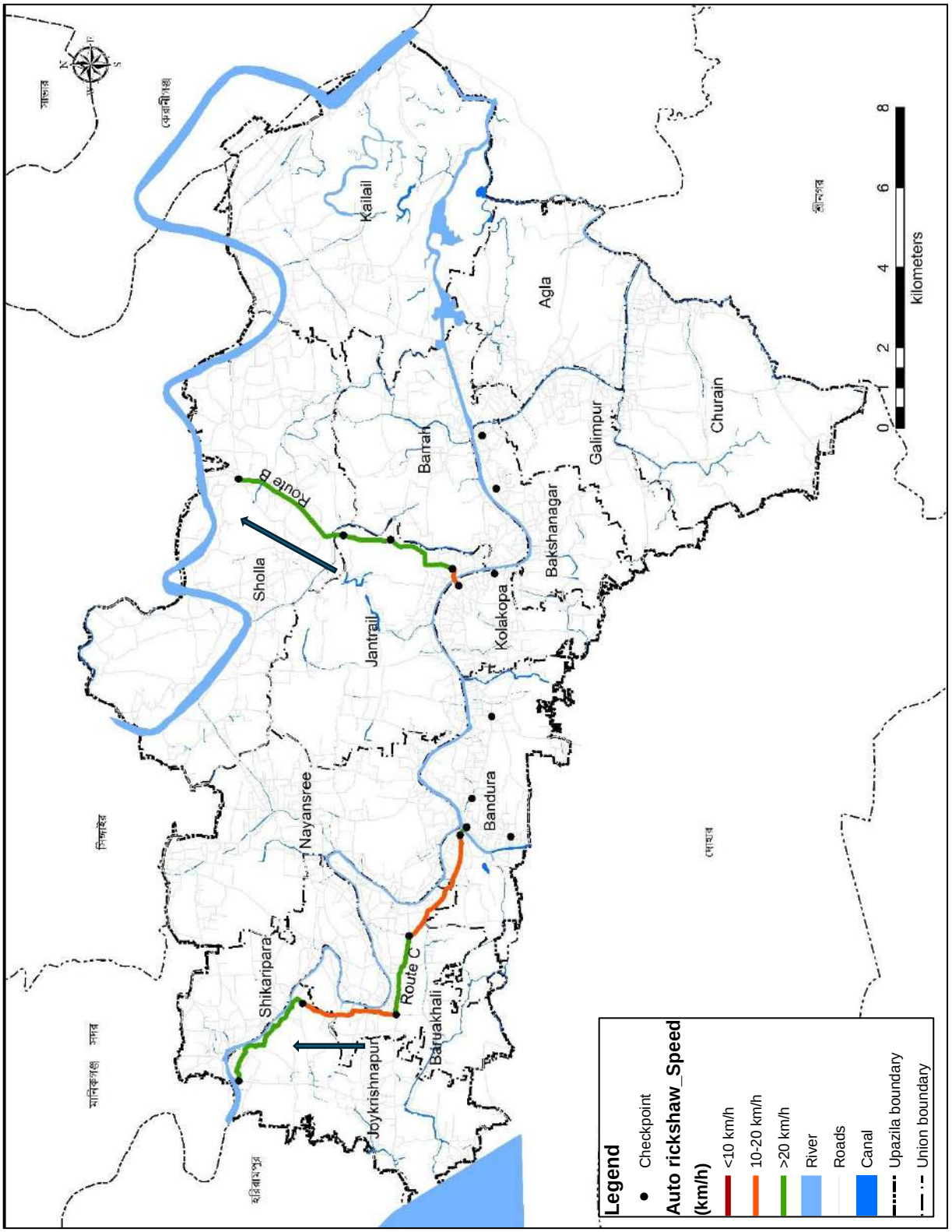

Figure 3-66: Travel speed by auto rickshaw on Roue B (Muktijoddha Chattar -> Sholla Hospital) and Route C (Puraton Bandura Bazar- Beribadh)

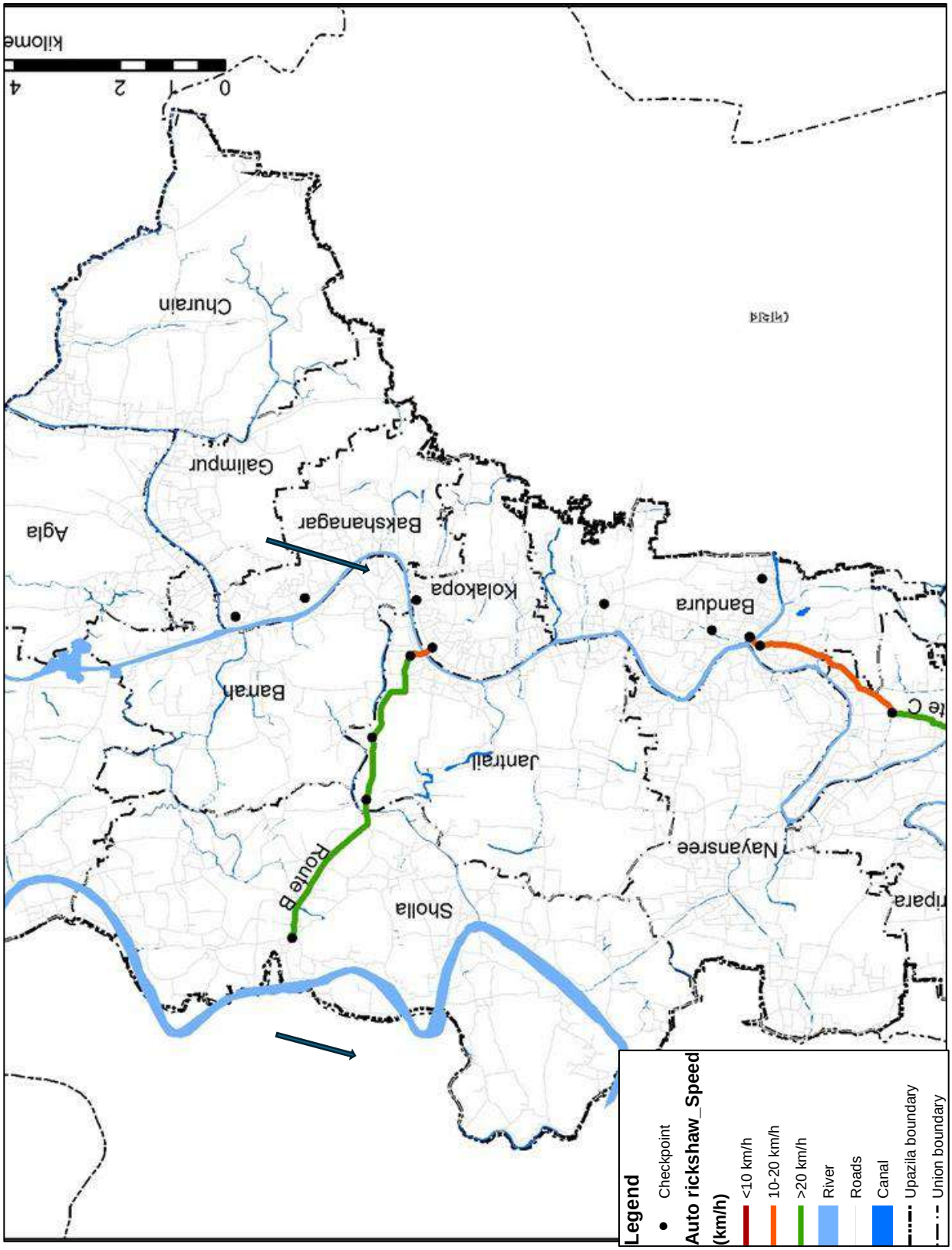

Figure 3-67: Travel speed by auto rickshaw on Roue B (Sholla Hospital -> Muktijoddha Chattar) and Route C (Beribadh- Puraton Bandura Bazar)

Appendix I
Survey Questionnaire

স্থানীয় সরকার প্রকৌশল অধিদপ্তর (এলজিইডি)

UTMIDP/UMPR-২

নবাবগঞ্জ উপাজেলা মাস্টার প্ল্যান পর্যালোচনা ও হালনাগাদকরণ

আনুষ্ঠানিক অর্থনৈতিক কর্মকান্ড জরিপ প্রশ্নমালা ২০২৩

(শিল্পকারখানা)

প্রশ্নমালা নংঃ..... জরিপের তারিখ .....
সময়ঃ.....

সাক্ষাৎকার প্রদানকারীর নাম..... স্বাক্ষর.....
ঠিকানাঃ.....

তথ্য সংগ্রহকারী ----------
তারিখ: ----------

তথ্য নিরীক্ষক----------
তারিখ: ----------

সকল তথ্য নেয়া হয়েছে ☐ হ্যাঁ ☐ না

১. শিল্পকারখানা (বৃহৎ, ক্ষুদ্র, মাঝারি, কুটির)

১. শিল্পকারখান/ প্রতিষ্ঠানের নাম
……
……

১.২ শিল্পকারখান/ প্রতিষ্ঠানের ঠিকানা
……
……

১.৩ মালিকানার ধরণ

☐ ব্যক্তিগত মালিকানা ☐ লিমিটেড কোম্পানি ☐ অংশীদারি প্রতিষ্ঠান

১.৪ মালিক/ ব্যবস্থাপনা পরিচালক /ব্যবস্থাপনা অংশীদারের নাম
……

১.৫ প্রতিষ্ঠানের ধরণ

⬚ নির্মাণ সামগ্রী	⬚ দোকান	⬚ বীমা	⬚ সিরামিক পণ্য উৎপাদন কারখানা
⬚ মৎস্য প্রক্রিয়াজাতকরণ	⬚ বরফ/ আইসক্রিম কারখানা	⬚ লন্ড্রি	⬚ রাসায়নিক দ্রব্যাদি
⬚ তামাক প্রক্রিয়াজাতকরণ	⬚ পোল্ট্রি	⬚ মৎস্য খামার	⬚ ছাপাখানা
⬚ কুটির শিল্প	⬚ ভোজ্য তেল কল	⬚ ডাল মিল	⬚ করাত কল
⬚ ইট ভাটা	⬚ ট্রেডিং হাউস	⬚ দুগ্ধ প্রক্রিয়াকরণ	⬚ রাইস মিল
⬚ খাদ্য প্রক্রিয়াজাতকরণ	⬚ যন্ত্রপাতি বিপণন	⬚ মেটাল প্রোডাক্ট	⬚ আটা/ ময়দা মিল
⬚ কাষ্ঠজাত দ্রব্য	⬚ ঔষধ শিল্প	⬚ প্লাস্টিক শিল্প	⬚ কোল্ড স্টোরেজ
⬚হস্ত শিল্প	⬚ ব্যাংক	⬚ সিলিন্ডার গ্যাস বিপণন	⬚ সিমেন্ট কারখানা
⬚সুতা ও বস্ত্র শিল্প	⬚ সার কারখানা	⬚ তৈরি পোশাক/ টেক্সটাইল	⬚ অটোমোবাইল
⬚ চামড়া/ চামড়াজাতপণ্য	⬚ আসবাবপত্র	⬚ অন্যান্য (উল্লেখ করুন)	

১.৬ প্রতিষ্ঠানের আয়তন..... একর

১.৭ শিল্পকারখান/ প্রতিষ্ঠানের মাসিক আয় কত টাকা?

⬚ <১০০০০ ⬚ ১০০০০-২০০০০ ⬚ ২০০০০-৪০০০০ ⬚ >৪০০০০

১.৮ প্রতিষ্ঠানের মূলধন .....(টাকা)

১.৮.১ মূলধন এর উৎস

⬚ ব্যক্তিগত সঞ্চয় ⬚ পারিবারিক সঞ্চয় ⬚ ব্যাংক ঋণ ⬚ আত্মীয় স্বজন থেকে প্রাপ্ত ঋণ ⬚ প্রবাসী থেকে প্রাপ্ত আয়

⬚ স্থানীয় মহাজন থেকে প্রাপ্ত ⬚ সমবায় প্রতিষ্ঠান ⬚ সম্পদ বিক্রি

১.৯ জনবলের সংখ্যা

১.৯.১ সর্বমোট সংখ্যা ..... পুরুষ ..... মহিলা .....

১.৯.২ প্রশাসনিক কর্মকর্তা ও কর্মচারীর সংখ্যা .....

১.৯.৩ শ্রমিক ও অনান্য কর্মচারীর সংখ্যা .....

১.১০ কাঁচামাল সংক্রান্ত তথ্য

১.১০.১ ব্যবহৃত কাঁচামাল.....

১.১০.২ কাঁচামালসমূহের উৎস

কাঁচামালের উৎস	পরিমানের %	দেশ/স্থানের নাম
উপজেলার ভিতর		
উপজেলার বাইরে		
আমদানিকৃত		

১.১১ উৎপাদিত পণ্য

১.১১.১ উৎপাদিত পণ্য এর প্রকার

⬚ ইট	⬚ প্রক্রিয়াজাতকরণকৃত মাছ	⬚ দুধ ও দুগ্ধ জাতীয় খাবার	⬚ গহস্থালির পণ্য সামগ্রী
⬚ ভোজ্য তেল	⬚ ডিম/পোল্ট্রি	⬚ প্যাকেটজাত খাবার	⬚ তামাকজাত দ্রব্য
⬚ আসবাবপত্র	⬚ পোশাক	⬚ সার	⬚ চামড়াজাত পণ্য
⬚ কাচ/ টাইলস/রিং স্লাব	⬚ কাষ্ঠজাত দ্রব্য	⬚প্লাস্টিক পণ্য	⬚ পাইপ/ পানির পাম্প
⬚ রাসায়নিক দ্রব্যাদি	⬚ হস্তশিল্প পণ্য	⬚ বরফ/আইসক্রিম	⬚ কৃষি যন্ত্রপাতি
⬚ আটা/ ময়দা	⬚ সিমেন্ট	⬚ সিরামিকের তৈজসপত্র	⬚ ঔষধ
⬚ কৃষিজাত পণ্য	⬚ ধাতব পাত্র	⬚ সুতা ও বস্ত্র	⬚ অন্যান্য (উল্লেখ করুন)

১.১১.২ উৎপাদিত পণ্য বাজারজাত করণ

বিবরণ	পরিমান (%)
স্থানীয় উপজেলা বাজার	
নিকটবর্তী উপজেলা বাজার	
জেলা বাজার	
জাতীয় বাজার (বিভাগীয়)	
সরাসরি রপ্তানি (বিদেশ)	

১.১২ কাঁচামাল ও উৎপাদিত পণ্য বাজারজাতকরণে ব্যবহৃত পরিবহন

১.১২.১ ব্যবহৃত মাধ্যম

⬚ সড়কপথ ⬚ রেলপথ ⬚ নৌ-পথ ⬚ বিমান-পথ

১.১২.২ সড়কপথের বাহন

⬚ বাস ⬚ ট্রাক ⬚ পিকআপ ⬚ মাইক্রোবাস ⬚ মটরসাইকেল ⬚ কার

⬚ অটো ⬚ রিক্সা ⬚ ভ্যান ⬚ বাইসাইকেল ⬚ অন্যান্য (উল্লেখ করুন)

১.১৩ ইউটিলিটি সংক্রান্ত তথ্য

১.১৩.১ উৎপাদন খাতে ব্যবহৃত পানির উৎস কি?

⬚ ভূগর্ভস্থ পানি ⬚ নদীর/খালের পানি

১.১৩.২ উৎপাদন খাতে প্রতিদিন কি পরিমান পানি ব্যবহৃত হয়? .....লিটার/ ঘনমিটার /গ্যালন

১.১৩.৩ প্রতি মাসে কি পরিমান বিদ্যুৎ ব্যবহৃত হয়? .....ওয়াট

১.১৩.৪ উৎপাদন খাতে সৌর বিদ্যুৎ ব্যবহার হয় কি?

☐ হ্যাঁ ☐ না

যদি সৌর বিদ্যুৎ ব্যবহৃত হয়, সেক্ষেত্রে মোট চাহিদার কতো শতাংশ পূরণ করে ?.....

১.১৪ বর্জ্য ব্যবস্থাপনা

১.১৪.১ দৈনিক কঠিন বর্জ্য উৎপাদনের পরিমাণ ..... টন

১.১৪.১ দৈনিক তরল বর্জ্য উৎপাদনের পরিমাণ ..... ঘনমিটার

১.১৪.২ বর্জ্য অপসারণঃ

☐ পরিশোধিত ☐ অপরিশোধিত

১.১৪.৩ কঠিন বর্জ্য অপসারণের স্থান

☐ রাস্তার পাশে ☐ খোলা মাঠ ☐ খাল ☐ নদী ☐ কৃষি জমি ☐ বর্জ্য ডাম্পিং স্থান ☐ অন্যান্য (উল্লেখ করুন)

১.১৪.৪ কঠিন বর্জ্য অপসারণ স্থানের মালিকানা

☐ নিজস্ব ডাম্পিং গ্রাউন্ড ☐ সরকারি স্থান ☐ বেসরকারি মালিকানাধীন জায়গা ☐ অন্যান্য (উল্লেখ করুন)

১.১৪.৫ তরল বর্জ্য পরিশোধন ব্যবস্থা আছে কি না?

☐ হ্যাঁ ☐ না

১.১৪.৬ তরল বর্জ্য অপসারণের স্থান

☐ খাল ☐ নদী ☐ জলাভূমি ☐ ডোবা ☐ পুকুর

১.১৫ প্রতিষ্ঠান থেকে সৃষ্ট পরিবেশ দূষণ রোধের ব্যবস্থার বিবরণঃ

.....
....

১.১৬ আই.ই.ই (ইনিসিয়াল এনভায়রনমেন্টাল এক্সামিনেশন)/ ই.আই.এ (এনভায়রনমেন্টাল ইমপ্যাক্ট এসেসমেন্ট) করেছেন কি না?

☐ হ্যাঁ ☐ না

১.১৭ প্রতিষ্ঠানের জনবলের পেশাগত প্রশিক্ষণের ব্যবস্থা আছে কি?

☐ হ্যাঁ ☐ না

১.১৭.১ থাকলে প্রশিক্ষণের ধরন?

☐ সরকারি প্রতিষ্ঠানে শিক্ষানবিস ☐ বেসরকারি প্রতিষ্ঠানে শিক্ষানবিস ☐ এন. জি .ও ☐ সংশিষ্ট পেশার প্রশিক্ষণ কেন্দ্র ☐ কোম্পানির খরচে বৈদেশিক প্রশিক্ষণ

১.১৮ প্রতিষ্ঠানের শ্রমিক-কর্মচারীদের স্বাস্থ্য পরীক্ষার ব্যবস্থা আছে কি?

☐ হ্যাঁ ☐ না

১.১৮.১ স্বাস্থ্য পরীক্ষার ব্যবস্থা থাকলে কি ধরনের স্বাস্থ্য পরীক্ষার ব্যবস্থা?

☐ নিজস্ব ডাক্তার প্রতিদিন নির্দিষ্ট সময়ে প্রতিষ্ঠানের স্বাস্থ্য সেবায় নিয়োজিত ☐ ডাক্তারের নিজস্ব চেম্বারে দেখেন

☐ প্রতিষ্ঠানের ভেতর ছোট হাসপাতাল আছে ☐ স্বাস্থ্য সেবার জন্য আলাদা আর্থিক ভাতা পান

১.১৯ শিল্প কারখানার পরিবেশ বিষয়ক ছাড়পত্র আছে কিনা (বিবরণসহ)

……
……

১.২০ কর্মকর্তা/কর্মচারীদের বাসস্থান সম্পর্কিত তথ্য

☐ শিল্প প্রতিষ্ঠানের নিজস্ব আবাসন ☐ নিজস্ব বাসস্থান ☐ বাড়িভাড়া

১.২০.১ প্রতিষ্ঠানের নিজস্ব স্টাফ কোয়ার্টার আছে কী?

☐ হ্যাঁ ☐ না

১.২১ প্রতিষ্ঠানে উৎপাদিত পণ্যের পরিমাণ (বাৎসরিক)

.....পিস ..... টন ..... গজ/মিটার

১.২২ উৎপাদিত পণ্যের মূল্য (বাৎসরিক) …… টাকা

১.২৩ শিল্পকারখানার সমস্যা :

১.২৩.১ শিল্পকারখানাতে কোন ধরণের সমস্যা বেশি দেখা যায়?

☐ অবকাঠামোগত সমস্যা ☐ উৎপাদনগত সমস্যা ☐ বাজারজাতকরণ সমস্যা ☐ বিনিয়োগের পরিবেশগত সমস্যা ☐ আমলাতান্ত্রিক জটিলতা ☐ জ্বালানি সংকট

১.২৩.২ কোন ধরণের অবকাঠামোগত সমস্যা বেশি দেখা যায়?

☐ অপ্রতুল যোগাযোগ ব্যবস্থা ☐ কাঁচামাল সরবরাহে সমস্যা ☐ বিদ্যুতের অপর্যাপ্ততা ☐ বর্জ্য অপসারণ সমস্যা

১.২৩.৩ কোন ধরণের উৎপাদনগত সমস্যা বেশি দেখা যায়?

☐ ত্রুটিপূর্ণ যন্ত্রাদি ☐ জ্বালানি সংকট ☐ দক্ষ শ্রমিকের অভাব ☐ প্রয়োজনীয় মূলধনের অভাব ☐ শ্রমিক অসন্তোষ

১.২৩.৪ কোন ধরণের বাজারজাতকরণ সমস্যা বেশি দেখা যায়?

☐ যানবাহনের অভাব ☐ অপর্যাপ্ত বাজার ☐ পর্যাপ্ত ক্রেতার অভাব

১.২৩.৫ কোন ধরণের বিনিয়োগের পরিবেশগত সমস্যা বেশি দেখা যায়?

☐ প্রয়োজনীয় মূলধনের অভাব ☐ অযৌক্তিক কর বসানো ☐সামাজিক/রাজনৈতিক অস্থিরতা ☐ ব্যাংক থেকে ঋণ পাওয়ায় সমস্যা

১.২৩.৬ কোন ধরণের সমস্যা বেশি দেখা যায়?

☐ চাঁদাবাজি ☐ দূর্নীতি ☐সিন্ডিকেট ☐ দালাল/ মধ্যস্ততা

১.২৪ উল্লিখিত সমস্যা সমাধানের পরামর্শ থাকলে তার বিবরণ……

১.২৫ উপজেলার সম্ভাবনাময় খাতসমূহ কী কী?

১.২৬ ভবিষ্যৎ সম্ভাবনা এর জন্য করনীয় কি/ কি কি প্রস্তাব গ্রহণ করতে হবে?

তথ্য প্রদানের জন্য ধন্যবাদ

স্থানীয় সরকার প্রকৌশল অধিদপ্তর (এলজিইডি)

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নবাবগঞ্জ উপাজেলা মাস্টার প্ল্যান পর্যালোচনা ও হালনাগাদকরণ

অনানুষ্ঠানিক অর্থনৈতিক কর্মকাণ্ড জরিপ প্রশ্নমালা ২০২৩

প্রশ্নমালা নংঃ..... জরিপের তারিখ .....
সময়ঃ.....

সাক্ষাৎকার প্রদানকারীর নাম..... স্বাক্ষর.....

ঠিকানাঃ.....

তথ্য সংগ্রহকারী ---------- তারিখ:----------

তথ্য নিরীক্ষক---------- তারিখ: ----------

সকল তথ্য নেয়া হয়েছে ⬚ হ্যাঁ ⬚ না

১। অনানুষ্ঠানিক কার্যক্রমের ধরণ?

⬚ অনানুষ্ঠানিক স্ব-নিযুক্ত ⬚ পরিবারের বিভিন্ন কাজে জড়িত ⬚ বেসরকারি অনিবন্ধিত প্রতিষ্ঠান

⬚ নিজস্ব-ব্যবহারের জন্য পণ্য উৎপাদনকারী নিজস্ব কর্মী

2। কোন ধরণের অনানুষ্ঠানিক পেশার সাথে জড়িত?

⬚ হকার	⬚ **বর্জ্য সংগ্রহকারী**
⬚ ক্ষুদ্র কৃষিপণ্য উৎপাদনকারী	⬚ রাস্তার পাশের খাদ্য বিক্রেতা
⬚ পারিবারিক ব্যবসা	⬚ অনানুষ্ঠানিক শ্রমিক
⬚ অনিবন্ধিত মাইক্রো এন্টারপ্রাইজ/ ছোট ব্যবসা	⬚ গৃহকর্মী
⬚ অনানুষ্ঠানিক অর্থ ঋণদাতা	⬚ দিনমজুর (কৃষি)
⬚ বাড়িতে তৈরি এবং কারুশিল্প পণ্য বিক্রেতা	⬚ দিনমজুর (অকৃষি)

⬚ ফ্রিল্যান্সার	⬚ অন্যান্য (উল্লেখ করুন)
⬚ নির্মাণ শ্রমিক	

৩। উত্তরদাতার লিঙ্গ ⬚ পুরুষ ⬚ মহিলা ⬚ হিজড়া

৪। উত্তরদাতার বয়স ⬚ 0-14 ⬚ ১৫-24 ⬚ ২5-34 ⬚ 35-44 ⬚ 45-54 ⬚ 55-64 ⬚ ৬৫+

৫। শিক্ষাগত যোগ্যতাঃ ⬚ নিরক্ষর ⬚ প্রাথমিক/সমমান ⬚ ৮ম গ্রেড/ সমমান ⬚ এসএসসি/ সমমান ⬚এইচএসসি/ সমমান ⬚ স্নাতক/ সমমান এবং তদূর্ধ্ব

৬। অনানুষ্ঠানিক কাজটি কোন খাতের সাথে জড়িত?

⬚ কৃষি ⬚ সেবা ⬚শিল্প

৭। অভিগমনের কারন

⬚ কর্মস্থল ⬚ বেকারত্ব/ দারিদ্র্য ⬚ বৈবাহিক কারন ⬚ সামাজিক অস্থিরতা ⬚ ব্যবসা ⬚ নদী ভাঙন ⬚ অন্যান্য (উল্লেখ করুন)

৮। অনানুষ্ঠানিক কার্যক্রম কোথায় পরিচালিত হয়?

⬚ উদ্যোক্তার বাড়ি থেকে ⬚ বাজারের স্টল থেকে ⬚ অস্থায়ী অবস্থান থেকে ⬚ রাস্তায়

৯। আপনার অনানুষ্ঠানিক কর্মে নিচের কোনটি বেশি দেখা যায়?

⬚ সামাজিক নিরাপত্তা ব্যবস্থার অভাব ⬚ বার্ষিক বা অসুস্থতা ছুটির প্রাপ্যতার অভাব ⬚ লিখিত নিয়োগ চুক্তির অভাব

⬚ নৈমিত্তিক/ অস্থায়ী প্রকৃতির কাজ

১০ বর্তমান পেশার ধরণ

.....

১০.১ কত বছর/ সময় এই পেশার সাথে যুক্ত?

১১। আপনি কি প্রশিক্ষণ প্রাপ্ত?

⬚ হ্যাঁ ⬚ না

১২। পূর্বের পেশার ধরণ

.....

১২.১ পূর্বের পেশা পরিবর্তনের কারন?

⬚ আর্থিক ক্ষতি ⬚ আরও লাভের আকাঙ্ক্ষা ⬚ দুর্ঘটনা-সম্পর্কিত পরিবর্তন ⬚ সুবিধাবঞ্চিত অবস্থা

১৩। ভবিষ্যতে কোন পেশায় যেতে চান?

১৪। স্বনিয়োজিত পেশা হলে মূলধনের পরিমাণ (টাকা) .....

১৪.১ মূলধনের উৎস?

⬚ উত্তরাধিকার সূত্রে ⬚ যৌতুক ⬚ নিজ পরিবার/ আত্মীয়স্বজন ⬚ বিনিয়গকারি ⬚ ঋণ ⬚ নিজেদের সমবায়

১৫। ভোক্তা শ্রেণী?

⬚ উচ্চবিত্ত ⬚ মধ্যবিত্ত ⬚ নিম্নবিত্ত ⬚ নির্দিষ্ট নয়

১৬। কর্মকাণ্ডের ধরণ

⬚ অস্থায়ী ⬚মৌসুমী ⬚অনিয়মিত

১৭। কর্মকাণ্ডের কাল :

⬚ মৌসুমি ⬚ সারা বছর.

১৭.১ মৌসুমি হলে কোন মৌসুম .....

১৭.২ কর্ম মৌসুমের ব্যাপ্তিকাল .....

১৮।।আপনার অর্থনৈতিক কর্মকাণ্ড পরিচালনার স্থান :
.....

১৮.১ আপনার অর্থনৈতিক কর্মকাণ্ড এর অবস্থানের ধরণ?

⬚ স্থায়ী ⬚ অস্থায়ী ⬚ যানবাহনে ভ্রাম্যমান ⬚ হেডলোডে ভ্রাম্যমান

১৯। দোকানের মালিকানা :

⬚ নিজস্ব ⬚ ভাড়া

২০। আপনার কি কোন ঋণ আছে?

⬚ হ্যাঁ ⬚ না

২০.১ হ্যাঁ হলে ঋণের উৎস :

⬚ সরকারি ব্যাংক ⬚ বেসরকারি ব্যাংক ⬚ সমবায় সমিতি ⬚ মহাজন ⬚ আত্মীয়স্বজন/ বন্ধু ⬚ এনজিও

২০.২ ঋণ থাকলে টাকার পরিমাণ? .....

২০.৩ ঋণ নেয়ার উদ্দেশ্য

⬚ ব্যবসা ⬚ আসবাব পত্র ক্রয় ⬚ ঘরবাড়ি মেরামত ⬚ বিবাহ ⬚ গবাদি পশু ক্রয় ⬚ চিকিৎসা ⬚ জমি ক্রয়

২১। মোট মাসিক আয় কত টাকা?

⬚ <১০০০০ ⬚ ১০০০০-২০০০০ ⬚ ২০০০০-৪০০০০ ⬚ >৪০০০০

২২। মোট মাসিক ব্যয় (টাকা) : ..... ২২.২ খাদ্য সামগ্রী বাবদ (টাকা) : ..... ১৩. অন্যান্য : .....

২৩। বাসস্থানের মালিকানা:

⬚ নিজস্ব ⬚ ভাড়াটে

২৩.১ ভাড়াটে হলে মাসিক ভাড়া (টাকা) : .....

২৪। কর্মক্ষেত্রে আপনি কি ধরণের সমস্যার মুখোমুখি হন?

⬚অবকাঠামোগত সমস্যা ⬚ বিরুপ আবহাওয়া ⬚ উচ্ছেদ আতঙ্ক ⬚ চাঁদাবাজি ⬚পুলিশের হয়রানি

⬚ ব্যবসায়িক মন্দা

২৪.১। সমস্যা সমাধানের জন্য কি করা যেতে পারে? .....

২৫। কোন ধরণের আর্থ-সামাজিক উন্নয়ন চান?

⬚ বাসস্থান নিরাপত্তা ⬚ স্বাস্থ্য নিরাপত্তা ⬚ পর্যাপ্ত ঋণ নেয়ার সুযোগ ⬚ কর্মসংস্থানের সুযোগ

২৬। ভবিষ্যৎ পরিকল্পনা : .....

তথ্য প্রদানের জন্য ধন্যবাদ

স্থানীয় সরকার প্রকৌশল অধিদপ্তর (এলজিইডি)

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নবাবগঞ্জ উপাজেলা মাস্টার প্ল্যান পর্যালোচনা ও হালনাগাদকরণ

আনুষ্ঠানিক অর্থনৈতিক কর্মকাণ্ড জরিপ প্রশ্নমালা ২০২৩

(মার্কেট প্লেস/কাঁচাবাজার/হাট)

প্রশ্নমালা নংঃ ..... জরিপের তারিখঃ .....

সময়ঃ.....

.....

সুপারভাইজারের স্বাক্ষর

সাক্ষাৎকার গ্রহণকারীর নাম ঃ ..... সাক্ষাৎকার গ্রহণকারীর স্বাক্ষর ঃ .....

১. মার্কেট/কাঁচাবাজার/হাট

১.১ মার্কেট/হাট/বাজারের নামঃ .....

১.২ এই মার্কেট/হাট/বাজার কোন সংস্থার কর্তৃত্বাধীন?

. অন্যান্য .....

১. ব্যক্তি মালিকানাধীন	২. উপজেলা পরিষদ	৩. স্থানীয় সরকার প্রকৌশল বিভাগ	
৪ সমবায় সমিতি	. জেলা পরিষদ	সরকারী প্রতিষ্ঠান	

১.৩ মার্কেট/হাট/বাজার কিভাবে পরিচালিত হয়?

১. সমিতির মাধ্যমে	২. উপজেলা পরিষদ কর্তৃক সরাসরি	৩. ইজারাদার কর্তৃক
৪. মালিক কর্তৃক	৫. সিটি কর্পোরেশন কর্তৃক সরাসরি	৬. অন্যান্য .....

১.৪ ইজারাদার দ্বারা পরিচালিত হলে বর্তমান অর্থ বছরে ইজারার পরিমাণঃ..... টাঃ

১.৫ মার্কেট/হাট/বাজারের আয়তন ঃ ..... একর/বিঘা

১.৬ মার্কেট/হাট/বাজারে কত সংখ্যক দোকান আছে? .....

১.৭ কত ধরনের ব্যবসা হয় এই মার্কেট/বাজার বা হাটে? (সম্ভব হলে পাশে দোকানের সংখ্যা লিখুন)

	মুদি দোকান		ক্রোকারি সামগ্রী		মাংস বিক্রির দোকান
	ষ্টেশনারি দোকান		হাঁড়ি-পাতিলের দোকান		গরম্ন/ছাগলের হাট
	কনফেকসনারি দোকান		সেলুন		পস্নাস্টিক আসবাব ও সামগ্রী
	মোবাইল বিক্রয় ও মেরামত		সব্জির বাজার		মাইক ভাড়া
	মোবাইল কার্ড ও ফ্লেক্সিলোড		মাছের বাজার		
	ঘড়ি ও ইলেক্ট্রনিক্স সামগ্রী		চাপকল ও এর যন্ত্রাংশ		কামারের দোকান
	জুতার দোকান		স্যালো ইঞ্জিন মেরামত		রেস্ত্মরাঁ
	তৈরি পোষাকের দোকান		হার্ডওয়্যার সামগ্রী		পাইপের দোকান
	কাপড়ের দোকান		স্যানিটারি সামগ্রী		নির্মাণ সামগ্রী
	দর্জি দোকান		মটর সাইকেল মেরামত		স্বর্ণের দোকান
	সিমেন্ট		রড		অন্যান্য .....

১.৭ (ক) হাট বসার ধরন

১. দৈনিক	২. সাপ্তাহিক	৩. সপ্তাহে দুই/তিন দিন

১.৭ (খ) বাজার বসার ধরন

১. দৈনিক	২. সকাল	৩. সান্ধ্য

এই মার্কেট/হাট/বাজার এর বিদ্যুৎ সরবরাহঃ ☐ আছে ☐ নাই

১.১১ (ঘ) এই মার্কেট/হাট/বাজার এর খাবার পানি সরবরাহ কিভাবে বর্জ্য অপসারিত হয়

১. টিউবওয়েল	২. পুকুর	৩. সিটি কর্পোরেশনের পাইপ লাইন	৪. সরবরাহ নাই

১.৭ (ঙ) এই মার্কেট/হাট/বাজার এর গণ শৌচাগার ব্যবস্থা

১. স্যানিটারী টয়লেট	২. পিট ল্যাট্রিন	৩. ব্যবস্থা নাই

১.৮ এই মার্কেটে মাসিক লেন-দেনের পরিমাণ? .....
১.৯ মাসে কি পরিমাণ ভাড়া বা টোল আদায় হয়? .....

১.১০ বর্জ্য অপসারণের দায়িত্ব কার?

১.৭ (গ)

১.ইজারাদার	২. দোকানদার মালিক সমিতি	৩. সিটি কর্পোরেশন	৪. মার্কেট/হাট/ বাজার কমিটি
৫. দোকানের মালিক	৬. বেসরকারি সাহায্য সংস্থা	৭. জেলা পরিষদ	৮. অন্যান্য ঃ .....

১. নিজস্ব লোক দ্বারা	২. নিজস্ব ভ্যানে করে	৩. কমিউনিটি ভ্যানে করে

৪. বেসরকারি সংস্থার ভ্যানে করে	৫. বেসরকারি সংস্থার ট্রাকে করে	৬. সিটি কর্পোরেশনের গাড়িতে
৭. বর্জ অপসারণের ব্যবস্থা নেই	৮. অন্যান্য ঃ	

১.১২ কোথায় বর্জ্য ফেলা হয়

১. নিকটস্থ ডাষ্টবিনে	২. বর্জ্য ফেলার নির্দিষ্ট স্থানে	৩. রাস্তার পার্শ্বে	৪. নিচু/পতিত জমিতে
৫. নদীতে বা খালে	৬. অন্যান্য ঃ		

১.১৩ মার্কেট/হাট বাজারে/যাতায়াতের ব্যবস্থা

১. রাস্তা	২. নৌ পথ	৩. রাস্তা নেই	৪. অন্যান্য ঃ .....

১.১৪ আপনার প্রতিষ্ঠানের নিম্নবর্ণিত প্রতিবেদন থাকলে সরবরাহ করার অনুরোধ করা হলো ঃ

- বাৎসরিক প্রতিবেদন
- মার্কেটের লে আউটপস্ন্যান
- পরিবেশ সংক্রান্ত প্রতিবেদন
- প্রতিষ্ঠান পরিচালনার বাজেট
- প্রতিষ্ঠানের উন্নয়ন, ট্রেনিং বা কর্মকর্তা কর্মচাররিদের গুণগত মান উন্নয়নের জন্য নীতিমালা
- ভূমি উন্নয়ন, পানি নিষ্কাশন, পয়নিষ্কাশন, পরিবহন সংক্রান্ত প্রতিবেদন

১.১৫ পরিচালনা কমিটি/সমিতির বক্তব্য

১.১৫.১ মার্কেট/হাট-বাজার ব্যস্থাপনায় কোন সমস্যা থাকলে উলেস্নখ করস্নন ঃ

.....

১.১৫.২ সমস্যা উত্তরণের সম্ভাব্য সমাধান বা দিক নির্দেশনামূলক কিছু বলুন ঃ

.....

তথ্য প্রদানের জন্য ধন্যবাদ

Appendix II

স্থানীয় সরকার প্রকৌশল অধিদপ্তর (এলজিইডি)

UTMIDP/UMPR-২

নবাবগঞ্জ উপাজেলা মাস্টার প্ল্যান পর্যালোচনা ও হালনাগাদকরণ

আনুষ্ঠানিক অর্থনৈতিক কর্মকান্ড জরিপ প্রশ্নমালা ২০২৩

(শিল্পকারখানা)

প্রশ্নমালা নংঃ..... জরিপের তারিখ .....
সময়ঃ.....

সাক্ষাৎকার প্রদানকারীর নাম..... স্বাক্ষর.....
ঠিকানাঃ.....

তথ্য সংগ্রহকারী ----------
তারিখ: ----------

তথ্য নিরীক্ষক----------
তারিখ: ----------

সকল তথ্য নেয়া হয়েছে ☐ হ্যাঁ ☐ না

১। শিল্পকারখানা (বৃহৎ, ক্ষুদ্র, মাঝারি, কুটির)

১। শিল্পকারখান/ প্রতিষ্ঠানের নাম
……
……

১.২ শিল্পকারখান/ প্রতিষ্ঠানের ঠিকানা
……
……

১.৩ মালিকানার ধরণ

☐ ব্যক্তিগত মালিকানা ☐ লিমিটেড কোম্পানি ☐ অংশীদারি প্রতিষ্ঠান

১.৪ মালিক/ ব্যবস্থাপনা পরিচালক /ব্যবস্থাপনা অংশীদারের নাম
……

১.৫ প্রতিষ্ঠানের ধরণ

☐ নির্মাণ সামগ্রী	☐ দোকান	☐ বীমা	☐ সিরামিক পণ্য উৎপাদন কারখানা

⬚ মৎস্য প্রক্রিয়াজাতকরণ	⬚ বরফ/ আইসক্রিম কারখানা	⬚ লন্ড্রি	⬚ রাসায়নিক দ্রব্যাদি
⬚ তামাক প্রক্রিয়াজাতকরণ	⬚ পোল্ট্রি	⬚ মৎস্য খামার	⬚ ছাপাখানা
⬚ কুটির শিল্প	⬚ ভোজ্য তেল কল	⬚ ডাল মিল	⬚ করাত কল
⬚ ইট ভাটা	⬚ ট্রেডিং হাউস	⬚ দুগ্ধ প্রক্রিয়াকরণ	⬚ রাইস মিল
⬚ খাদ্য প্রক্রিয়াজাতকরণ	⬚ যন্ত্রপাতি বিপণন	⬚ মেটাল প্রোডাক্ট	⬚ আটা/ ময়দা মিল
⬚ কাষ্ঠজাত দ্রব্য	⬚ ঔষধ শিল্প	⬚ প্লাস্টিক শিল্প	⬚ কোল্ড স্টোরেজ
⬚হস্ত শিল্প	⬚ ব্যাংক	⬚ সিলিন্ডার গ্যাস বিপণন	⬚ সিমেন্ট কারখানা
⬚সুতা ও বস্ত্র শিল্প	⬚ সার কারখানা	⬚ তৈরি পোশাক/ টেক্সটাইল	⬚ অটোমোবাইল
⬚ চামড়া/ চামড়াজাতপণ্য	⬚ আসবাবপত্র	⬚ অন্যান্য (উল্লেখ করুন)	

১.৬ প্রতিষ্ঠানের আয়তন..... একর

১.৭ শিল্পকারখান/ প্রতিষ্ঠানের মাসিক আয় কত টাকা?

⬚ <১০০০০ ⬚ ১০০০০-২০০০০ ⬚ ২০০০০-৪০০০০ ⬚ >৪০০০০

১.৮ প্রতিষ্ঠানের মূলধন .....(টাকা)

১.৮.১ মূলধন এর উৎস

⬚ ব্যক্তিগত সঞ্চয় ⬚ পারিবারিক সঞ্চয় ⬚ ব্যাংক ঋণ ⬚ আত্মীয় স্বজন থেকে প্রাপ্ত ঋণ ⬚ প্রবাসী থেকে প্রাপ্ত আয়

⬚ স্থানীয় মহাজন থেকে প্রাপ্ত ⬚ সমবায় প্রতিষ্ঠান ⬚ সম্পদ বিক্রি

১.৯ জনবলের সংখ্যা

১.৯.১ সর্বমোট সংখ্যা ..... পুরুষ ..... মহিলা .....

১.৯.২ প্রশাসনিক কর্মকর্তা ও কর্মচারীর সংখ্যা .....

১.৯.৩ শ্রমিক ও অনান্য কর্মচারীর সংখ্যা .....

১.১০ কাঁচামাল সংক্রান্ত তথ্য

১.১০.১ ব্যবহৃত কাঁচামাল.....

১.১০.২ কাঁচামালসমূহের উৎস

কাঁচামালের উৎস	পরিমানের %	দেশ/স্থানের নাম
উপজেলার ভিতর		
উপজেলার বাইরে		
আমদানিকৃত		

১.১১ উৎপাদিত পণ্য

১.১১.১ উৎপাদিত পণ্য এর প্রকার

⬚ ইট	⬚ প্রক্রিয়াজাতকরণকৃত মাছ	⬚ দুধ ও দুগ্ধ জাতীয় খাবার	⬚ গহস্থালির পণ্য সামগ্রী
⬚ ভোজ্য তেল	⬚ ডিম/পোল্ট্রি	⬚ প্যাকেটজাত খাবার	⬚ তামাকজাত দ্রব্য
⬚ আসবাবপত্র	⬚ পোশাক	⬚ সার	⬚ চামড়াজাত পণ্য
⬚ কাচ/ টাইলস/রিং স্লাব	⬚ কাষ্ঠজাত দ্রব্য	⬚প্লাস্টিক পণ্য	⬚ পাইপ/ পানির পাম্প
⬚ রাসায়নিক দ্রব্যাদি	⬚ হস্তশিল্প পণ্য	⬚ বরফ/আইসক্রিম	⬚ কৃষি যন্ত্রপাতি
⬚ আটা/ ময়দা	⬚ সিমেন্ট	⬚ সিরামিকের তৈজসপত্র	⬚ ঔষধ
⬚ কৃষিজাত পণ্য	⬚ ধাতব পাত্র	⬚ সুতা ও বস্ত্র	⬚ অন্যান্য (উল্লেখ করুন)

১.১১.২ উৎপাদিত পণ্য বাজারজাত করণ

বিবরণ	পরিমান (%)
স্থানীয় উপজেলা বাজার	
নিকটবর্তী উপজেলা বাজার	
জেলা বাজার	
জাতীয় বাজার (বিভাগীয়)	
সরাসরি রপ্তানি (বিদেশ)	

১.১২ কাঁচামাল ও উৎপাদিত পণ্য বাজারজাতকরণে ব্যবহৃত পরিবহন

১.১২.১ ব্যবহৃত মাধ্যম

⬚ সড়কপথ ⬚ রেলপথ ⬚ নৌ-পথ ⬚ বিমান-পথ

১.১২.১ সড়কপথের বাহন

⬚ বাস ⬚ ট্রাক ⬚ পিকআপ ⬚ মাইক্রোবাস ⬚ মটরসাইকেল ⬚ কার

⬚ অটো ⬚ রিক্সা ⬚ ভ্যান ⬚ বাইসাইকেল ⬚ অন্যান্য (উল্লেখ করুন)

১.১৩ ইউটিলিটি সংক্রান্ত তথ্য

১.১৩.১ উৎপাদন খাতে ব্যবহৃত পানির উৎস কি?

⬚ ভূগর্ভস্থ পানি ⬚ নদীর/খালের পানি

১.১৩.২ উৎপাদন খাতে প্রতিদিন কি পরিমান পানি ব্যবহৃত হয়? .....লিটার/ ঘনমিটার /গ্যালন

১.১৩.৩ প্রতি মাসে কি পরিমান বিদ্যুৎ ব্যবহৃত হয়? .....ওয়াট

১.১৩.৪ উৎপাদন খাতে সৌর বিদ্যুৎ ব্যবহার হয় কি?

⬚ হ্যাঁ ⬚ না

যদি সৌর বিদ্যুৎ ব্যবহৃত হয়, সেক্ষেত্রে মোট চাহিদার কতো শতাংশ পূরণ করে ?.....

১.১৪ বর্জ্য ব্যবস্থাপনা

১.১৪.১ দৈনিক কঠিন বর্জ্য উৎপাদনের পরিমাণ ..... টন

১.১৪.২ দৈনিক তরল বর্জ্য উৎপাদনের পরিমাণ ..... ঘনমিটার

১.১৪.৩ বর্জ্য অপসারণঃ

☐ পরিশোধিত ☐ অপরিশোধিত

১.১৪.৪ কঠিন বর্জ্য অপসারণের স্থান

☐ রাস্তার পাশে ☐ খোলা মাঠ ☐ খাল ☐ নদী ☐ কৃষি জমি ☐ বর্জ্য ডাম্পিং স্থান ☐ অন্যান্য (উল্লেখ করুন)

১.১৪.৫ কঠিন বর্জ্য অপসারণ স্থানের মালিকানা

☐ নিজস্ব ডাম্পিং গ্রাউন্ড ☐ সরকারি স্থান ☐ বেসরকারি মালিকানাধীন জায়গা ☐ অন্যান্য (উল্লেখ করুন)

১.১৪.৬ তরল বর্জ্য পরিশোধন ব্যবস্থা আছে কি না?

☐ হ্যাঁ ☐ না

১.১৪.৭ তরল বর্জ্য অপসারণের স্থান

☐ খাল ☐ নদী ☐ জলাভূমি ☐ ডোবা ☐ পুকুর

১.১৫ প্রতিষ্ঠান থেকে সৃষ্ট পরিবেশ দূষণ রোধের ব্যবস্থার বিবরণঃ

.....
....

১.১৬ আই.ই.ই (ইনিসিয়াল এনভায়রনমেন্টাল এক্সামিনেশন)/ ই.আই.এ (এনভায়রনমেন্টাল ইমপ্যাক্ট এসেসমেন্ট) করেছেন কি না?

☐ হ্যাঁ ☐ না

১.১৭ প্রতিষ্ঠানের জনবলের পেশাগত প্রশিক্ষণের ব্যবস্থা আছে কি?

☐ হ্যাঁ ☐ না

১.১৭.১ থাকলে প্রশিক্ষণের ধরন?

☐ সরকারি প্রতিষ্ঠানে শিক্ষানবিস ☐ বেসরকারি প্রতিষ্ঠানে শিক্ষানবিস ☐ এন. জি .ও ☐ সংশিষ্ট পেশার প্রশিক্ষণ কেন্দ্র ☐ কোম্পানির খরচে বৈদেশিক প্রশিক্ষণ

১.১৮ প্রতিষ্ঠানের শ্রমিক-কর্মচারীদের স্বাস্থ্য পরীক্ষার ব্যবস্থা আছে কি?

☐ হ্যাঁ ☐ না

১.১৮.১ স্বাস্থ্য পরীক্ষার ব্যবস্থা থাকলে কি ধরনের স্বাস্থ্য পরীক্ষার ব্যবস্থা?

☐ নিজস্ব ডাক্তার প্রতিদিন নির্দিষ্ট সময়ে প্রতিষ্ঠানের স্বাস্থ্য সেবায় নিয়োজিত ☐ ডাক্তারের নিজস্ব চেম্বারে দেখেন

☐ প্রতিষ্ঠানের ভেতর ছোট হাসপাতাল আছে ☐ স্বাস্থ্য সেবার জন্য আলাদা আর্থিক ভাতা পান

১.১৯ শিল্প কারখানার পরিবেশ বিষয়ক ছাড়পত্র আছে কিনা (বিবরণসহ)

……
……

১.২০ কর্মকর্তা/কর্মচারীদের বাসস্থান সম্পর্কিত তথ্য

☐ শিল্প প্রতিষ্ঠানের নিজস্ব আবাসন ☐ নিজস্ব বাসস্থান ☐ বাড়িভাড়া

১.২০.১ প্রতিষ্ঠানের নিজস্ব স্টাফ কোয়ার্টার আছে কী?

☐ হ্যাঁ ☐ না

১.২১ প্রতিষ্ঠানে উৎপাদিত পণ্যের পরিমাণ (বাৎসরিক)

……পিস …… টন …… গজ/মিটার

১.২২ উৎপাদিত পণ্যের মূল্য (বাৎসরিক) …… টাকা

১.২৩ শিল্পকারখানার সমস্যা :

১.২৩.১ শিল্পকারখানাতে কোন ধরণের সমস্যা বেশি দেখা যায়?

☐ অবকাঠামোগত সমস্যা ☐ উৎপাদনগত সমস্যা ☐ বাজারজাতকরণ সমস্যা ☐ বিনিয়োগের পরিবেশগত সমস্যা ☐ আমলাতান্ত্রিক জটিলতা ☐ জ্বালানি সংকট

১.২৩.২ কোন ধরণের অবকাঠামোগত সমস্যা বেশি দেখা যায়?

☐ অপ্রতুল যোগাযোগ ব্যবস্থা ☐ কাঁচামাল সরবরাহে সমস্যা ☐ বিদ্যুতের অপর্যাপ্ততা ☐ বর্জ্য অপসারণ সমস্যা

১.২৩.৩ কোন ধরণের উৎপাদনগত সমস্যা বেশি দেখা যায়?

☐ ত্রুটিপূর্ণ যন্ত্রাদি ☐ জ্বালানি সংকট ☐ দক্ষ শ্রমিকের অভাব ☐ প্রয়োজনীয় মূলধনের অভাব ☐ শ্রমিক অসন্তোষ

১.২৩.৪ কোন ধরণের বাজারজাতকরণ সমস্যা বেশি দেখা যায়?

☐ যানবাহনের অভাব ☐ অপর্যাপ্ত বাজার ☐ পর্যাপ্ত ক্রেতার অভাব

১.২৩.৫ কোন ধরণের বিনিয়োগের পরিবেশগত সমস্যা বেশি দেখা যায়?

☐ প্রয়োজনীয় মূলধনের অভাব ☐ অযৌক্তিক কর বসানো ☐ সামাজিক/রাজনৈতিক অস্থিরতা ☐ ব্যাংক থেকে ঋণ পাওয়ায় সমস্যা

১.২৩.৬ কোন ধরণের সমস্যা বেশি দেখা যায়?

☐ চাঁদাবাজি ☐ দূর্নীতি ☐ সিন্ডিকেট ☐ দালাল/ মধ্যস্ততা

১.২৪ উল্লিখিত সমস্যা সমাধানের পরামর্শ থাকলে তার বিবরণ……

১.২৫ উপজেলার সম্ভাবনাময় খাতসমূহ কী কী?

১.২৬ ভবিষ্যৎ সম্ভাবনা এর জন্য করনীয় কি/ কি কি প্রস্তাব গ্রহণ করতে হবে?

তথ্য প্রদানের জন্য ধন্যবাদ

স্থানীয় সরকার প্রকৌশল অধিদপ্তর (এলজিইডি)

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নবাবগঞ্জ উপাজেলা মাস্টার প্ল্যান পর্যালোচনা ও হালনাগাদকরণ

অনানুষ্ঠানিক অর্থনৈতিক কর্মকান্ড জরিপ প্রশ্নমালা ২০২৩

প্রশ্নমালা নংঃ..... জরিপের তারিখ .....
সময়ঃ.....

সাক্ষাৎকার প্রদানকারীর নাম..... স্বাক্ষর.....

ঠিকানাঃ.....

তথ্য সংগ্রহকারী ---------- তারিখ:----------

তথ্য নিরীক্ষক---------- তারিখ: ----------

সকল তথ্য নেয়া হয়েছে ⬚ হ্যাঁ ⬚ না

১। অনানুষ্ঠানিক কার্যক্রমের ধরণ?

⬚ অনানুষ্ঠানিক স্ব-নিযুক্ত ⬚ পরিবারের বিভিন্ন কাজে জড়িত ⬚ বেসরকারি অনিবন্ধিত প্রতিষ্ঠান

⬚ নিজস্ব-ব্যবহারের জন্য পণ্য উৎপাদনকারী নিজস্ব কর্মী

২। কোন ধরণের অনানুষ্ঠানিক পেশার সাথে জড়িত?

⬚ হকার	⬚ **বর্জ্য সংগ্রহকারী**
⬚ ক্ষুদ্র কৃষিপণ্য উৎপাদনকারী	⬚ রাস্তার পাশের খাদ্য বিক্রেতা
⬚ পারিবারিক ব্যবসা	⬚ অনানুষ্ঠানিক শ্রমিক
⬚ অনিবন্ধিত মাইক্রো এন্টারপ্রাইজ/ ছোট ব্যবসা	⬚ গৃহকর্মী
⬚ অনানুষ্ঠানিক অর্থ ঋণদাতা	⬚ দিনমজুর (কৃষি)
⬚ বাড়িতে তৈরি এবং কারুশিল্প পণ্য বিক্রেতা	⬚ দিনমজুর (অকৃষি)
⬚ ফ্রিল্যান্সার	⬚ অন্যান্য (উল্লেখ করুন)
⬚ নির্মাণ শ্রমিক	

৩। উত্তরদাতার লিঙ্গ ⬚ পুরুষ ⬚ মহিলা ⬚ হিজড়া

৪। উত্তরদাতার বয়স ⬚ ০-১৪ ⬚ ১৫-২৪ ⬚ ২৫-৩৪ ⬚ ৩৫-৪৪ ⬚ ৪৫-৫৪ ⬚ ৫৫-৬৪ ⬚ ৬৫+

৫। শিক্ষাগত যোগ্যতাঃ ⬚ নিরক্ষর ⬚ প্রাথমিক/সমমান ⬚ ৮ম গ্রেড/ সমমান ⬚ এসএসসি/ সমমান ⬚এইচএসসি/ সমমান ⬚ স্নাতক/ সমমান এবং তদূর্ধ্ব

৬। অনানুষ্ঠানিক কাজটি কোন খাতের সাথে জড়িত?

⬚ কৃষি ⬚ সেবা ⬚শিল্প

৭। অভিগমনের কারন

⬚ কর্মস্থল ⬚ বেকারত্ব/ দারিদ্র্য ⬚ বৈবাহিক কারন ⬚ সামাজিক অস্থিরতা ⬚ ব্যবসা ⬚ নদী ভাঙন ⬚ অন্যান্য (উল্লেখ করুন)

৮। অনানুষ্ঠানিক কার্যক্রম কোথায় পরিচালিত হয়?

⬚ উদ্যোক্তার বাড়ি থেকে ⬚ বাজারের স্টল থেকে ⬚ অস্থায়ী অবস্থান থেকে ⬚ রাস্তায়

৯। আপনার অনানুষ্ঠানিক কর্মে নিচের কোনটি বেশি দেখা যায়?

⬚ সামাজিক নিরাপত্তা ব্যবস্থার অভাব ⬚ বার্ষিক বা অসুস্থতা ছুটির প্রাপ্যতার অভাব ⬚ লিখিত নিয়োগ চুক্তির অভাব

⬚ নৈমিত্তিক/ অস্থায়ী প্রকৃতির কাজ

১০ বর্তমান পেশার ধরণ

.....
.....

১০.১ কত বছর/ সময় এই পেশার সাথে যুক্ত?

১১। আপনি কি প্রশিক্ষণ প্রাপ্ত?

⬚ হ্যাঁ ⬚ না

১২। পূর্বের পেশার ধরণ

.....
.....

১২.১ পূর্বের পেশা পরিবর্তনের কারন?

⬚ আর্থিক ক্ষতি ⬚ আরও লাভের আকাঙ্ক্ষা ⬚ দুর্ঘটনা-সম্পর্কিত পরিবর্তন ⬚ সুবিধাবঞ্চিত অবস্থা

১৩। ভবিষ্যতে কোন পেশায় যেতে চান?

১৪। স্বনিয়োজিত পেশা হলে মূলধনের পরিমাণ (টাকা) .....

১৪.১ মূলধনের উৎস?

⬚ উত্তরাধিকার সূত্রে ⬚ যৌতুক ⬚ নিজ পরিবার/ আত্মীয়স্বজন ⬚ বিনিয়গকারি ⬚ ঋণ ⬚ নিজেদের সমবায়

১৫। ভোক্তা শ্রেণী?

⬚ উচ্চবিত্ত ⬚ মধ্যবিত্ত ⬚ নিম্নবিত্ত ⬚ নির্দিষ্ট নয়

১৬। কর্মকান্ডের ধরণ

⬚ অস্থায়ী ⬚মৌসুমী ⬚অনিয়মিত

১৭। কর্মকান্ডের কাল :

⬚ মৌসুমি ⬚ সারা বছর.

১৭.১ মৌসুমি হলে কোন মৌসুম .....

১৭.২ কর্ম মৌসুমের ব্যাপ্তিকাল .....

১৮।।আপনার অর্থনৈতিক কর্মকান্ড পরিচালনার স্থান : .....

১৮.১ আপনার অর্থনৈতিক কর্মকান্ড এর অবস্থানের ধরণ?

⬚ স্থায়ী ⬚ অস্থায়ী ⬚ যানবাহনে ভ্রাম্যমান ⬚ হেডলোডে ভ্রাম্যমান

১৯। দোকানের মালিকানা :

⬚ নিজস্ব ⬚ ভাড়া

২০। আপনার কি কোন ঋণ আছে?

⬚ হ্যাঁ ⬚ না

২০.১ হ্যাঁ হলে ঋণের উৎস :

⬚ সরকারি ব্যাংক ⬚ বেসরকারি ব্যাংক ⬚ সমবায় সমিতি ⬚ মহাজন ⬚ আত্মীয়স্বজন/ বন্ধু ⬚ এনজিও

২০.২ ঋণ থাকলে টাকার পরিমাণ? .....

২০.৩ ঋণ নেয়ার উদ্দেশ্য

⬚ ব্যবসা ⬚ আসবাব পত্র ক্রয় ⬚ ঘরবাড়ি মেরামত ⬚ বিবাহ ⬚ গবাদি পশু ক্রয় ⬚ চিকিৎসা ⬚ জমি ক্রয়

২১। মোট মাসিক আয় কত টাকা?

⬚ <১০০০০ ⬚ ১০০০০-২০০০০ ⬚ ২০০০০-৪০০০০ ⬚ >৪০০০০

২২। মোট মাসিক ব্যয় (টাকা) : ..... ২২.২ খাদ্য সামগ্রী বাবদ (টাকা) : ..... ১৩. অন্যান্য : .....

২৩। বাসস্থানের মালিকানা:

⬚ নিজস্ব ⬚ ভাড়াটে

২৩.১ ভাড়াটে হলে মাসিক ভাড়া (টাকা) : .....

২৪। কর্মক্ষেত্রে আপনি কি ধরণের সমস্যার মুখোমুখি হন?

⬚অবকাঠামোগত সমস্যা ⬚ বিরুপ আবহাওয়া ⬚ উচ্ছেদ আতঙ্ক ⬚ চাঁদাবাজি ⬚পুলিশের হয়রানি

⬚ ব্যবসায়িক মন্দা

২৪.১। সমস্যা সমাধানের জন্য কি করা যেতে পারে? .....

২৫। কোন ধরণের আর্থ-সামাজিক উন্নয়ন চান?

⬚ বাসস্থান নিরাপত্তা ⬚ স্বাস্থ্য নিরাপত্তা ⬚ পর্যাপ্ত ঋণ নেয়ার সুযোগ ⬚ কর্মসংস্থানের সুযোগ

২৬। ভবিষ্যৎ পরিকল্পনা : .....

তথ্য প্রদানের জন্য ধন্যবাদ

স্থানীয় সরকার প্রকৌশল অধিদপ্তর (এলজিইডি)

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নবাবগঞ্জ উপাজেলা মাস্টার প্ল্যান পর্যালোচনা ও হালনাগাদকরণ

আনুষ্ঠানিক অর্থনৈতিক কর্মকান্ড জরিপ প্রশ্নমালা ২০২৩

(মার্কেট প্লেস/কাঁচাবাজার/হাট)

প্রশ্নমালা নংঃ ..... জরিপের তারিখঃ .....

সময়ঃ.....

সাক্ষাৎকার গ্রহণকারীর নাম ঃ ..... সাক্ষাৎকার গ্রহণকারীর স্বাক্ষর ঃ .....
সুপারভাইজারের স্বাক্ষর

১. মার্কেট/কাঁচাবাজার/হাট

১.১ মার্কেট/হাট/বাজারের নামঃ .....

১.২ এই মার্কেট/হাট/বাজার কোন সংস্থার কর্তৃত্বাধীন?

. অন্যান্য .....

১. ব্যক্তি মালিকানাধীন	২. উপজেলা পরিষদ	৩. স্থানীয় সরকার প্রকৌশল বিভাগ	
৪ সমবায় সমিতি	. জেলা পরিষদ	সরকারী প্রতিষ্ঠান	

১.৩ মার্কেট/হাট/বাজার কিভাবে পরিচালিত হয়?

১. সমিতির মাধ্যমে	২. উপজেলা পরিষদ কর্তৃক সরাসরি	৩. ইজারাদার কর্তৃক
৪. মালিক কর্তৃক	৫. সিটি কর্পোরেশন কর্তৃক সরাসরি	৬. অন্যান্য .....

১.৪ ইজারাদার দ্বারা পরিচালিত হলে বর্তমান অর্থ বছরে ইজারার পরিমাণঃ..... টাঃ

১.৫ মার্কেট/হাট/বাজারের আয়তন ঃ ..... একর/বিঘা

১.৬ মার্কেট/হাট/বাজারে কত সংখ্যক দোকান আছে? .....

১.৭ কত ধরনের ব্যবসা হয় এই মার্কেট/বাজার বা হাটে? (সম্ভব হলে পাশে দোকানের সংখ্যা লিখুন)

	মুদি দোকান		ক্রোকারি সামগ্রী		মাংস বিক্রির দোকান
	ষ্টেশনারি দোকান		হাঁড়ি-পাতিলের দোকান		গরম্ন/ছাগলের হাট
	কনফেকসনারি দোকান		সেলুন		পস্নাস্টিক আসবাব ও সামগ্রী
	মোবাইল বিক্রয় ও মেরামত		সব্জির বাজার		মাইক ভাড়া
	মোবাইল কার্ড ও ফ্লেক্সিলোড		মাছের বাজার		
	ঘড়ি ও ইলেক্ট্রনিক্স সামগ্রী		চাপকল ও এর যন্ত্রাংশ		কামারের দোকান
	জুতার দোকান		স্যালো ইঞ্জিন মেরামত		রেস্ত্মরাঁ
	তৈরি পোষাকের দোকান		হার্ডওয়্যার সামগ্রী		পাইপের দোকান
	কাপড়ের দোকান		স্যানিটারি সামগ্রী		নির্মাণ সামগ্রী
	দর্জি দোকান		মটর সাইকেল মেরামত		স্বর্ণের দোকান
	সিমেন্ট		রড		অন্যান্য .....

১.৭ (ক) হাট বসার ধরন

১. দৈনিক	২. সাপ্তাহিক	৩. সপ্তাহে দুই/তিন দিন

১.৭ (খ) বাজার বসার ধরন

১. দৈনিক	২. সকাল	৩. সান্ধ্য

এই মার্কেট/হাট/বাজার এর বিদ্যুৎ সরবরাহঃ ☐ আছে ☐ নাই

১.৭ (ঘ) এই মার্কেট/হাট/বাজার এর খাবার পানি সরবরাহ

১. টিউবওয়েল	২. পুকুর	৩. সিটি কর্পোরেশনের পাইপ লাইন	৪. সরবরাহ নাই

১.৭ (ঙ) এই মার্কেট/হাট/বাজার এর গণ শৌচাগার ব্যবস্থা

১.৭ (গ)	১. স্যানিটারী টয়লেট	২. পিট ল্যাট্রিন	৩. ব্যবস্থা নাই

১.৮ এই মার্কেটে মাসিক লেন-দেনের পরিমাণ? .....
১.৯ মাসে কি পরিমাণ ভাড়া বা টোল আদায় হয়? .....

১.১০ বর্জ্য অপসারণের দায়িত্ব কার?

১.ইজারাদার	২. দোকানদার মালিক সমিতি	৩. সিটি কর্পোরেশন	৪. মার্কেট/হাট/ বাজার কমিটি
৫. দোকানের মালিক	৬. বেসরকারি সাহায্য সংস্থা	৭. জেলা পরিষদ	৮. অন্যান্য ঃ .....

১.১১ কিভাবে বর্জ্য অপসারিত হয়

১. নিজস্ব লোক দ্বারা	২. নিজস্ব ভ্যানে করে	৩. কমিউনিটি ভ্যানে করে
৪. বেসরকারি সংস্থার ভ্যানে করে	৫. বেসরকারি সংস্থার ট্রাকে করে	৬. সিটি কর্পোরেশনের গাড়িতে
৭. বর্জ অপসারণের ব্যবস্থা নেই	৮. অন্যান্য ঃ	

১.১২ কোথায় বর্জ্য ফেলা হয়

১. নিকটস্থ ডাষ্টবিনে	২. বর্জ্য ফেলার নির্দিষ্ট স্থানে	৩. রাস্তার পার্শ্বে	৪. নিচু/পতিত জমিতে
৫. নদীতে বা খালে	৬. অন্যান্য ঃ		

১. রাস্তা	২. নৌ পথ	৩. রাস্তা নেই	৪. অন্যান্য ঃ .....

১.১৪ আপনার প্রতিষ্ঠানের নিম্নবর্ণিত প্রতিবেদন থাকলে সরবরাহ করার অনুরোধ করা হলো ঃ

- বাৎসরিক প্রতিবেদন
- মার্কেটের লে আউটপস্ন্যান
- পরিবেশ সংক্রান্ত্ম প্রতিবেদন
- প্রতিষ্ঠান পরিচালনার বাজেট
- প্রতিষ্ঠানের উন্নয়ন, ট্রেনিং বা কর্মকর্তা কর্মচাররিদের গুণগত মান উন্নয়নের জন্য নীতিমালা
- ভূমি উন্নয়ন, পানি নিষ্কাশন, পয়নিষ্কাশন, পরিবহন সংক্রান্ত্ম প্রতিবেদন

১.১৫ পরিচালনা কমিটি/সমিতির বক্তব্য

১.১৫.১ মার্কেট/হাট-বাজার ব্যস্থাপনায় কোন সমস্যা থাকলে উলেস্নখ করস্নন ঃ

.....

১.১৫.২ সমস্যা উত্তরণের সম্ভাব্য সমাধান বা দিক নির্দেশনামূলক কিছু বলুন ঃ

.....

তথ্য প্রদানের জন্য ধন্যবাদ

APPENDIX III

Local Government Engineering Department (LGED)
Review and Update of Nawabganj Upazila Development Plan (Master Plan) under UTMIDP
Bus Terminal Survey- Fact Sheet

1. Location:
2. Area:
3. Capacity of the Terminal (number of Busses) (ask):
4. Number of Busses found on the day of survey:
5. Average number of buses depart each day:
6. Number of bus routes:

No.	Description	Number of available busses	Average number of buses depart each day
1		__ seat: __ seat:	
2		__ seat: __ seat:	
3		__ seat: __ seat:	
4		__ seat: __ seat:	
5		__ seat: __ seat:	
6		__ seat: __ seat:	
7		__ seat: __ seat:	

7. Daily number of users (approximately):

8. Bus schedule/Departure time:

Route no	Departure Times

9. Destination-Fare matrix

Route no	Destination	Fare

10. Amenities in Terminal:

☐Toilet
☐Garbage dumping facility
☐Rest room
☐Facility for physically disabled person
☐Store
☐Parking facility
☐Bus Berth
☐Tap water and drinking water supply
☐Other amenities.....

11. What are the relevant problems?

12. Probable solution to the problem?

13. How is the demand for buses? Is there any issue of spilling? Do buses stand outside the terminal due to high demand?

14. Is there any need for expansion of this terminal?

15. Is there any need for new bus terminal in the Upazila? Where can be the locations?

Local Government Engineering Department (LGED)
Review and Update of Nawabganj Upazila Development Plan (Master Plan) under UTMIDP
Parking Survey

Date Location Weather condition Spot 1:		Direction													Direction Spot 2:											
		2	3	4	5	6	7, 8	9	10	11	12	13	14	15	2	3	4	5	6	7, 8	9	10	11	12	13	14	15
Period	Time	Bicycle	Rickshaw / Van	Motorcycle	CNG / Auto Rickshaw / Auto Van	Tempu / Leguna / Maxi	Car / Taxicab / Pick up, Jeep, SUV	Microbus	Medium bus (16~39 seats)	Large bus / Double decker / Articulated bus	Light truck / 3 ton or less	Medium truck/2-axle Truck	Heavy truck/ Trailer/ Container/ 3 axle Truck	Others	Bicycle	Rickshaw / Van	Motorcycle	CNG / Auto Rickshaw / Auto Van	Tempu / Leguna / Maxi	Car / Taxicab / Pick up, Jeep, SUV	Microbus	Medium bus (16~39 seats)	Large bus / Double decker / Articulated bus	Light truck / 3 ton or less	Medium truck/2-axle Truck	Heavy truck/ Trailer/ Container/ 3 axle Truck	Others
AM	7.00-7.30																										
	7.30-8.00																										
	8.00-8.30																										
	8.30-9.00																										
	9.00-9.30																										
	9.30-10.00																										
	10.00-10.30																										
	10.30-11.00																										
	11.00-11.30																										
	11.30-12.00																										
PM	12.00-12.30																										
	12.30-1.00																										
	1.00-1.30																										
	1.30-2.00																										
	2.00-2.30																										
	2.30-3.00																										
	3.00-3.30																										
	3.30-4.00																										
	4.00-4.30																										
	4.30-5.00																										
	5.00-5.30																										
	5.30-6.00																										
	6.00-6.30																										
	6.30-7.00																										

Surveyor's name

Local Government Engineering Department (LGED)
Review and Update of Nawabganj Upazila Master Plan
Travel Time Survey

Date: Weather: Survey Route: A
Direction: Komorganj hat to Hashnabad Surveyor: Supervisor:
Start time: End time:

	Checkpoint	Passing Time		Delay Time																Distance
		hr	min	sec	1st delay			2nd Delay				3rd Delay				4th Delay				5th Delay				km
					Place	min	sec	reason	Place	min	sec	reason	Place	min	sec	reason	Place	min	sec	reason	Place	min	sec	reason	
1	Komorganj hat																								
2	Bordhonpara bajar																								
3	Bagmara																								
4	Muktijoddha chottor																								
5	Majhirkanda																								
6	Bandura polli bidut office																								
7	Puraton bandura bazar																								
8	Hashnabad																								

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Review and Update of Nawabganj Upazila Master Plan

Travel Time Survey

Date:
Direction: Hashnabad to Komorganj Hat
Start time:

Weather:
Surveyor:
End time:

Survey Route: A
Supervisor:

Checkpoint		Passing Time			Delay Time																				Distance
		hr	min	sec	1st delay				2nd Delay				3rd Delay				4th Delay				5th Delay				
9	Hashnabad				Place	min	sec	reason	Place	min	sec	reason	Place	min	sec	reason	Place	min	sec	reason	Place	min	sec	reason	km
10	Puraton Bandura Bazar																								
11	Bandura polli biddut office																								
12	Majhirkanda																								
13	Muktijoddha Chattar																								
14	Bagmara																								
15	Bordhonpara bajar																								
16	Komorganj Hat																								

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Review and Update of Nawabganj Upazila Master Plan

Travel Time Survey

Date:
Direction: Muktijoddha Chattar- Sholla Hospital
Start time:

Weather:
Surveyor:
End time:

Survey Route: B
Supervisor:

Checkpoint		Passing Time			Delay Time																				Distance
		hr	min	sec	1st delay				2nd Delay				3rd Delay				4th Delay				5th Delay				
					Place	min	sec	reason	Place	min	sec	reason	Place	min	sec	reason	Place	min	sec	reason	Place	min	sec	reason	km
1	Muktijoddha chottor																								
2	Jantrail central mosque																								
3	Vawalia bazar																								
4	Chandrakhula bazar																								
5	Sholla Hospital																								

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Local Government Engineering Department (LGED)
Review and Update of Nawabganj Upazila Master Plan
Travel Time Survey

Date:
Direction: Sholla Hospital- Muktijoddha Chattar
Start time:

Weather:
Surveyor:
End time:

Survey Route: B
Supervisor:

Checkpoint		Passing Time			Delay Time																				Distance
		hr	min	sec	1st delay				2nd Delay				3rd Delay				4th Delay				5th Delay				
					Place	min	sec	reason	Place	min	sec	reason	Place	min	sec	reason	Place	min	sec	reason	Place	min	sec	reason	km
6	Sholla Hospital																								
7	Chandrakhula bazar																								
8	Vawalia bazar																								
9	Jantrail central mosque																								
10	Muktijoddha chottor																								

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Review and Update of Nawabganj Upazila Master Plan

Travel Time Survey

Date:
Direction: Bandura Bazar-Beribadh
Start time:

Weather:
Surveyor:
End time:

Survey Route: C
Supervisor:

Checkpoint		Passing Time			Delay Time																				Distance
		hr	min	sec	1st delay				2nd Delay				3rd Delay				4th Delay				5th Delay				
					Place	min	sec	reason	Place	min	sec	reason	Place	min	sec	reason	Place	min	sec	reason	Place	min	sec	reason	km
1	Bandura Bazar																								
2	Notun Bandura Bus Stop																								
3	Boro Barilla Jame Mosque																								
4	Baruakhali Jame Mosque																								
5	Anwara Begum High Schoo																								
6	Food village restaurant																								

Local Government Engineering Department (LGED)

Review and Update of Nawabganj Upazila Master Plan

Travel Time Survey

Date:
Direction: Beribadh- Bandura Bazar
Start time:

Weather:
Surveyor:
End time:

Survey Route: C
Supervisor:

Checkpoint		Passing Time			Delay Time																				Distance
		hr	min	sec	1st delay				2nd Delay				3rd Delay				4th Delay				5th Delay				
					Place	min	sec	reason	Place	min	sec	reason	Place	min	sec	reason	Place	min	sec	reason	Place	min	sec	reason	km
7	Food village restaurant																								
8	Anwara Begum High Schoo																								
9	Baruakhali Jame Mosque																								
10	Boro Barilla Jame Mosque																								
11	Notun Bandura Bus Stop																								
12	Bandura Bazar																								

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REASON FOR STOPS:

1 - TRAFFIC CONGESTION (TRAFFIC SPILLED BACK CONDITION)
2 - TRAFFIC ACCIDENT
3 - CROSSING OF PEDESTRIANS
4 - CONGESTION OF BUSES NEAR BUS STOP
5- CONGESTION ON THE INTERSECTION
6- INFLUENCE OF THE CARS TURNING TO THE RIGHT
8- PARKING ON STREET
9 - INFLUENCE OF MT/NMT STANDING ON ROAD TO ATTRACT CUSTOMERS
10 - OTHERS

স্থানীয় সরকার প্রকৌশল অধিদপ্তর (এলজিইডি)
নবাবগঞ্জ উপজেলা মহাপরিকল্পনা পর্যালোচনা ও হালনাগাদকরন
পথচারী সাক্ষাৎকার প্রশ্নমালা ২০২৩

প্রশ্নমালা নংঃ ..... তারিখঃ .....

সময়ঃ ..... সাক্ষাৎস্থলঃ.....

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১. উত্তরদাতার নামঃ..... মোবাইল নাম্বারঃ.....

ঠিকানাঃ.....

২. লিঙ্গঃ ☐ পুরুষ ☐মহিলা ☐অন্যান্য

৩. বয়সঃ ☐<১১ বছর ☐১১-২০ বছর ☐২১-৩০ বছর ☐৩১-৪০ বছর ☐৪১-৫০ বছর
☐৫১-৬০ বছর ☐৬১-৭০ বছর ☐>৭১ বছর

৪. পেশাঃ

1	সরকারি চাকরিজীবী	7	গৃহিণী
2	বেসরকারি চাকরিজীবী	8	যানবাহন চালক
3	ব্যবসায়ী	9	বেকার
4	শিক্ষক	10	অন্যান্য.....
5	শিক্ষার্থী		
6	কৃষি		

৫. পারিবারিক আয়

1.	<১১,০০০ টাকা
2.	১১,০০০-২০,০০০ টাকা
3.	২১,০০০-৩০,০০০ টাকা
4.	৩১,০০০-৪০,০০০ টাকা
5.	৪১,০০০-৫০,০০০ টাকা
6.	>৫০,০০০ টাকা

৬. কোন স্থান থেকে যাত্রা শুরু করেছেন?

.....ইউনিয়ন, ...উপজেলা, ...জেলা

৭. কোন স্থানে যাত্রা শেষ করবেন?

.....ইউনিয়ন, ...উপজেলা, ...জেলা

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Local Government Engineering Department (LGED)
Review and Update of Nawabganj Development Plan (Master Plan) under UTMIDP
Roadside Interview Survey

Location: Date: Weather: Interviewer: Supervisor:

ALL VEHICLES								Bus or Local Public Transport		Goods Vehicle		
SL.	Hour	Vehicle Type	Origin		Destination		No. of Occupants	Pass Cap	No. of Pass	Goods Type	Capacity	Load
			Place (Zila, Upazila, Union)	Type	Place (Zila, Upazila, Union)	Type						
	1	2	3.1	3.2	4.1	4.2	6	7	8	9	Ton	Ton
1												
2												
3												
4												
5												
6												
7												
8												
9												
10												
11												

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Traffic Count Survey and Pedestrian Count Survey

Location: Date:

Time	Direction:													
	Non-motorized			Motorized										
	1	2	3	4	5	6	7, 8	9	10	11	12	13	14	15
	Pedestrian	Bicycle	Rickshaw / Van	Motorcycle	CNG / Auto Rickshaw / Auto Van	Tempu / Leguna / Maxi	Car / Taxicab / Pick up, Jeep, SUV	Microbus	Medium bus (16~39 seats)	Large bus / Double decker / Articulated bus	Light truck / 3 ton or less	Medium truck/2-axle Truck	Heavy truck/ Trailer/ Container/ 3 axle Truck	Others
06:00~06:15														
06:15~06:30														
06:30~06:45														
06:45~07:00														
07:00~07:15														
07:15~07:30														
07:30~07:45														
07:45~08:00														
08:00~08:15														
08:15~08:30														
08:30~08:45														
08:45~09:00														
09:00~09:15														
09:15~09:30														
09:30~09:45														
09:45~10:00														
10:00~10:15														
10:15~10:30														
10:30~10:45														
10:45~11:00														
11:00~11:15														
11:15~11:30														
11:30~11:45														
11:45~12:00														
12:00~12:15														
12:15~12:30														
12:30~12:45														
12:45~01:00														
01:00~01:15														
01:15~01:30														
01:30~01:45														

স্থানীয় সরকার প্রকৌশল অধিদপ্তর (এলজিইডি)
নবাবগঞ্জ উপজেলার মহাপরিকল্পনা পর্যালোচনা এবং হালনাগাদকরন
পরিবহন ও যানবাহন জরিপ ২০২৩
যানবাহন সংখ্যা নির্ণয়ের ট্যালী

তারিখ: ..... স্থানের নাম: ..... রুটের নাম: .....

সময়: শুরু ..... am/pm, শেষ ..... am/pm যানবাহনের দিক: হতে ..... পর্যন্ত ..... আবহাওয়ার অবস্থাঃ রৌদ্র উজ্জ্বল/মেঘলা/ বৃষ্টি/গড়পড়তা

যানবাহনের প্রকার	যানবাহনের সংখ্যা	মোট
বাইসাইকেল		
রিকশা/ ভ্যান		
মোটর সাইকেল		
সিএনজি / অটো রিকশা /অটো ভ্যান		
টেম্পু/লেগুনা		
কার/ট্যাক্সি		
পিক আপ/ জীপ/ SUV		
মাইক্রো বাস		
মিডিয়াম বাস (১৬-৩৯ সিট)		
বড় বাস/ ডাবল ডেকার		
লাইট ট্রাক (৩ টন বা তার কম)		
মিডিয়াম ট্রাক (২ এক্সেল ট্রাক)		
হ্যাভি ট্রাক (ট্রেইলার/ কন্টেইনার/ ৩ এক্সেল ট্রাক)		
অন্যান্য (উল্লেখ করুন)		

শেলটেক SHELTECH

SHELTECH

Local Government Engineering Department (LGED)

Review and Update of Nawabganj Upazila Master Plan

Traffic Count Survey and Pedestrian Count Survey

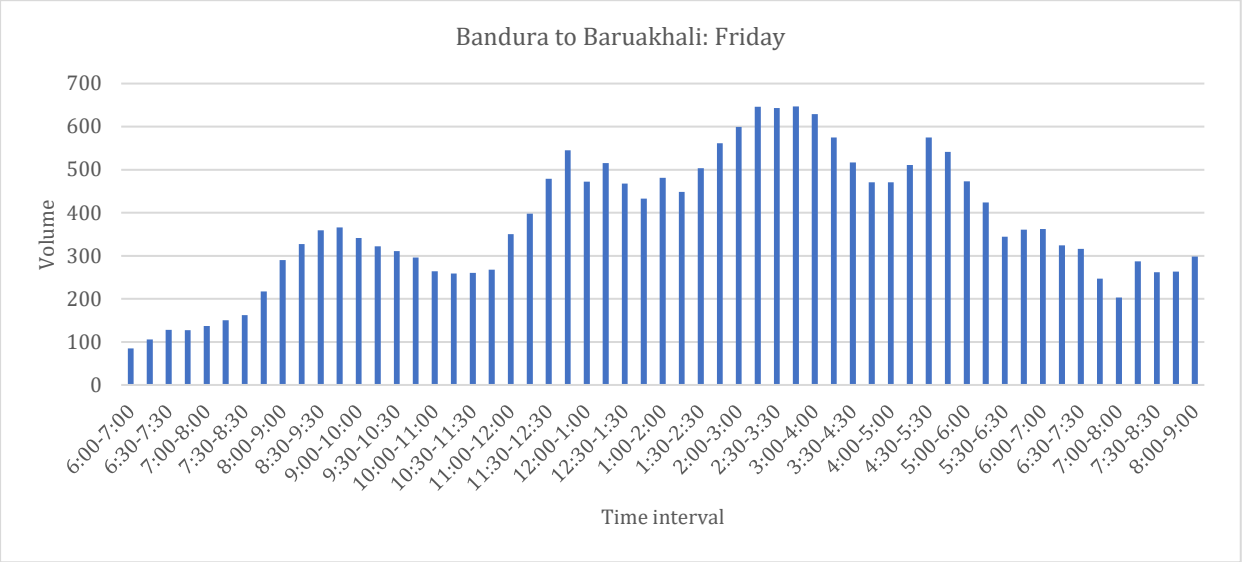
Location: Date:

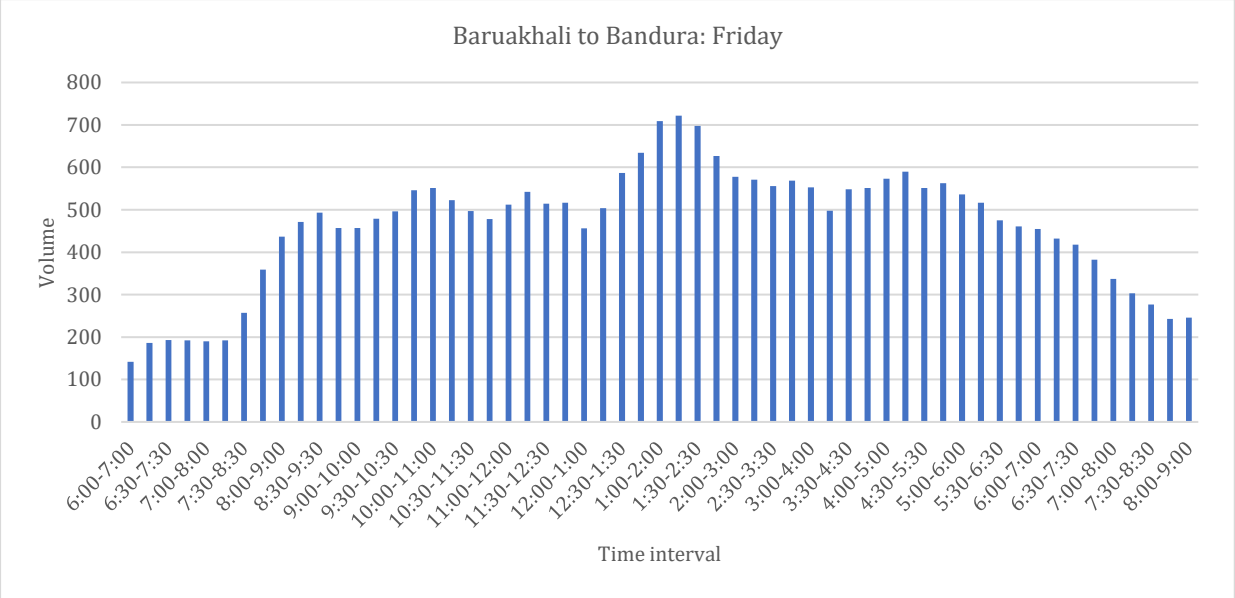
Time	Direction:													
	Non-motorized			Motorized										
	1	2	3	4	5	6	7, 8	9	10	11	12	13	14	15
	Pedestrian	Bicycle	Rickshaw / Van	Motorcycle	CNG / Auto Rickshaw / Auto Van	Tempu / Leguna / Maxi	Car / Taxicab / Pick up, Jeep, SUV	Microbus	Medium bus (16-39 seats)	Large bus / Double decker / Articulated bus	Light truck / 3 ton or less	Medium truck/2-axle Truck	Heavy truck/ Trailer/ Container/ 3 axle Truck	Others
06:00~06:15														
06:15~06:30														
06:30~06:45														
06:45~07:00														
07:00~07:15														
07:15~07:30														
07:30~07:45														
07:45~08:00														
08:00~08:15														
08:15~08:30														
08:30~08:45														
08:45~09:00														
09:00~09:15														
09:15~09:30														
09:30~09:45														
09:45~10:00														
10:00~10:15														
10:15~10:30														
10:30~10:45														
10:45~10:00														
11:00~11:15														
11:15~11:30														
11:30~11:45														
11:45~12:00														
12:00~12:15														
12:15~12:30														
12:30~12:45														
12:45~01:00														
01:00~01:15														

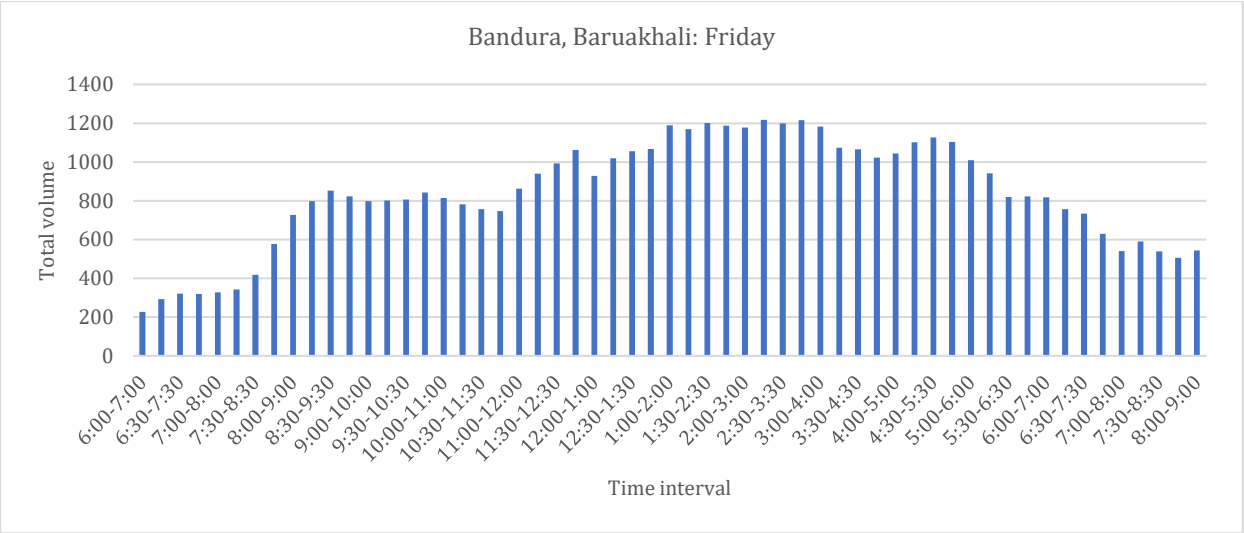
Classification of Vehicles will be as follows:

Non-motorized	Motorized
1. Pedestrian 2. Bicycle 3. Rickshaw/ Rickshaw van	4. Motorcycle 5. CNG/Auto Rickshaw/Auto Van 6. Tempu/Leguna/Maxi 7. Car/ Taxicab 8. Utility (Pick up, Jeep, SUV) 9. Microbus 10. Medium bus (16~39 seats) 11. Large bus/ Double decker/ Articulated bus 12. Light truck/ 3 ton or less 13. Medium truck/2-axle Truck 14. Heavy truck/ Trailer/ Container/ 3 axle Truck 15. Others (ambulance, fire engine, towing car, construction vehicle, armored car, animal-driven car etc.

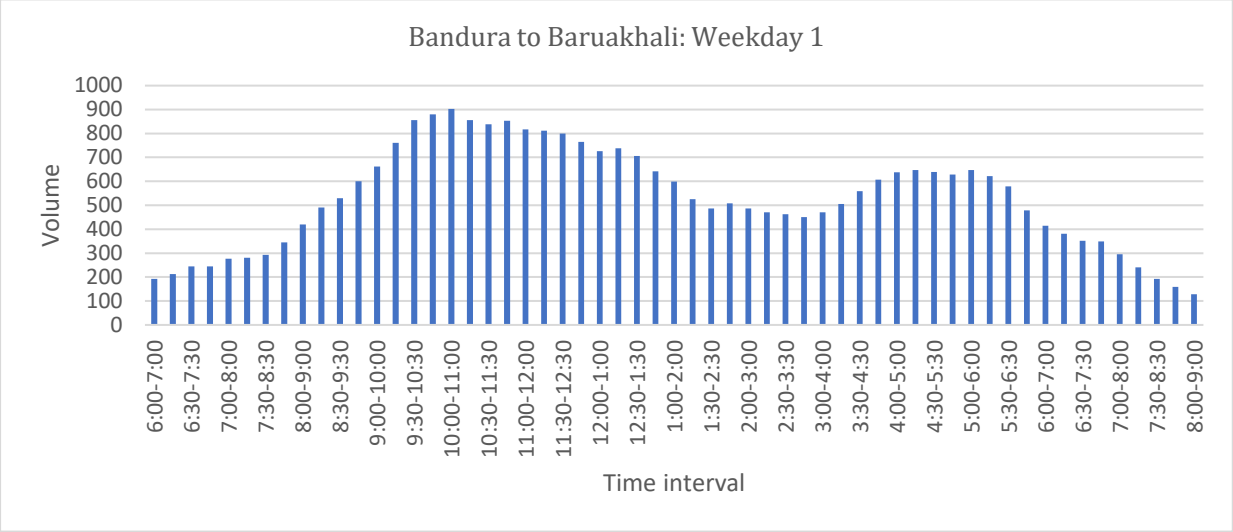
Point 1: Friday

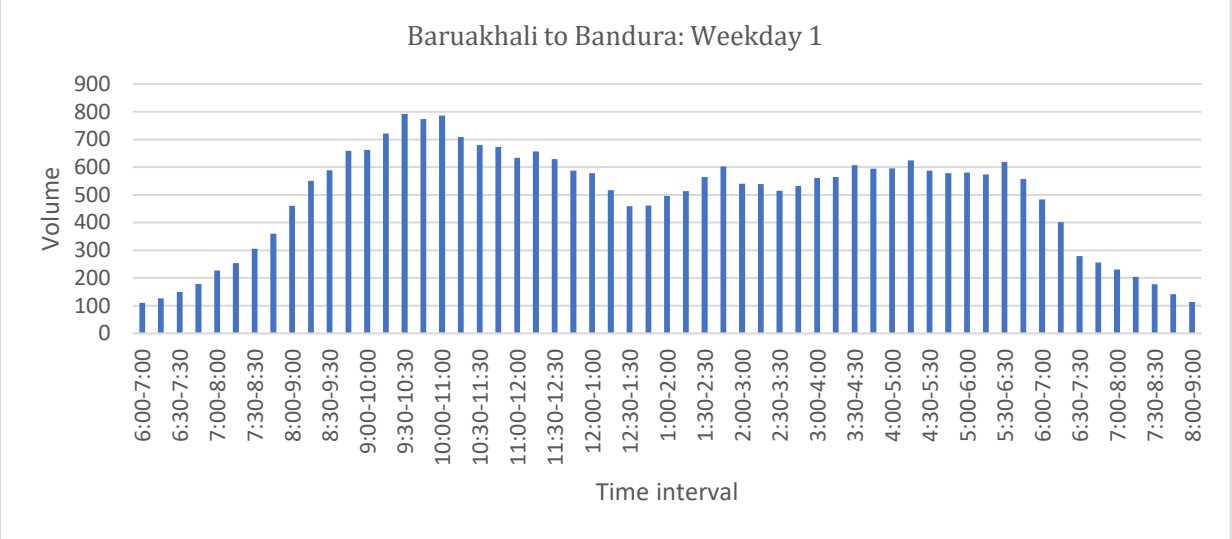


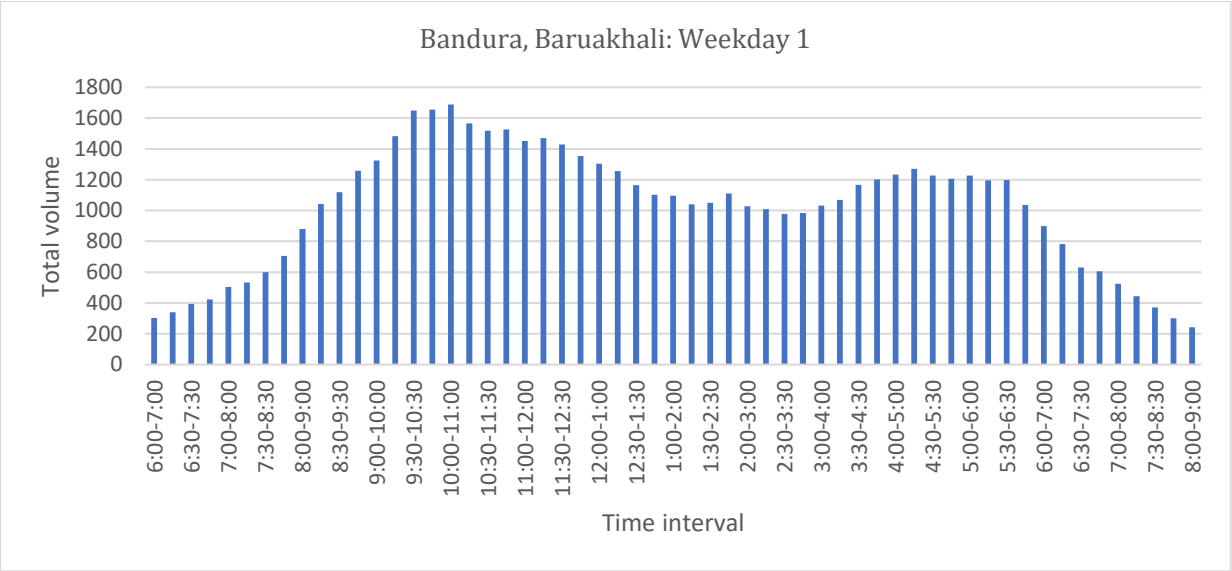



Bandura, Baruakhali: Friday
Total volume
1400
1200
1000
800
600
400
200
0
6:00-7:00
6:30-7:30
7:00-8:00
7:30-8:30
8:00-9:00
8:30-9:30
9:00-10:00
9:30-10:30
10:00-11:00
10:30-11:30
11:00-12:00
11:30-12:30
12:00-1:00
12:30-1:30
1:00-2:00
1:30-2:30
2:00-3:00
2:30-3:30
3:00-4:00
3:30-4:30
4:00-5:00
4:30-5:30
5:00-6:00
5:30-6:30
6:00-7:00
6:30-7:30
7:00-8:00
7:30-8:30
8:00-9:00
Time interval

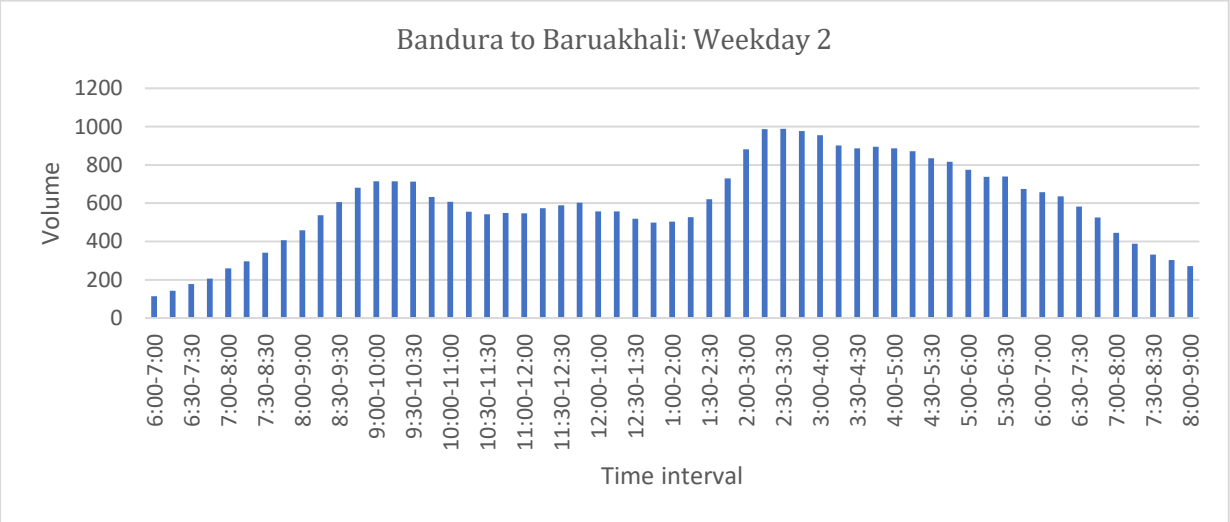
Point 1: Weekday 1

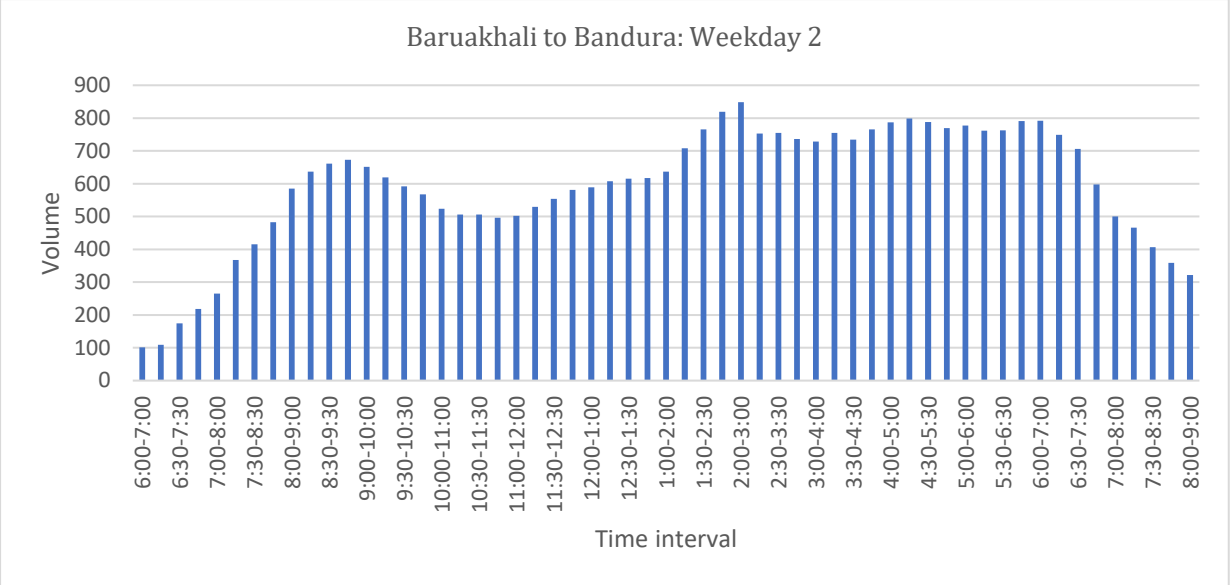


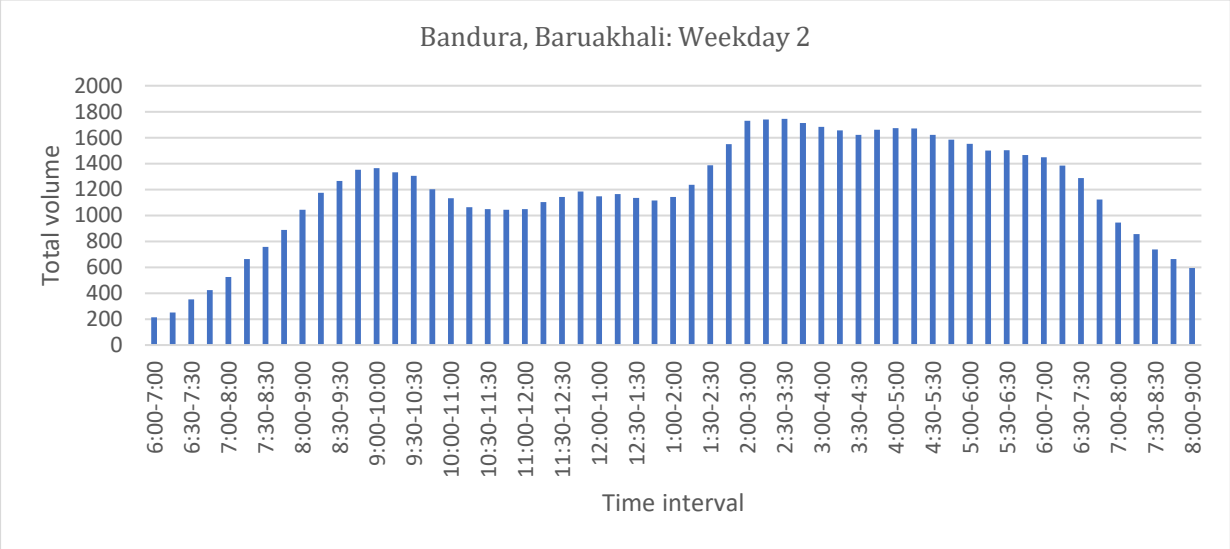




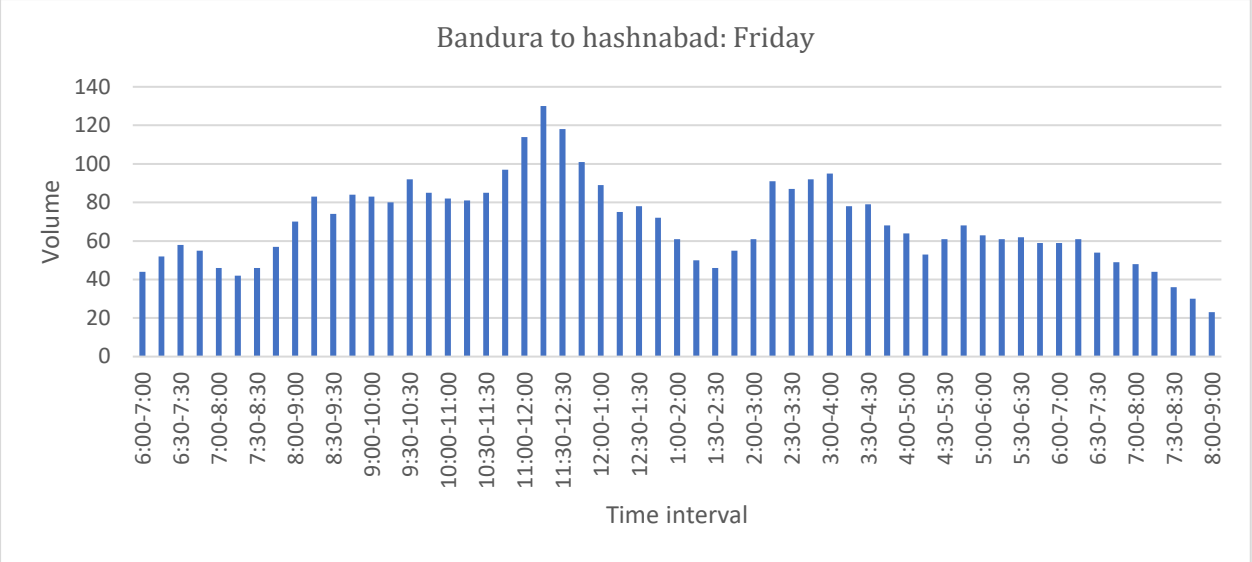
Point 1: Weekday 2

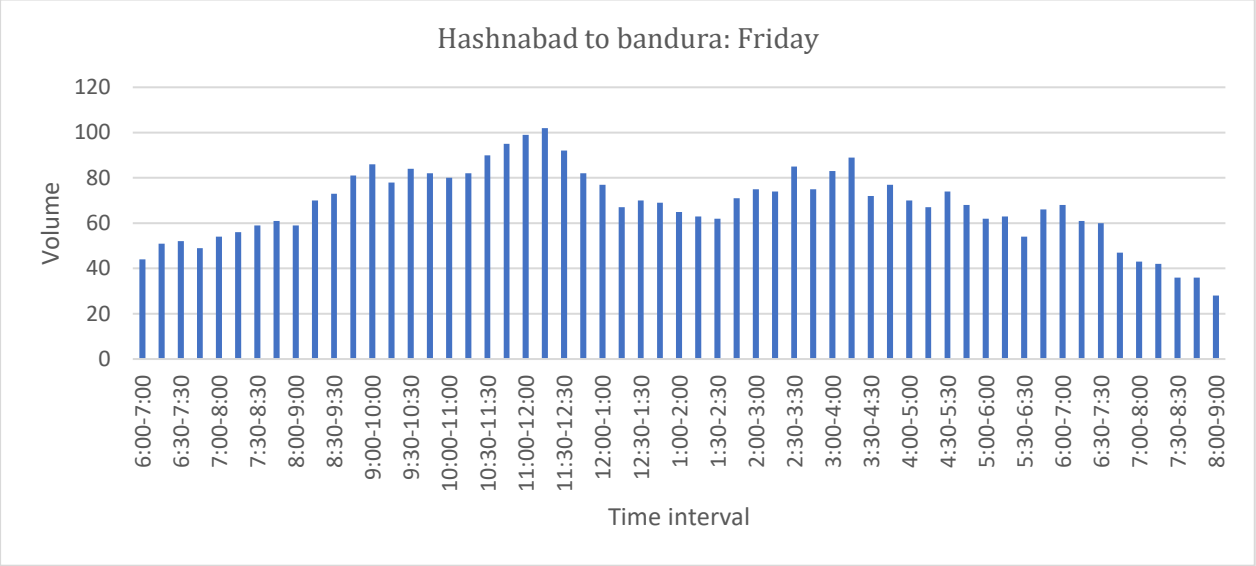


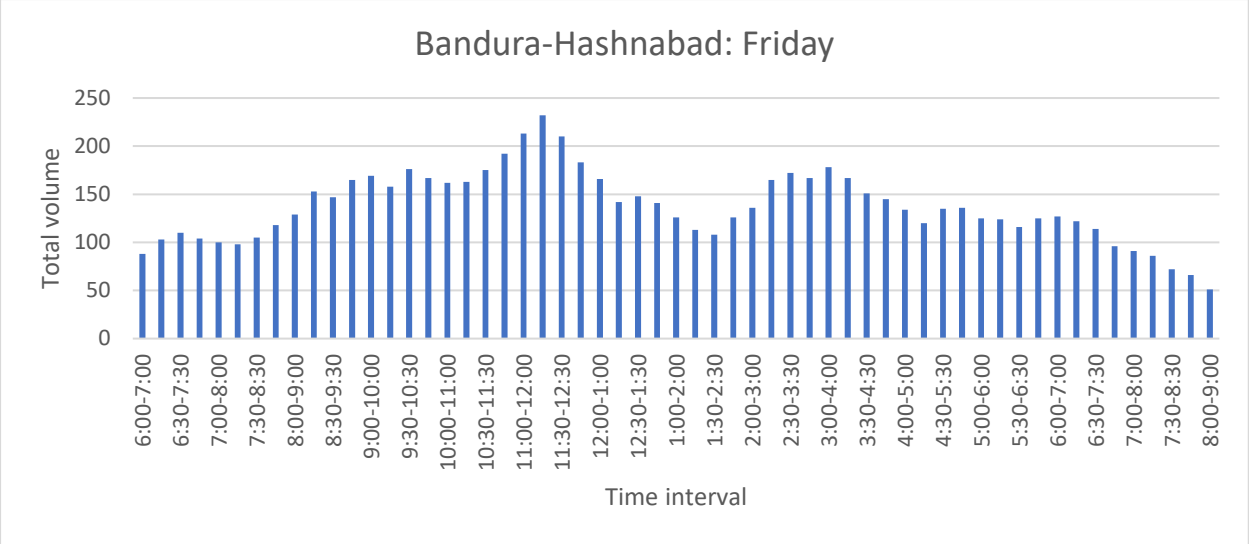




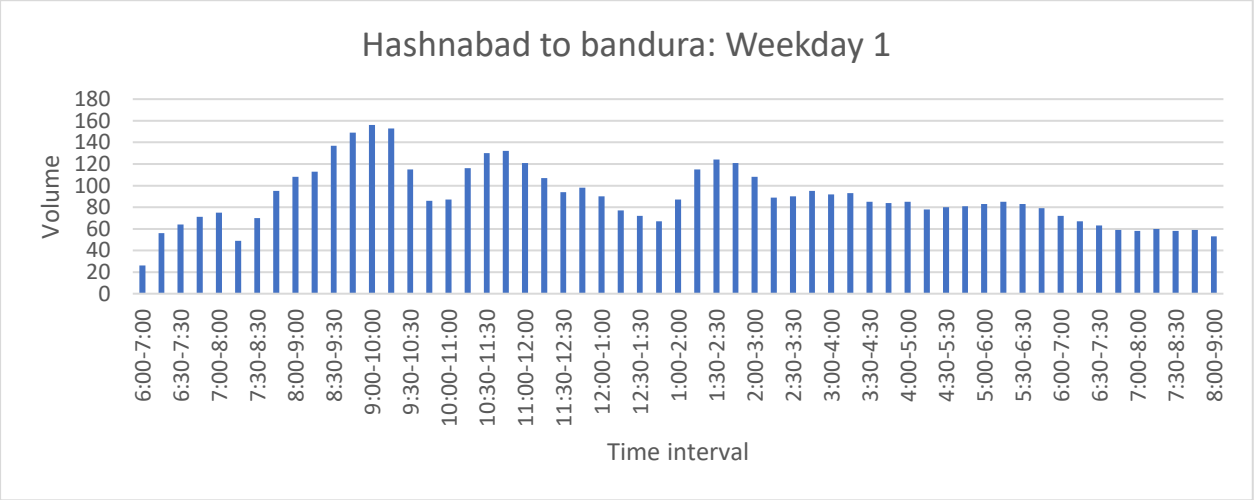
Point 2: Friday

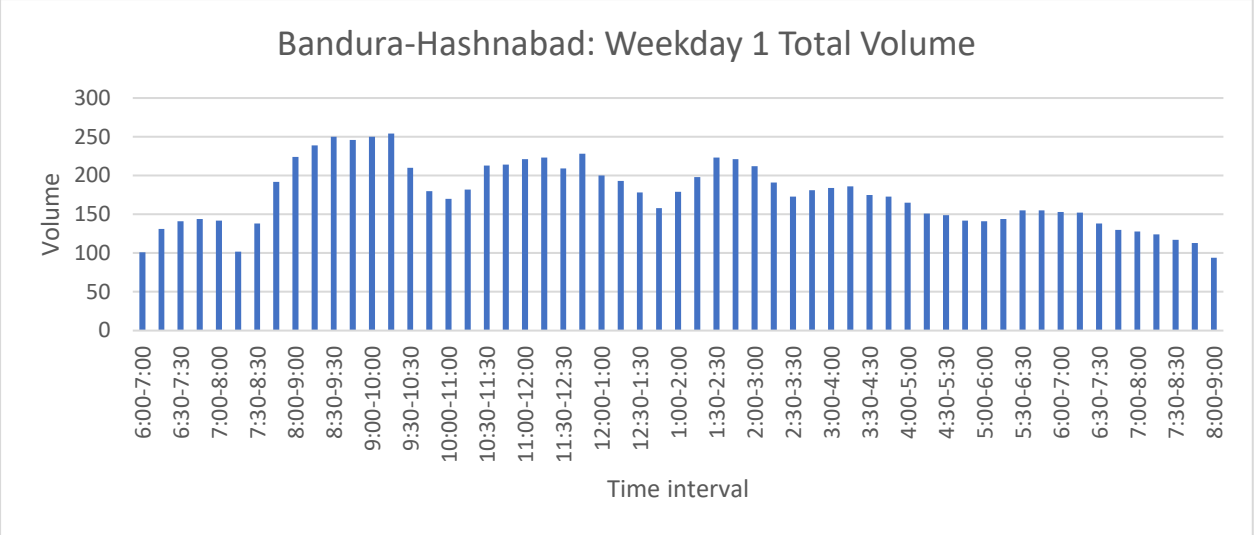

Bandura to hashnabad: Friday
Volume
140
120
100
80
60
40
20
0
6:00-7:00
6:30-7:30
7:00-8:00
7:30-8:30
8:00-9:00
8:30-9:30
9:00-10:00
9:30-10:30
10:00-11:00
10:30-11:30
11:00-12:00
11:30-12:30
12:00-1:00
12:30-1:30
1:00-2:00
1:30-2:30
2:00-3:00
2:30-3:30
3:00-4:00
3:30-4:30
4:00-5:00
4:30-5:30
5:00-6:00
5:30-6:30
6:00-7:00
6:30-7:30
7:00-8:00
7:30-8:30
8:00-9:00
Time interval

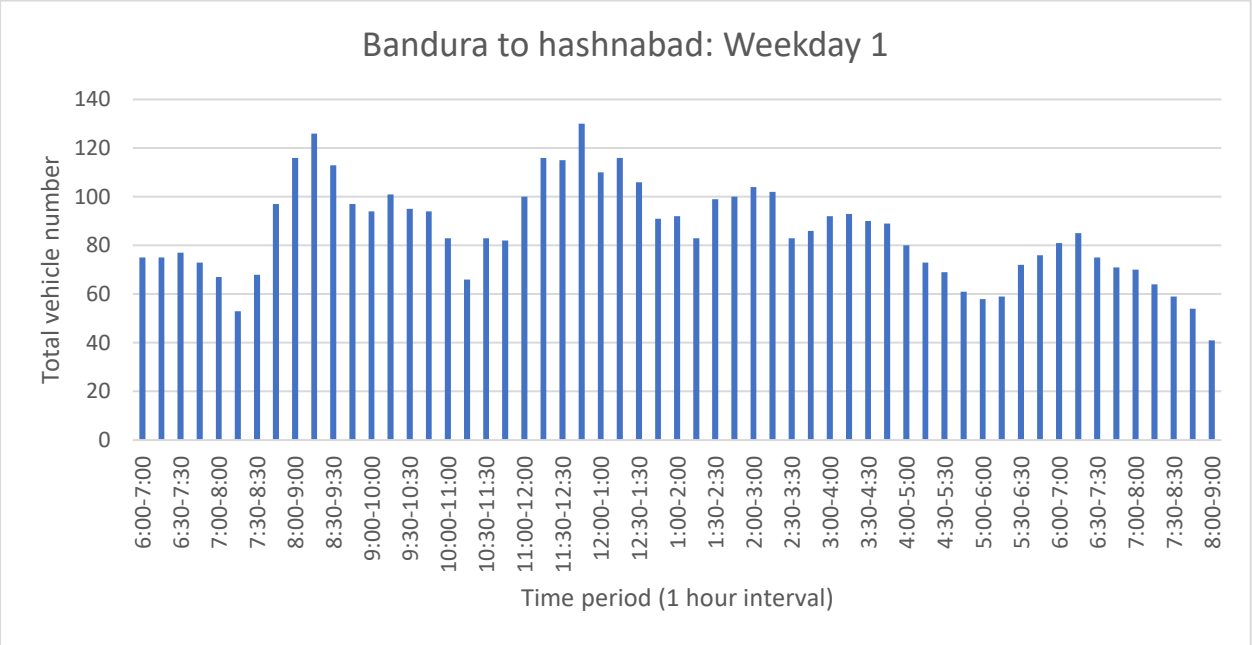

Hashnabad to bandura: Friday
Volume
120
100
80
60
40
20
0
6:00-7:00
6:30-7:30
7:00-8:00
7:30-8:30
8:00-9:00
8:30-9:30
9:00-10:00
9:30-10:30
10:00-11:00
10:30-11:30
11:00-12:00
11:30-12:30
12:00-1:00
12:30-1:30
1:00-2:00
1:30-2:30
2:00-3:00
2:30-3:30
3:00-4:00
3:30-4:30
4:00-5:00
4:30-5:30
5:00-6:00
5:30-6:30
6:00-7:00
6:30-7:30
7:00-8:00
7:30-8:30
8:00-9:00
Time interval



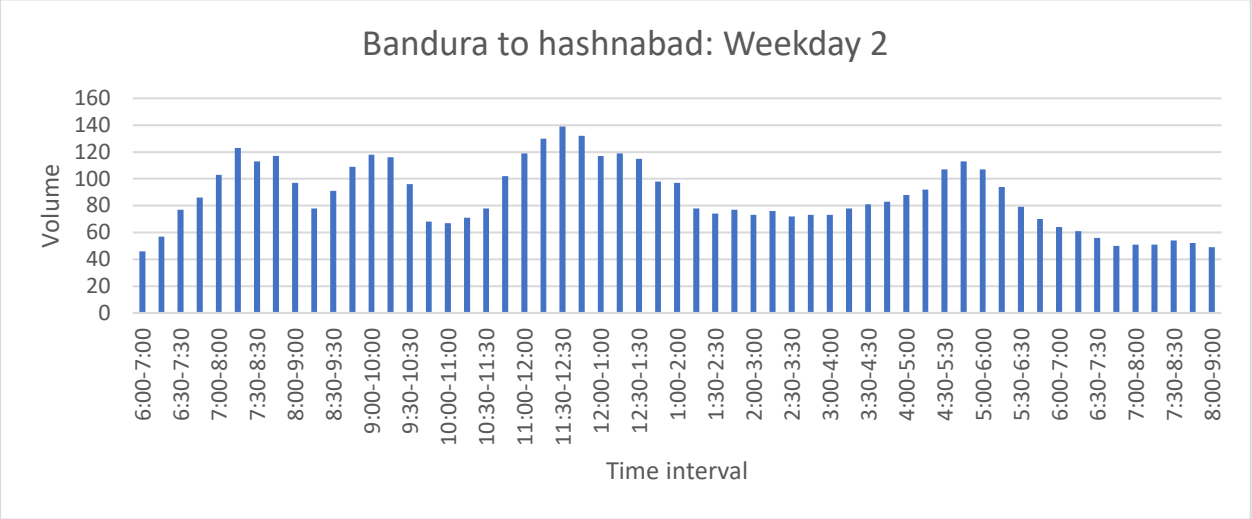
Point 2: Weekday 1

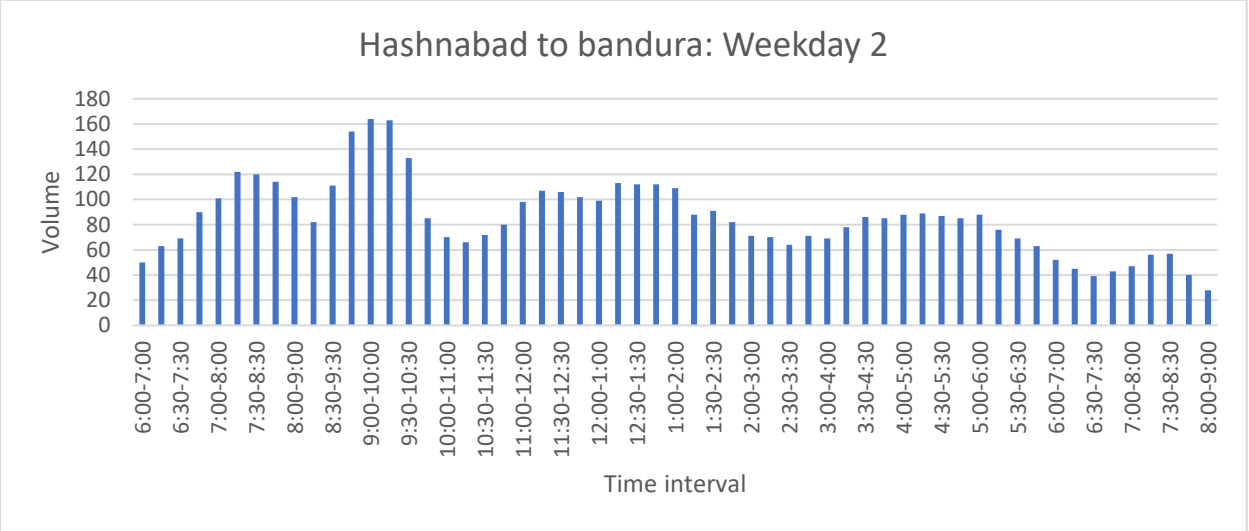


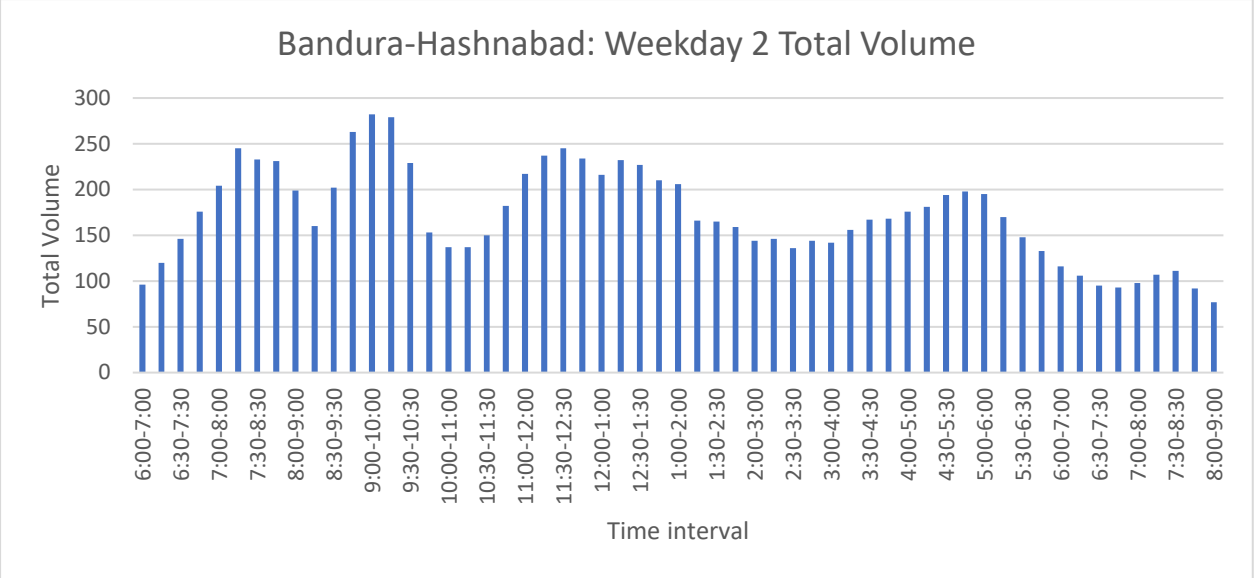

Bandura-Hashnabad: Weekday 1 Total Volume
Volume
300
250
200
150
100
50
0
6:00-7:00
6:30-7:30
7:00-8:00
7:30-8:30
8:00-9:00
8:30-9:30
9:00-10:00
9:30-10:30
10:00-11:00
10:30-11:30
11:00-12:00
11:30-12:30
12:00-1:00
12:30-1:30
1:00-2:00
1:30-2:30
2:00-3:00
2:30-3:30
3:00-4:00
3:30-4:30
4:00-5:00
4:30-5:30
5:00-6:00
5:30-6:30
6:00-7:00
6:30-7:30
7:00-8:00
7:30-8:30
8:00-9:00
Time interval


Bandura to hashnabad: Weekday 1
Total vehicle number
140
120
100
80
60
40
20
0
6:00-7:00
6:30-7:30
7:00-8:00
7:30-8:30
8:00-9:00
8:30-9:30
9:00-10:00
9:30-10:30
10:00-11:00
10:30-11:30
11:00-12:00
11:30-12:30
12:00-1:00
12:30-1:30
1:00-2:00
1:30-2:30
2:00-3:00
2:30-3:30
3:00-4:00
3:30-4:30
4:00-5:00
4:30-5:30
5:00-6:00
5:30-6:30
6:00-7:00
6:30-7:30
7:00-8:00
7:30-8:30
8:00-9:00
Time period (1 hour interval)

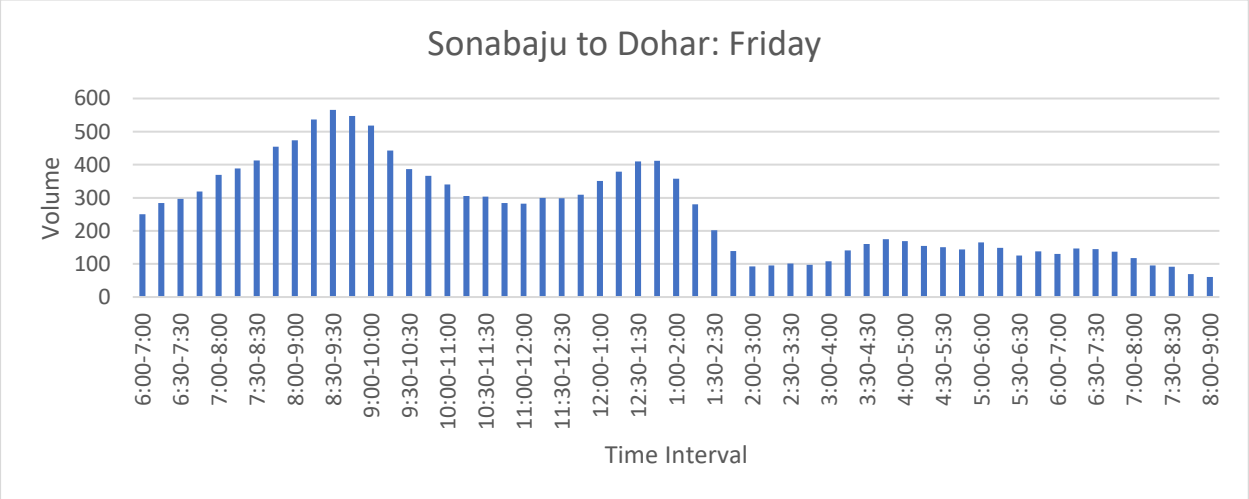
Point 2: Weekday 2

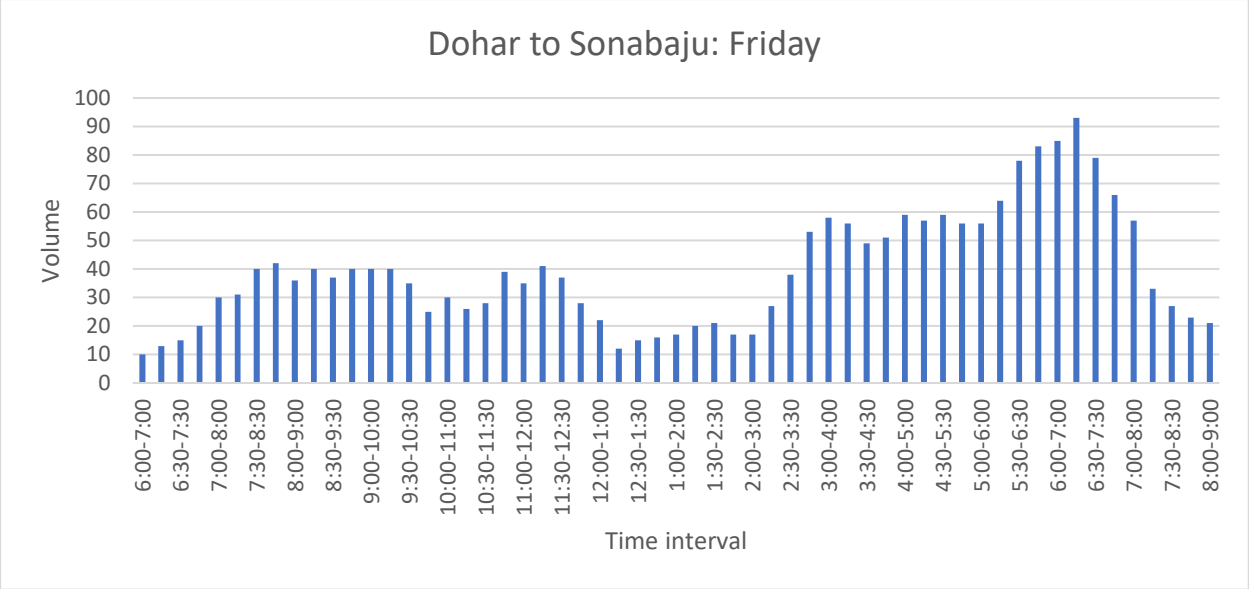


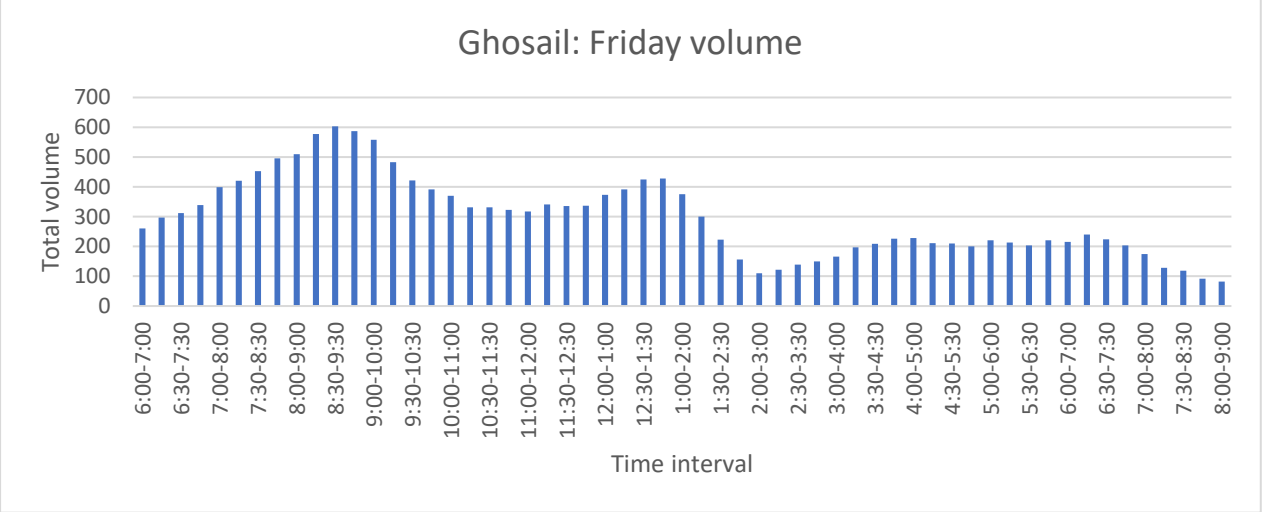




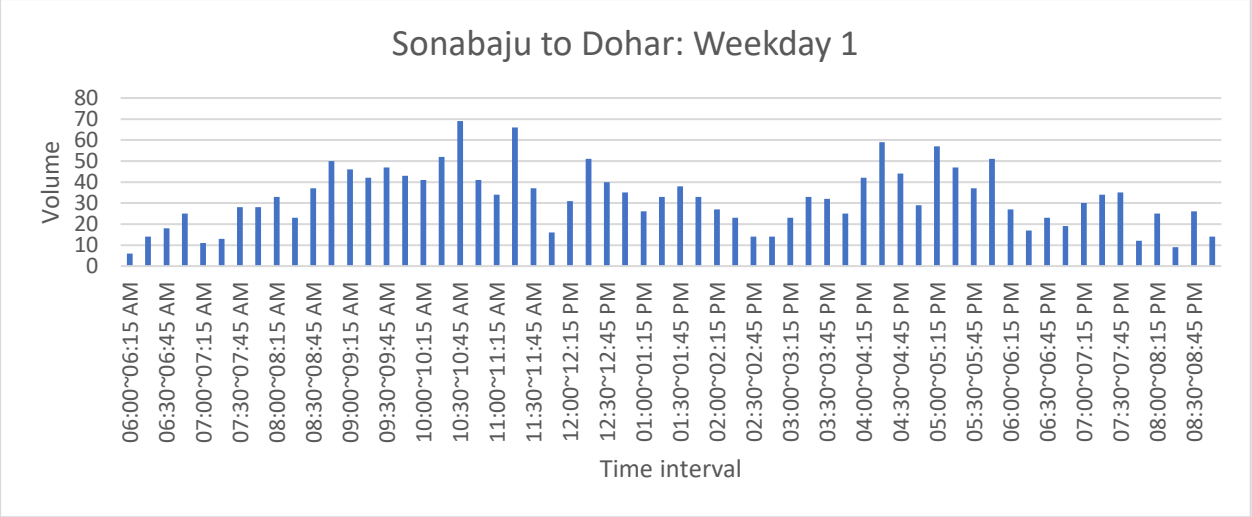
Point 3: Friday

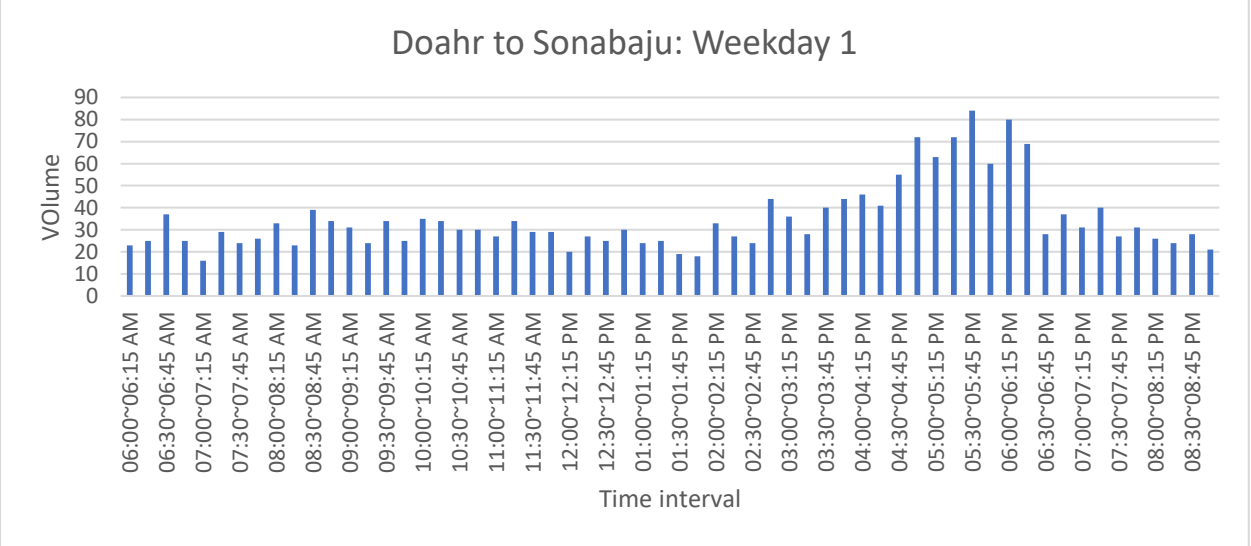


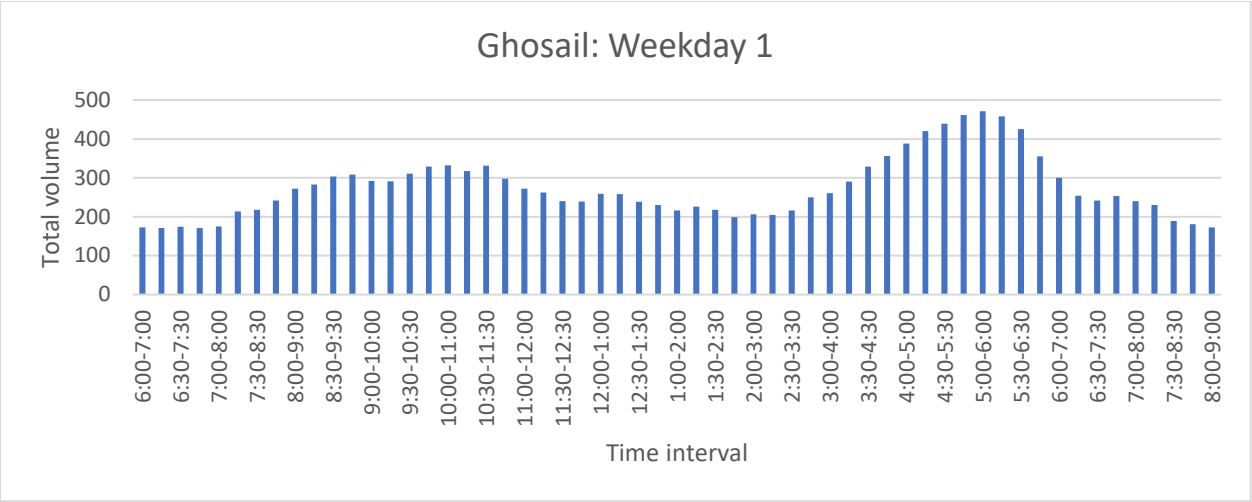




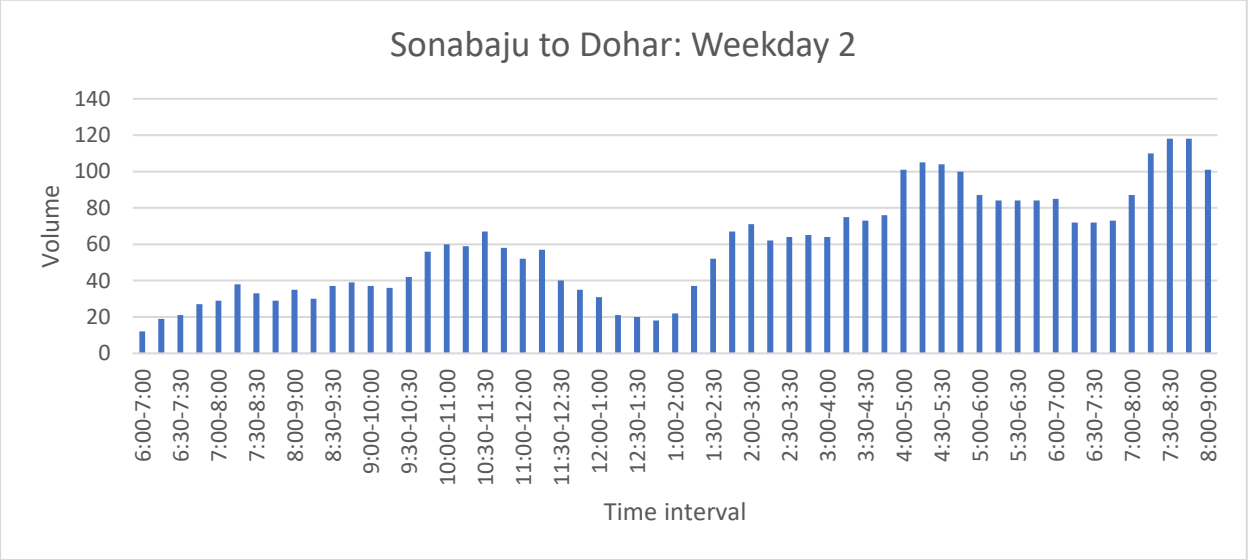
Point 3: Weekday 1

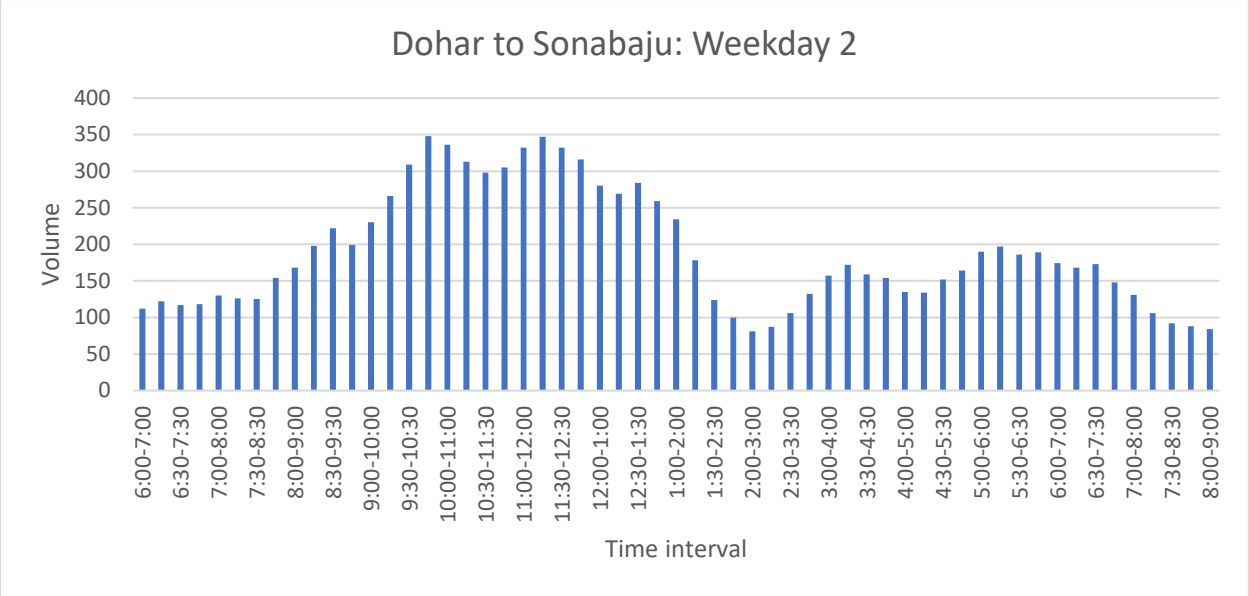

Sonabaju to Dohar: Weekday 1
Volume
80
70
60
50
40
30
20
10
0
06:00~06:15 AM
06:30~06:45 AM
07:00~07:15 AM
07:30~07:45 AM
08:00~08:15 AM
08:30~08:45 AM
09:00~09:15 AM
09:30~09:45 AM
10:00~10:15 AM
10:30~10:45 AM
11:00~11:15 AM
11:30~11:45 AM
12:00~12:15 PM
12:30~12:45 PM
01:00~01:15 PM
01:30~01:45 PM
02:00~02:15 PM
02:30~02:45 PM
03:00~03:15 PM
03:30~03:45 PM
04:00~04:15 PM
04:30~04:45 PM
05:00~05:15 PM
05:30~05:45 PM
06:00~06:15 PM
06:30~06:45 PM
07:00~07:15 PM
07:30~07:45 PM
08:00~08:15 PM
08:30~08:45 PM
Time interval

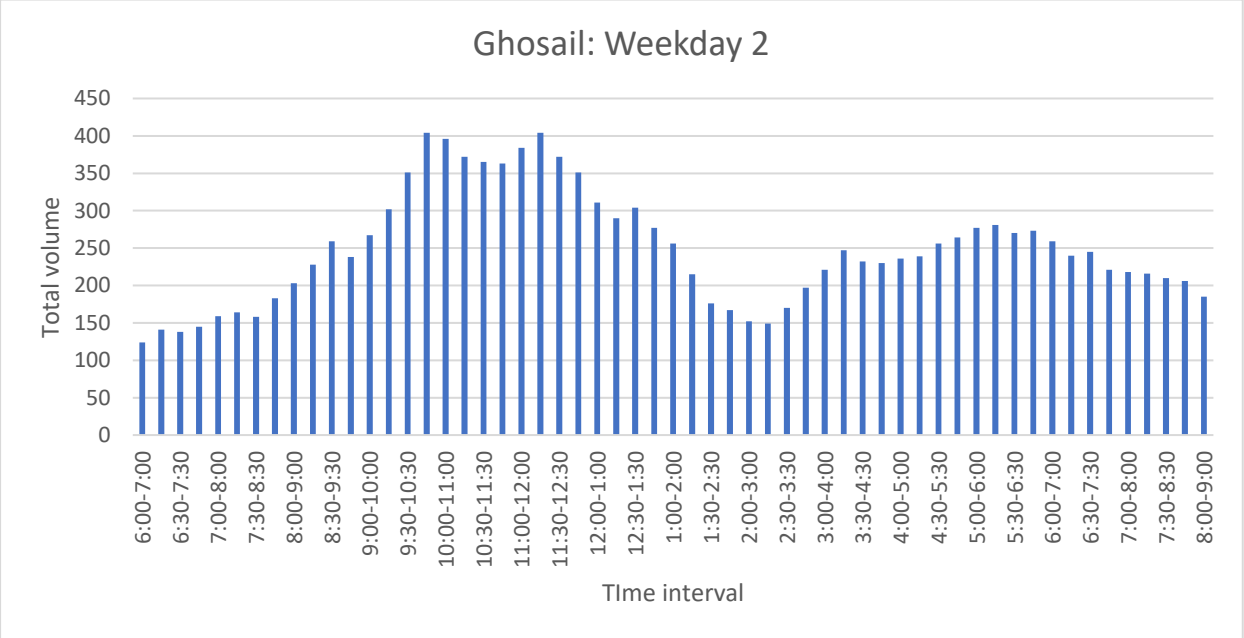

Doahr to Sonabaju: Weekday 1
VOlume
90
80
70
60
50
40
30
20
10
0
06:00~06:15 AM
06:30~06:45 AM
07:00~07:15 AM
07:30~07:45 AM
08:00~08:15 AM
08:30~08:45 AM
09:00~09:15 AM
09:30~09:45 AM
10:00~10:15 AM
10:30~10:45 AM
11:00~11:15 AM
11:30~11:45 AM
12:00~12:15 PM
12:30~12:45 PM
01:00~01:15 PM
01:30~01:45 PM
02:00~02:15 PM
02:30~02:45 PM
03:00~03:15 PM
03:30~03:45 PM
04:00~04:15 PM
04:30~04:45 PM
05:00~05:15 PM
05:30~05:45 PM
06:00~06:15 PM
06:30~06:45 PM
07:00~07:15 PM
07:30~07:45 PM
08:00~08:15 PM
08:30~08:45 PM
Time interval



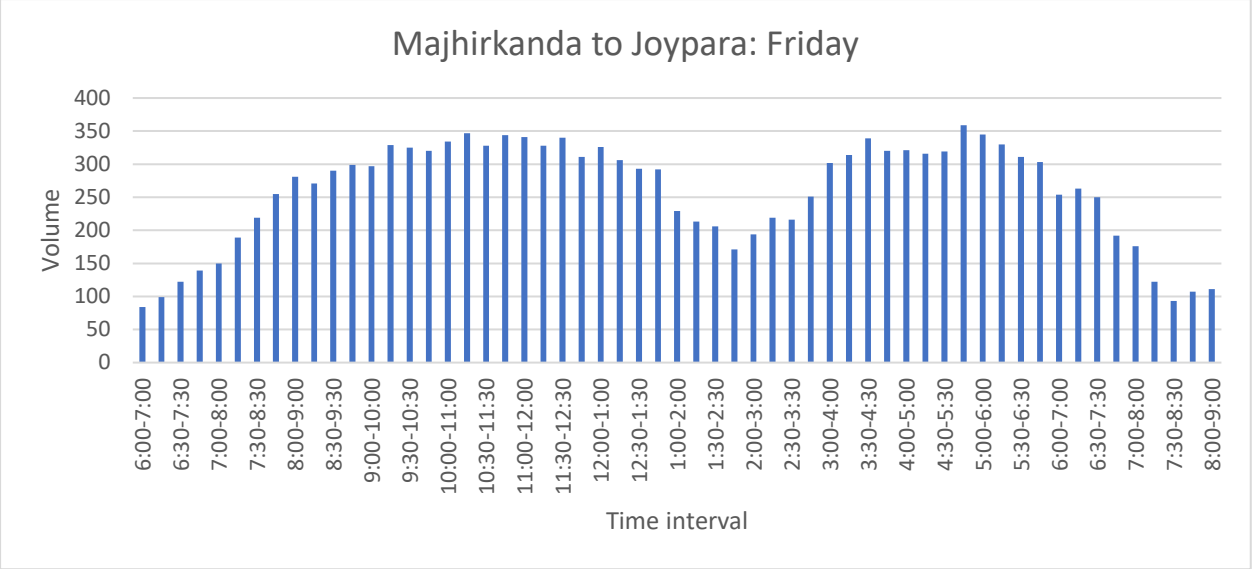
Point 3: Weekday 2

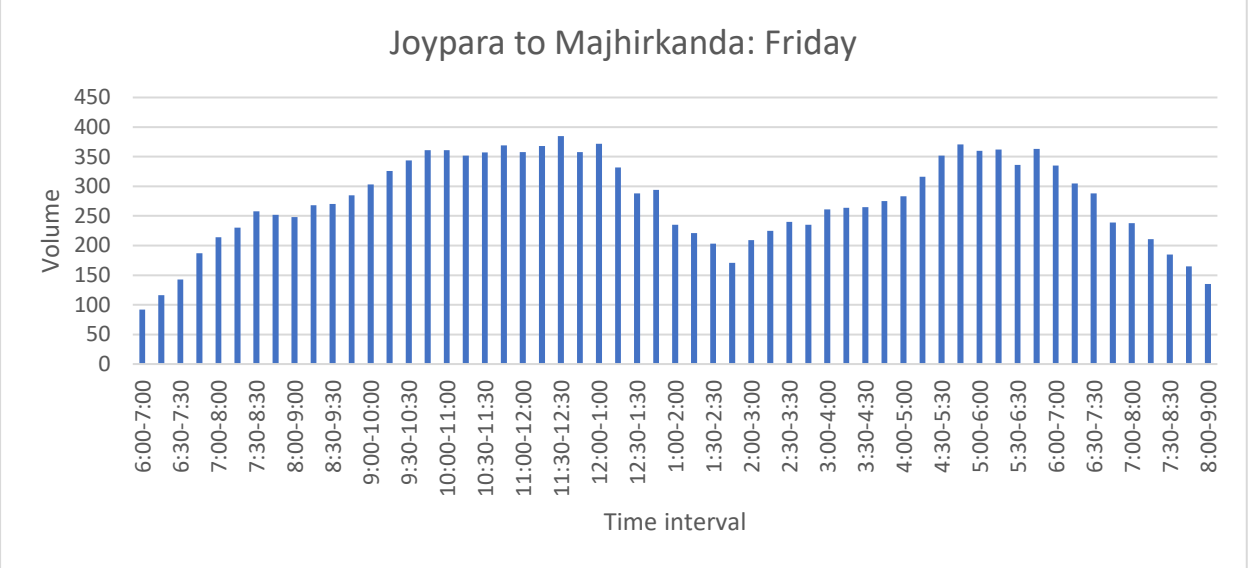






Point 4: Friday


Majhirkanda to Joypara: Friday
Volume
400
350
300
250
200
150
100
50
0
6:00-7:00
6:30-7:30
7:00-8:00
7:30-8:30
8:00-9:00
8:30-9:30
9:00-10:00
9:30-10:30
10:00-11:00
10:30-11:30
11:00-12:00
11:30-12:30
12:00-1:00
12:30-1:30
1:00-2:00
1:30-2:30
2:00-3:00
2:30-3:30
3:00-4:00
3:30-4:30
4:00-5:00
4:30-5:30
5:00-6:00
5:30-6:30
6:00-7:00
6:30-7:30
7:00-8:00
7:30-8:30
8:00-9:00
Time interval


Joypara to Majhirkanda: Friday
Volume
450
400
350
300
250
200
150
100
50
0
6:00-7:00
6:30-7:30
7:00-8:00
7:30-8:30
8:00-9:00
8:30-9:30
9:00-10:00
9:30-10:30
10:00-11:00
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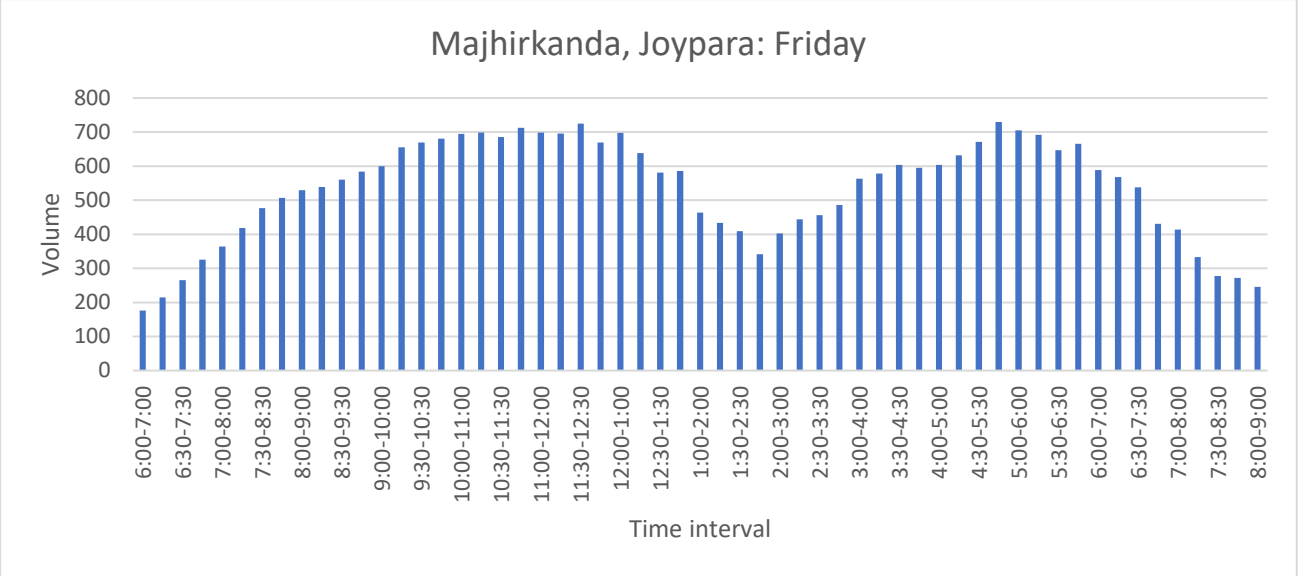
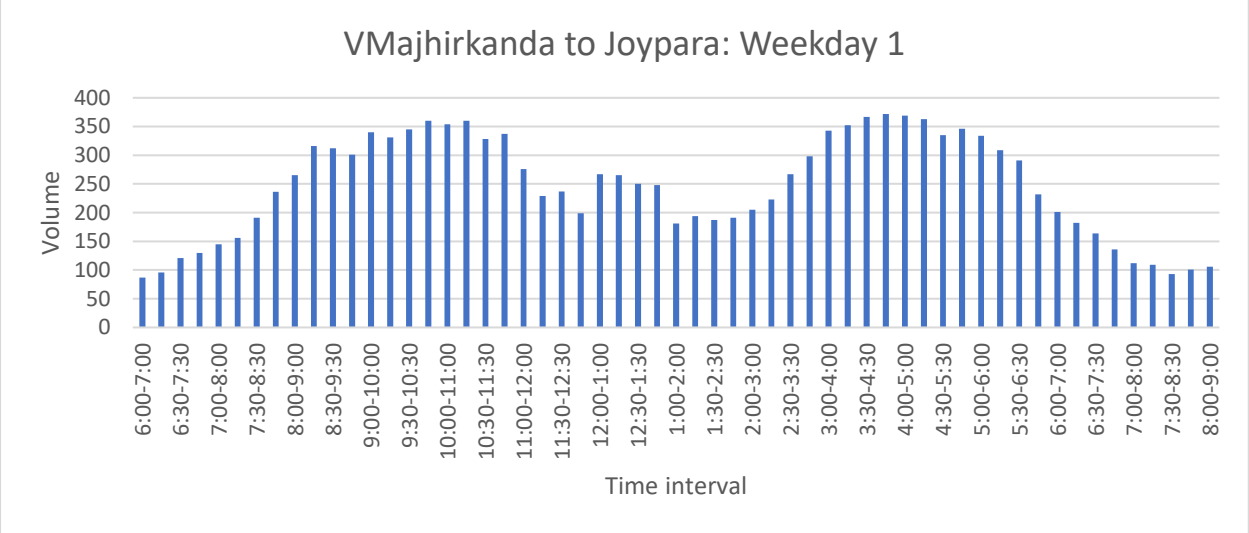
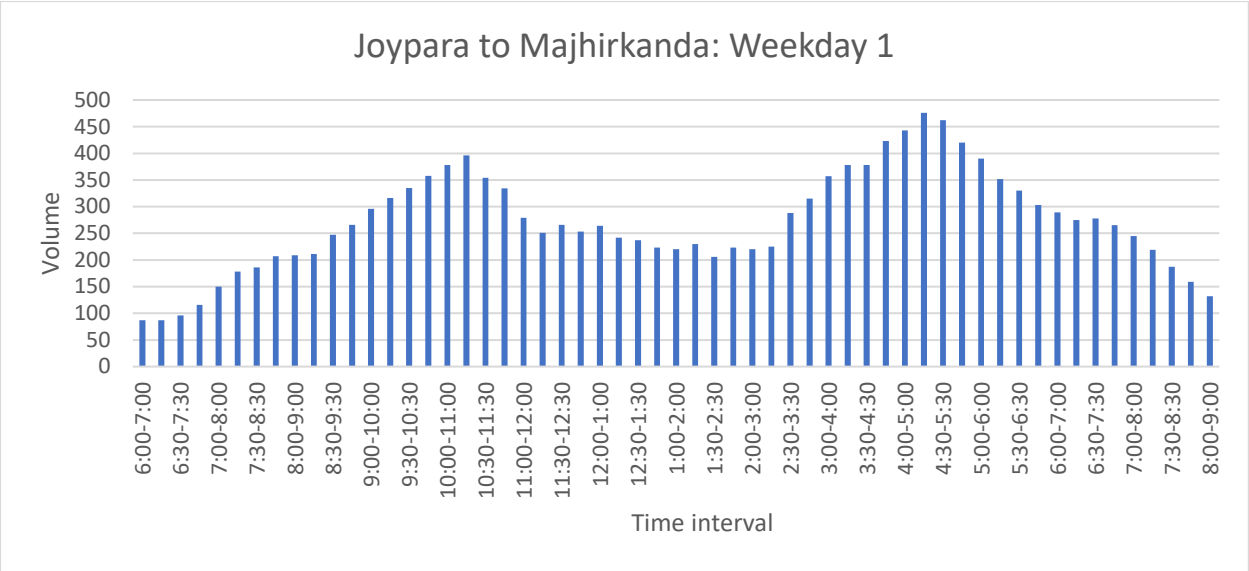
2:00-3:00
2:30-3:30
3:00-4:00
3:30-4:30
4:00-5:00
4:30-5:30
5:00-6:00
5:30-6:30
6:00-7:00
6:30-7:30
7:00-8:00
7:30-8:30
8:00-9:00
Time interval



Point 4: Weekday 1




Joypara to Majhirkanda: Weekday 1
Volume
500
450
400
350
300
250
200
150
100
50
0
6:00-7:00
6:30-7:30
7:00-8:00
7:30-8:30
8:00-9:00
8:30-9:30
9:00-10:00
9:30-10:30
10:00-11:00
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11:00-12:00
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1:00-2:00
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2:00-3:00
2:30-3:30
3:00-4:00
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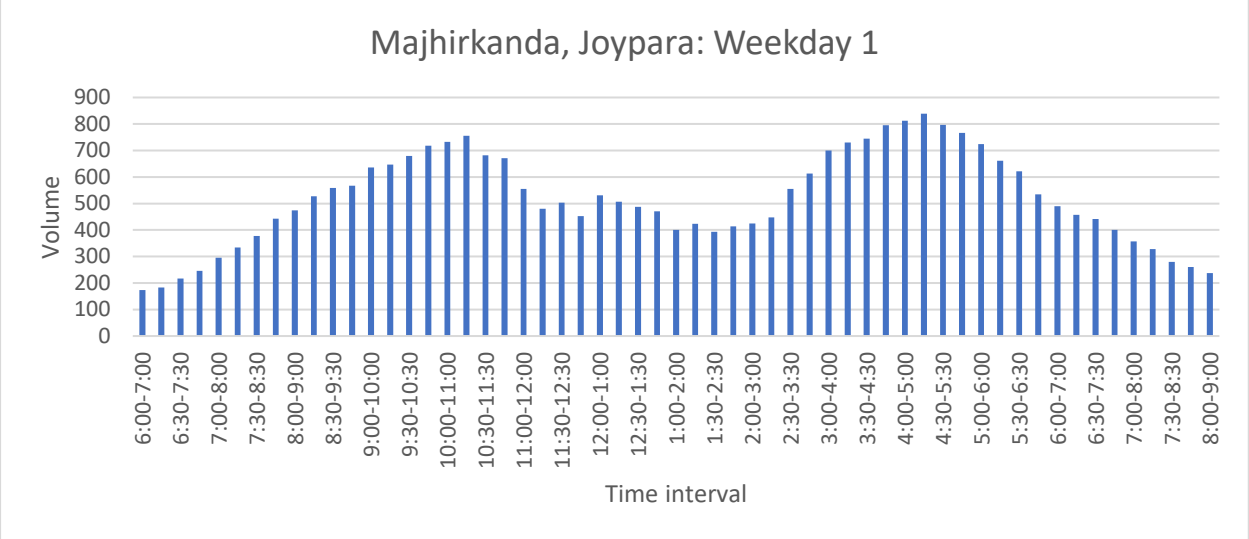
4:00-5:00
4:30-5:30
5:00-6:00
5:30-6:30
6:00-7:00
6:30-7:30
7:00-8:00
7:30-8:30
8:00-9:00
Time interval


Majhirkanda, Joypara: Weekday 1
Volume
900
800
700
600
500
400
300
200
100
0
6:00-7:00
6:30-7:30
7:00-8:00
7:30-8:30
8:00-9:00
8:30-9:30
9:00-10:00
9:30-10:30
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1:00-2:00
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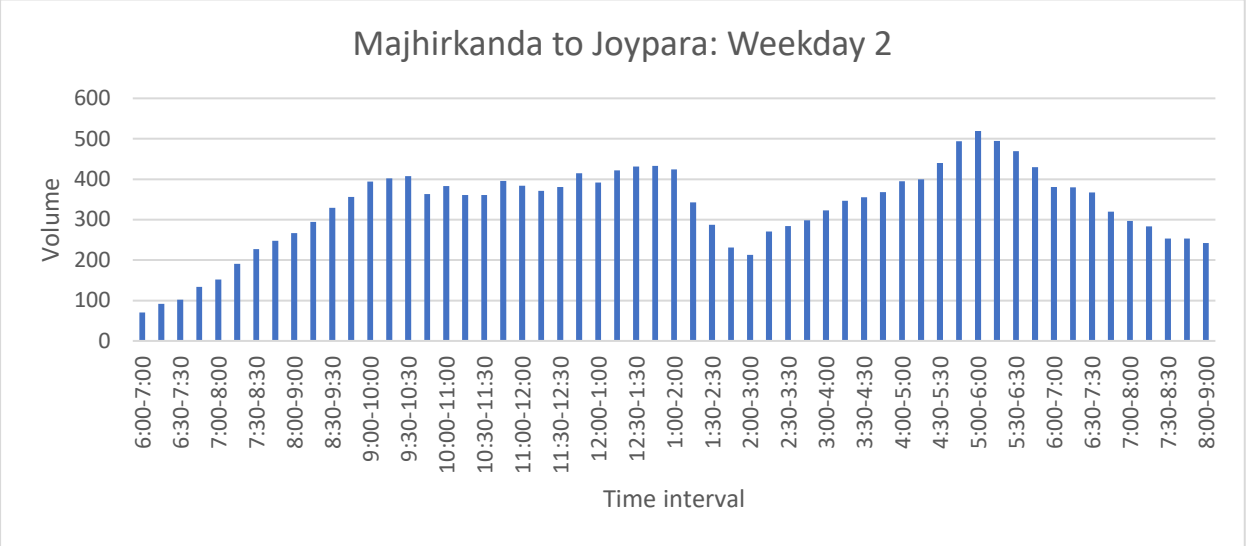
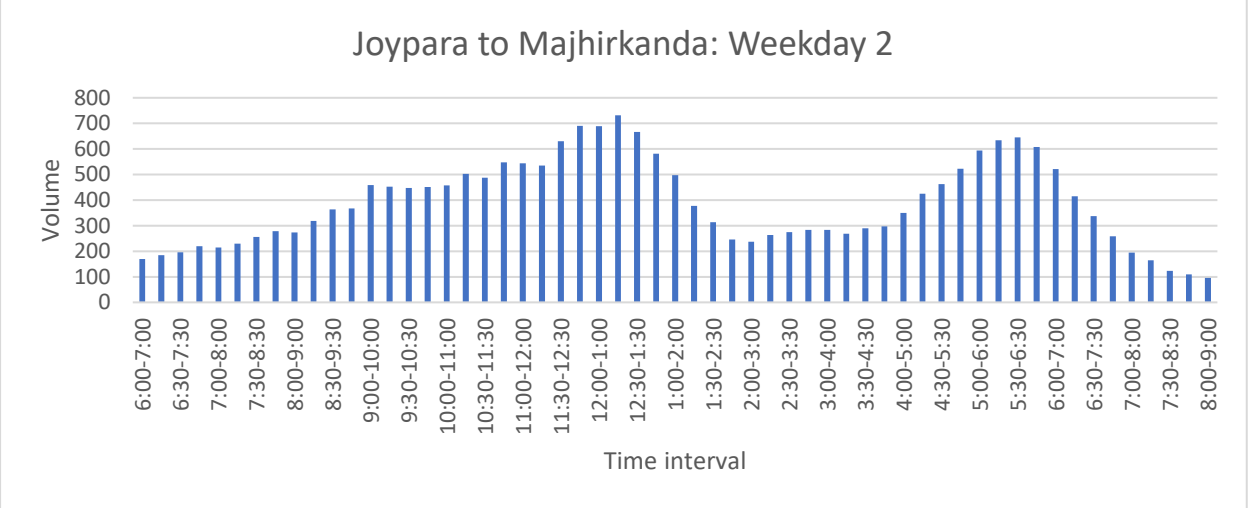
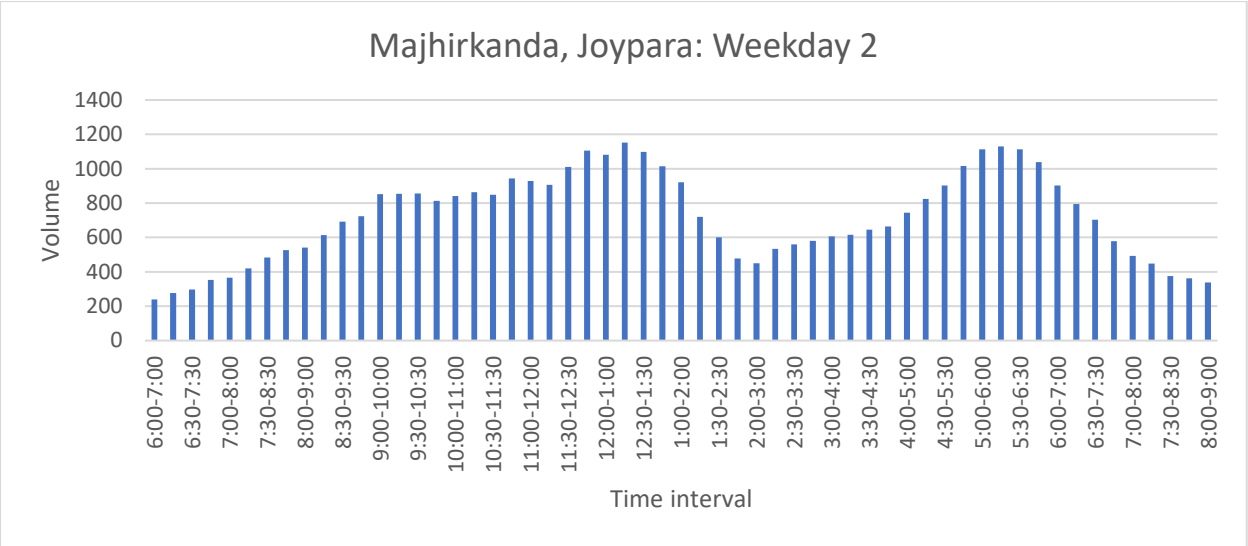
5:00-6:00
5:30-6:30
6:00-7:00
6:30-7:30
7:00-8:00
7:30-8:30
8:00-9:00
Time interval

Point 4: Weekday 2






Majhirkanda, Joypara: Weekday 2
Volume
1400
1200
1000
800
600
400
200
0
6:00-7:00
6:30-7:30
7:00-8:00
7:30-8:30
8:00-9:00
8:30-9:30
9:00-10:00
9:30-10:30
10:00-11:00
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12:00-1:00
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1:00-2:00
1:30-2:30
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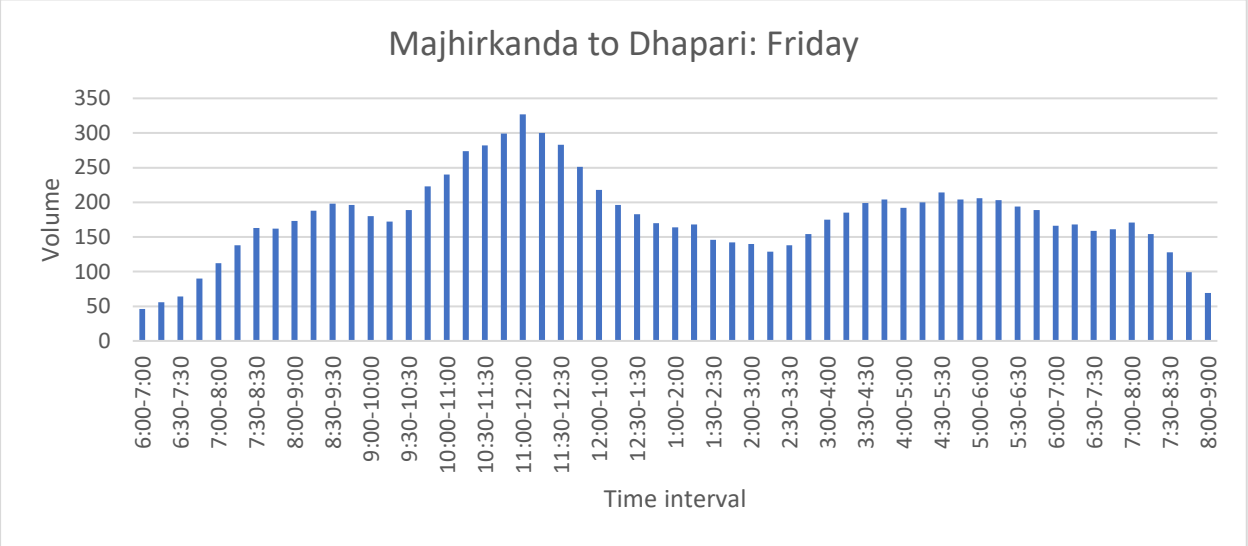
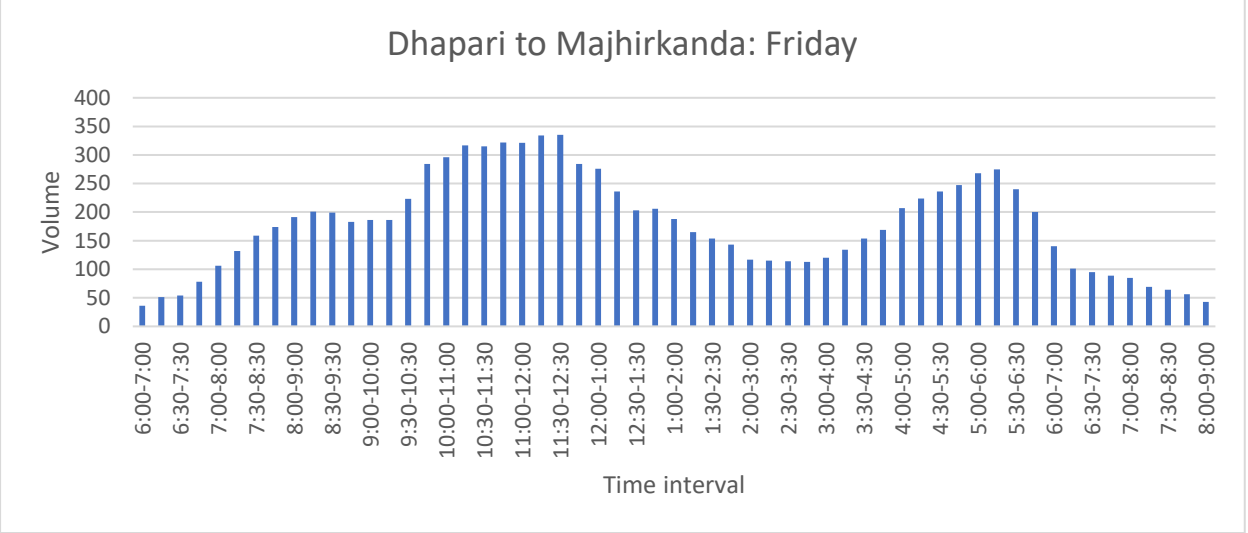
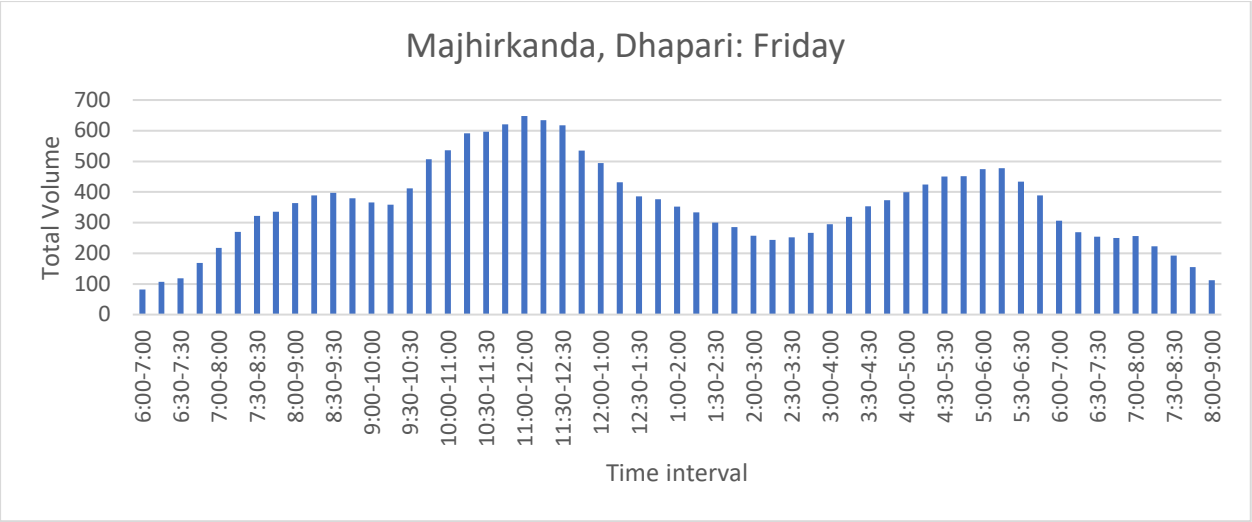
4:00-5:00
4:30-5:30
5:00-6:00
5:30-6:30
6:00-7:00
6:30-7:30
7:00-8:00
7:30-8:30
8:00-9:00
Time interval

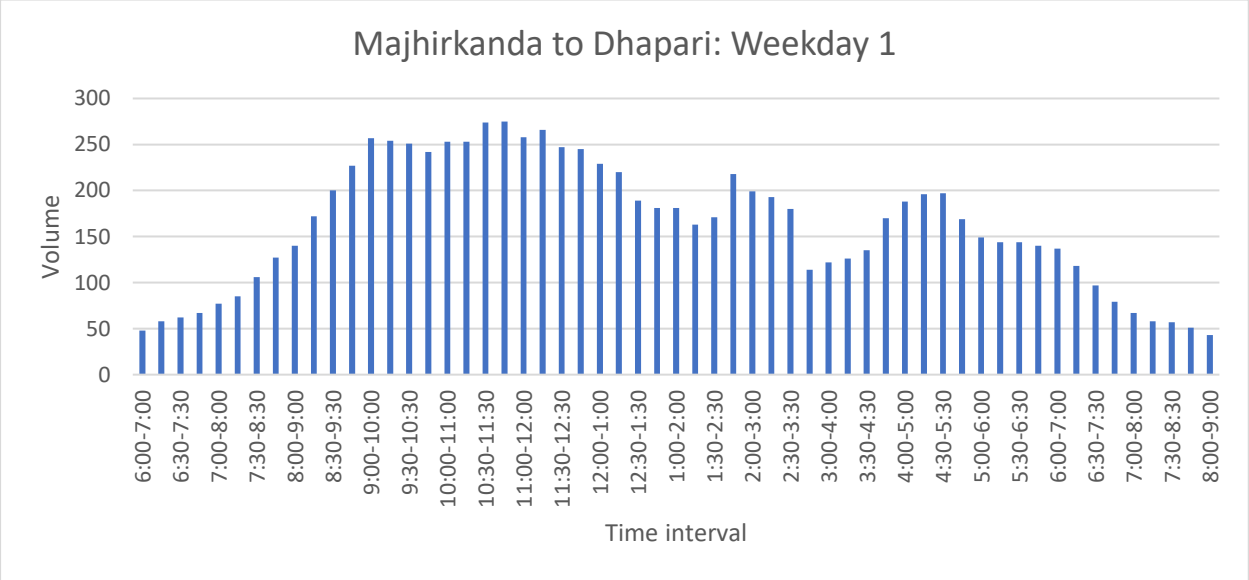
Point 5: Friday

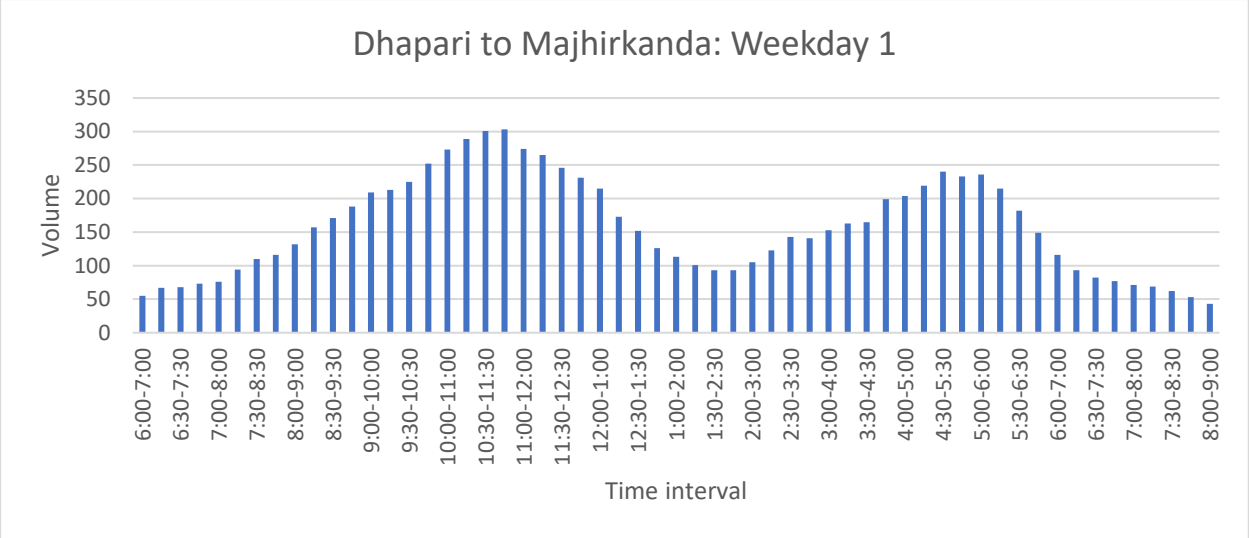


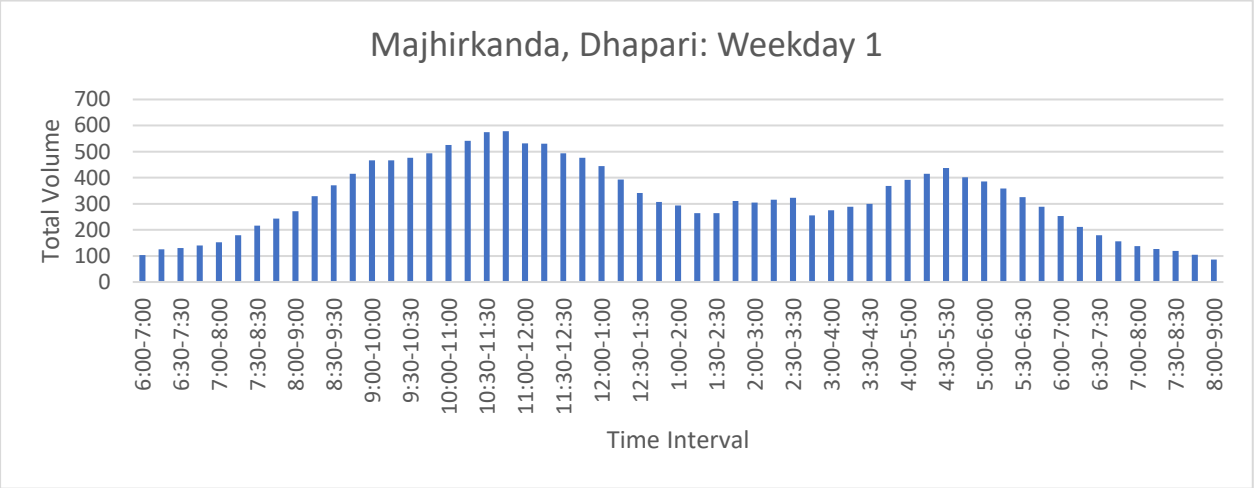




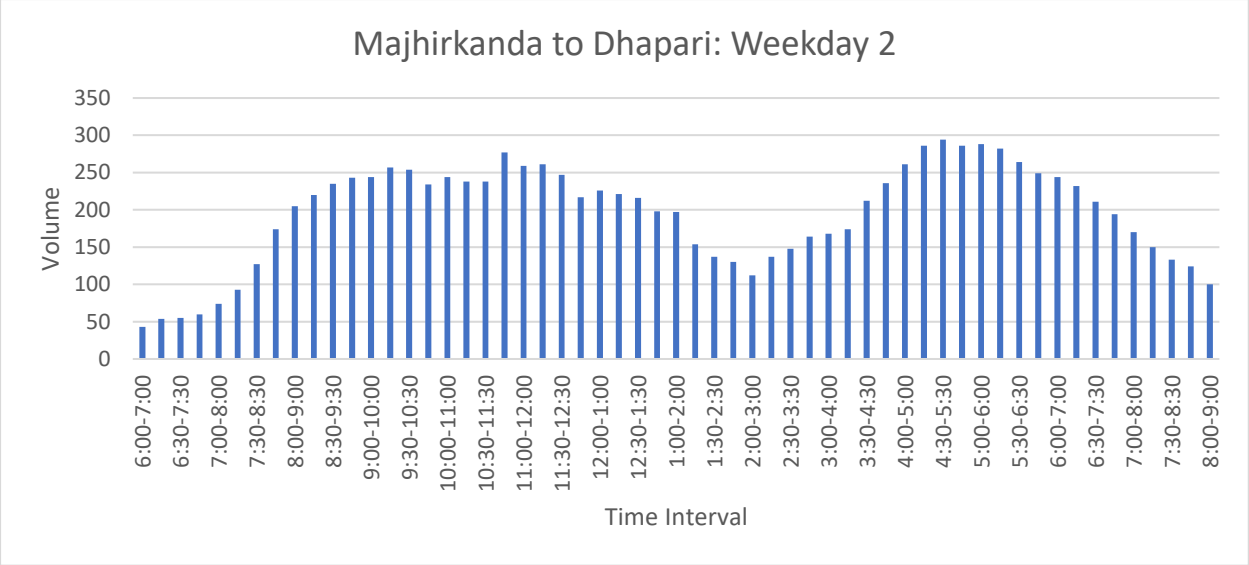
Point 5: Weekday 1

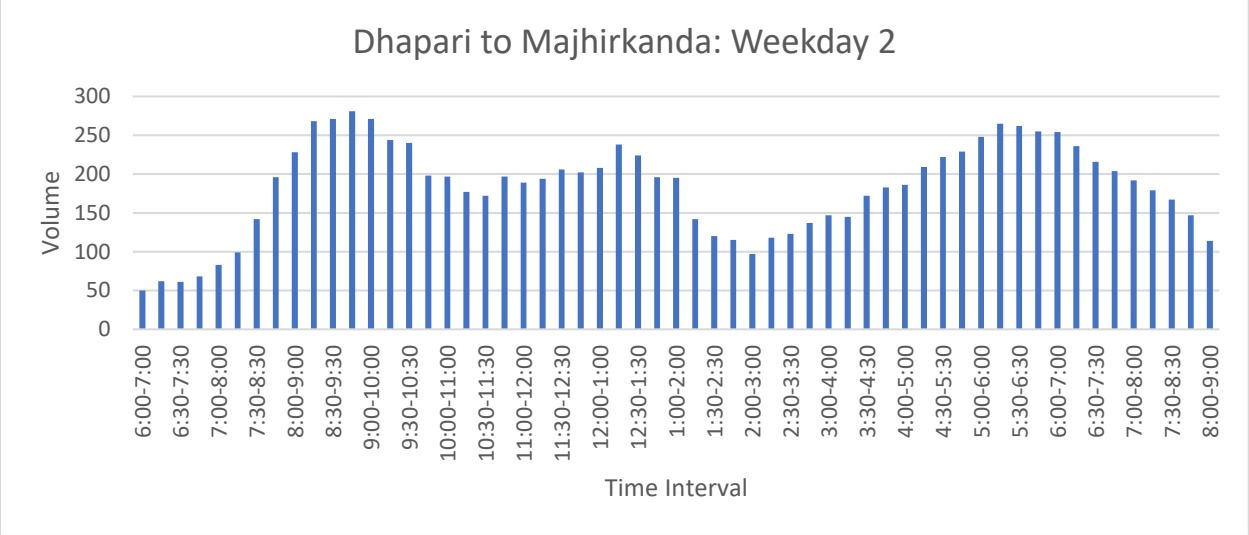






Point 5: Weekday 2


Majhirkanda to Dhapari: Weekday 2
Volume
350
300
250
200
150
100
50
0
6:00-7:00
6:30-7:30
7:00-8:00
7:30-8:30
8:00-9:00
8:30-9:30
9:00-10:00
9:30-10:30
10:00-11:00
10:30-11:30
11:00-12:00
11:30-12:30
12:00-1:00
12:30-1:30
1:00-2:00
1:30-2:30
2:00-3:00
2:30-3:30
3:00-4:00
3:30-4:30
4:00-5:00
4:30-5:30
5:00-6:00
5:30-6:30
6:00-7:00
6:30-7:30
7:00-8:00
7:30-8:30
8:00-9:00
Time Interval


Dhapari to Majhirkanda: Weekday 2
Volume
300
250
200
150
100
50
0
6:00-7:00
6:30-7:30
7:00-8:00
7:30-8:30
8:00-9:00
8:30-9:30
9:00-10:00
9:30-10:30
10:00-11:00
10:30-11:30
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11:30-12:30
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1:00-2:00
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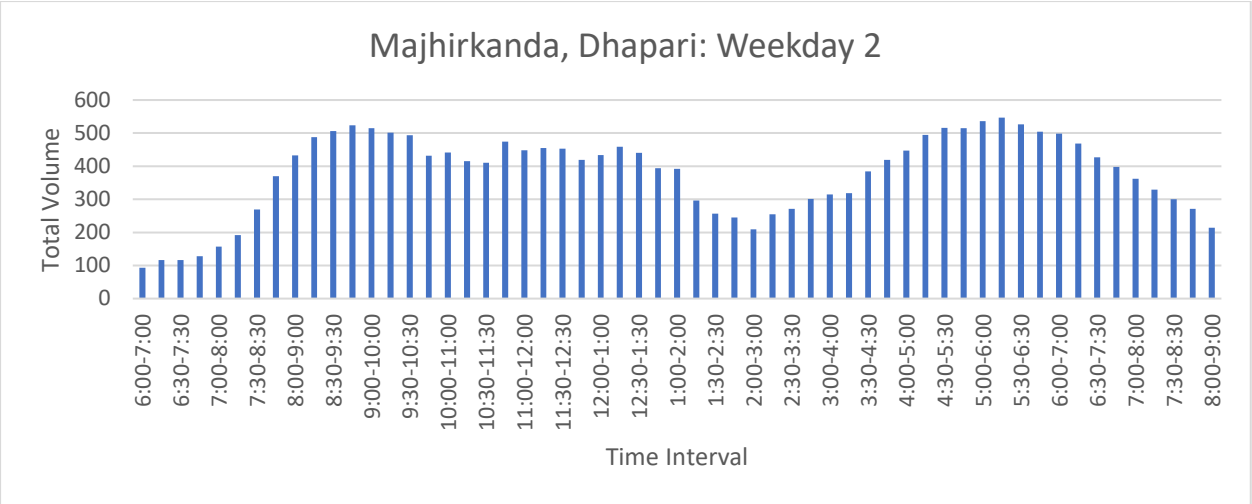
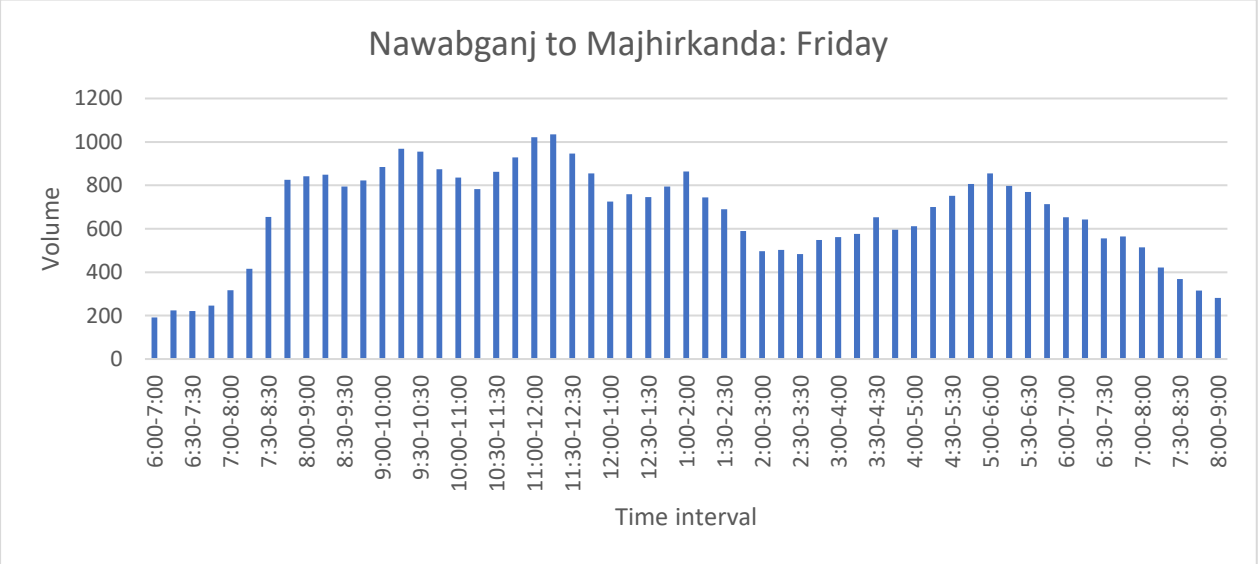
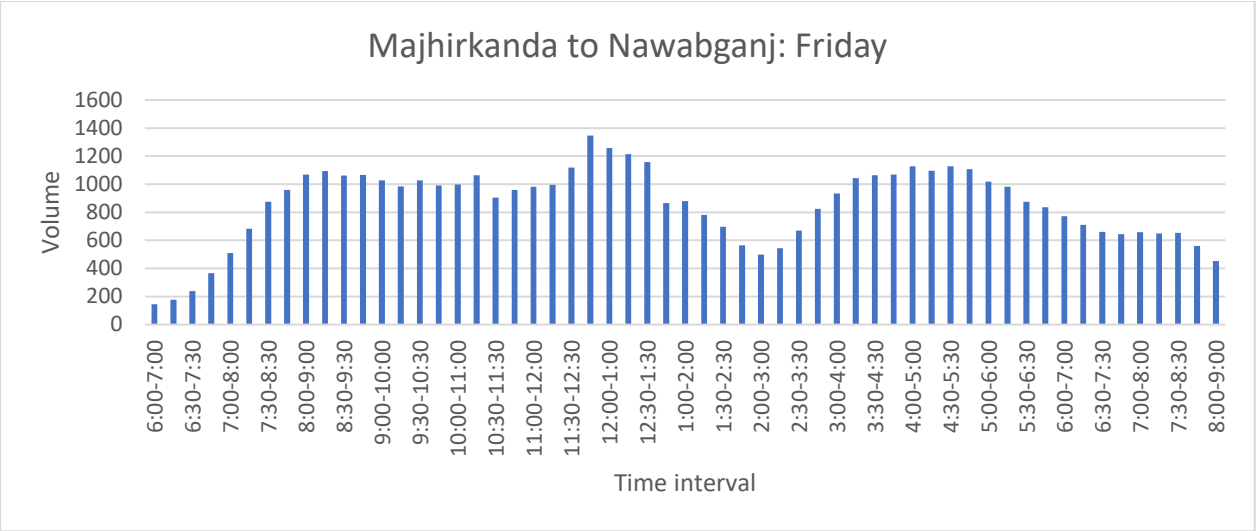
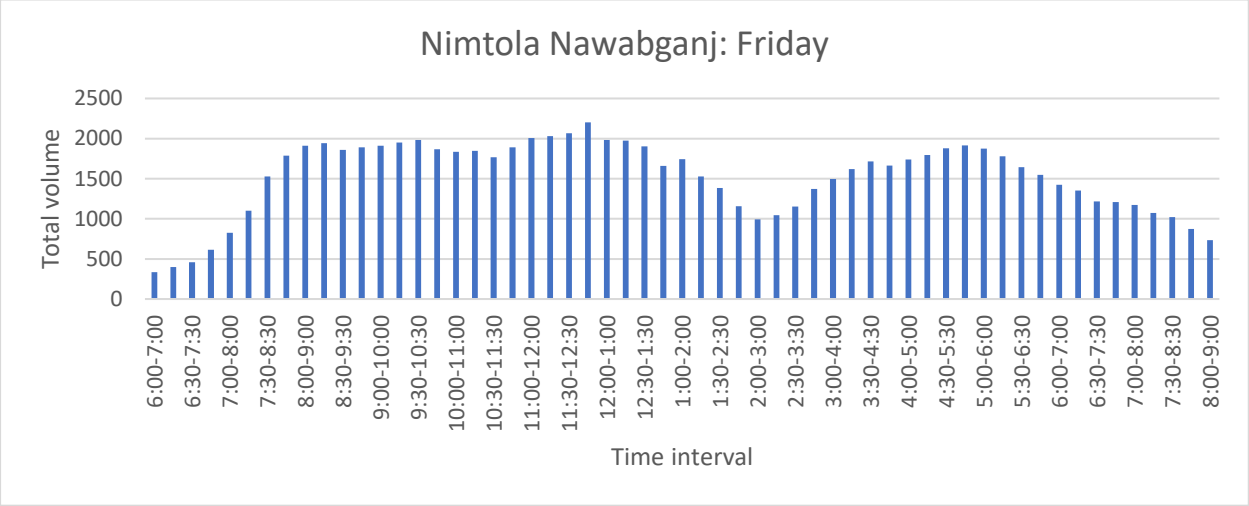
2:00-3:00
2:30-3:30
3:00-4:00
3:30-4:30
4:00-5:00
4:30-5:30
5:00-6:00
5:30-6:30
6:00-7:00
6:30-7:30
7:00-8:00
7:30-8:30
8:00-9:00
Time Interval



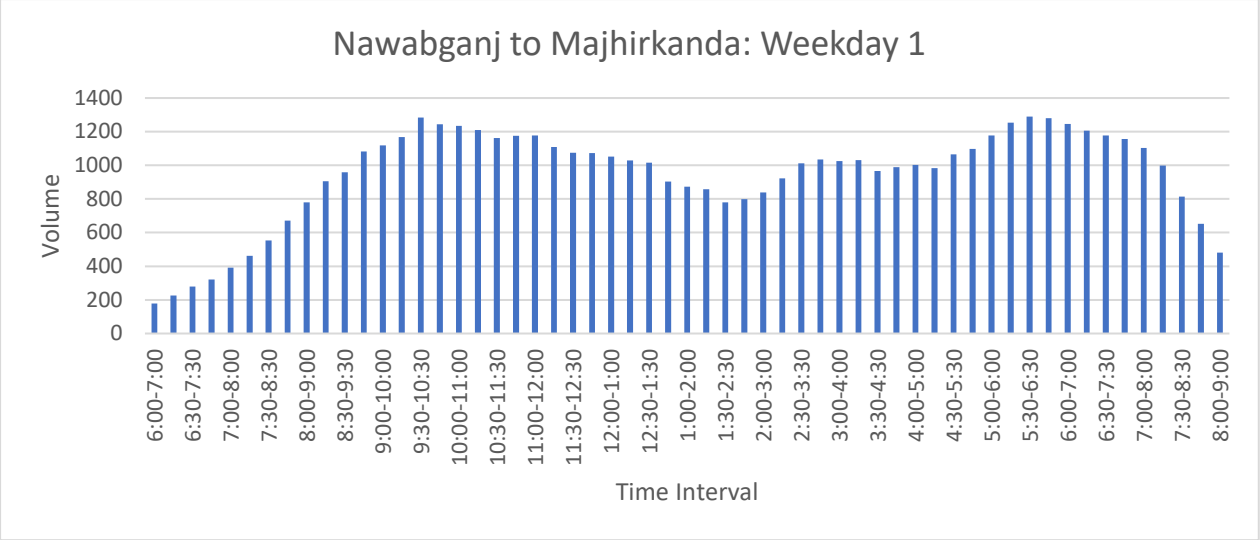
Point 6: Friday

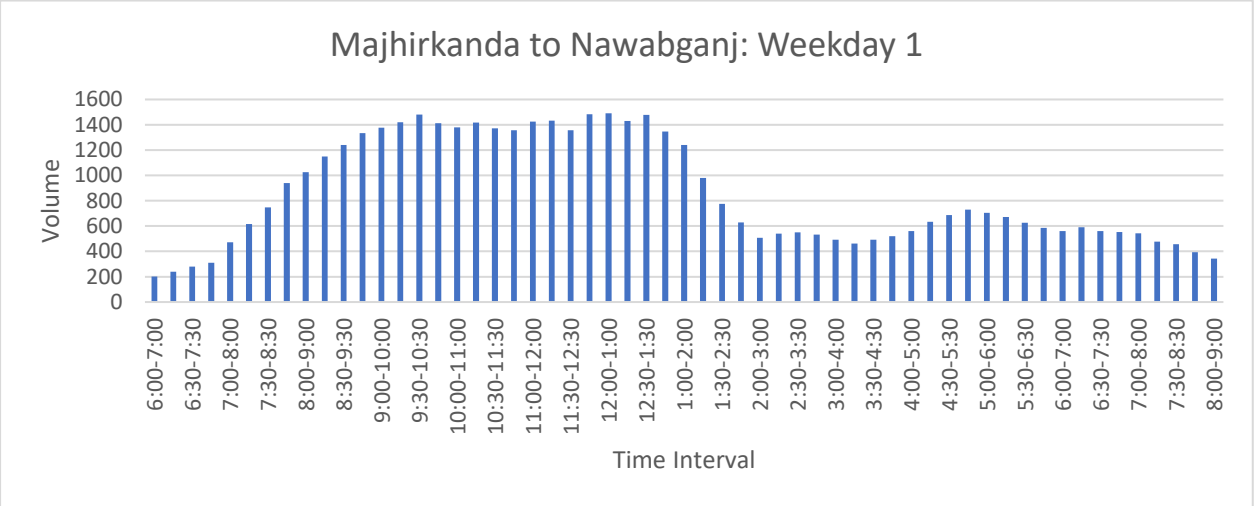






Point 6: Weekday 1


Nawabganj to Majhirkanda: Weekday 1
Volume
1400
1200
1000
800
600
400
200
0
6:00-7:00
6:30-7:30
7:00-8:00
7:30-8:30
8:00-9:00
8:30-9:30
9:00-10:00
9:30-10:30
10:00-11:00
10:30-11:30
11:00-12:00
11:30-12:30
12:00-1:00
12:30-1:30
1:00-2:00
1:30-2:30
2:00-3:00
2:30-3:30
3:00-4:00
3:30-4:30
4:00-5:00
4:30-5:30
5:00-6:00
5:30-6:30
6:00-7:00
6:30-7:30
7:00-8:00
7:30-8:30
8:00-9:00
Time Interval


Majhirkanda to Nawabganj: Weekday 1
Volume
1600
1400
1200
1000
800
600
400
200
0
6:00-7:00
6:30-7:30
7:00-8:00
7:30-8:30
8:00-9:00
8:30-9:30
9:00-10:00
9:30-10:30
10:00-11:00
10:30-11:30
11:00-12:00
11:30-12:30
12:00-1:00
12:30-1:30
1:00-2:00
1:30-2:30
2:00-3:00
2:30-3:30
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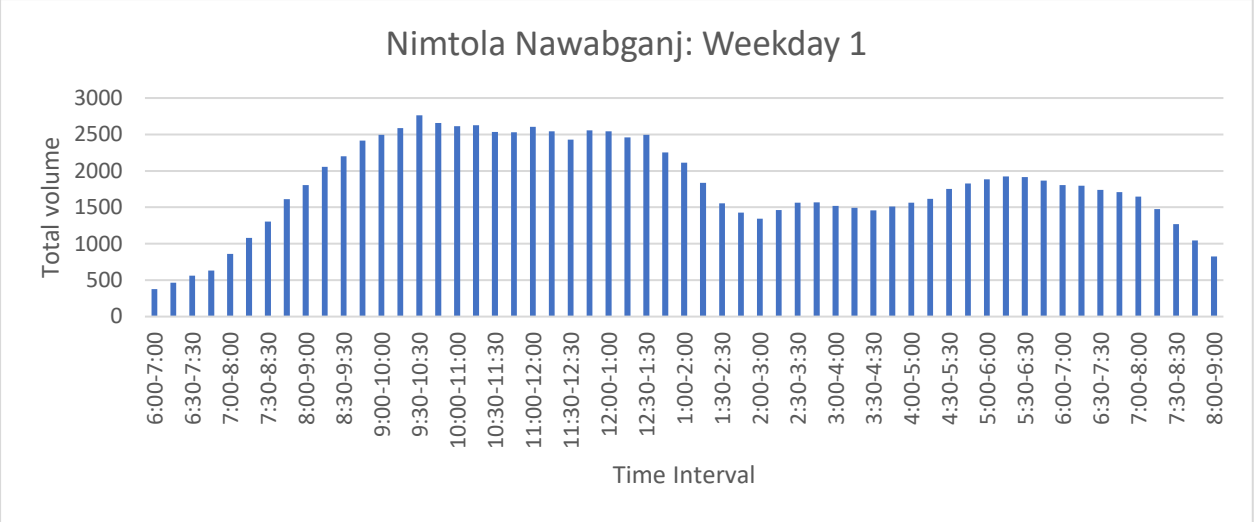
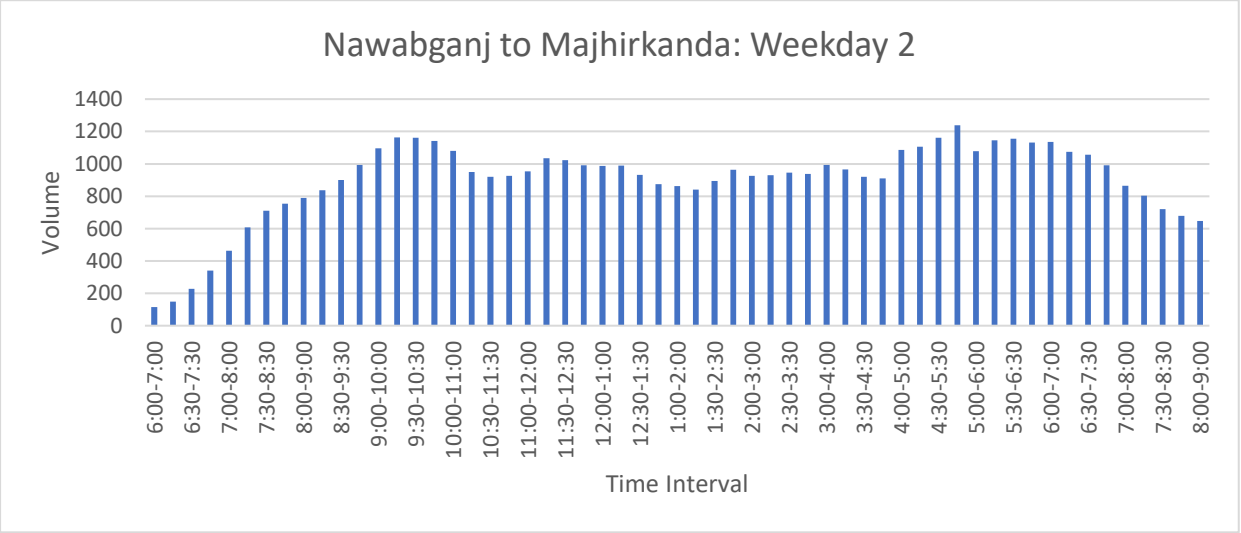
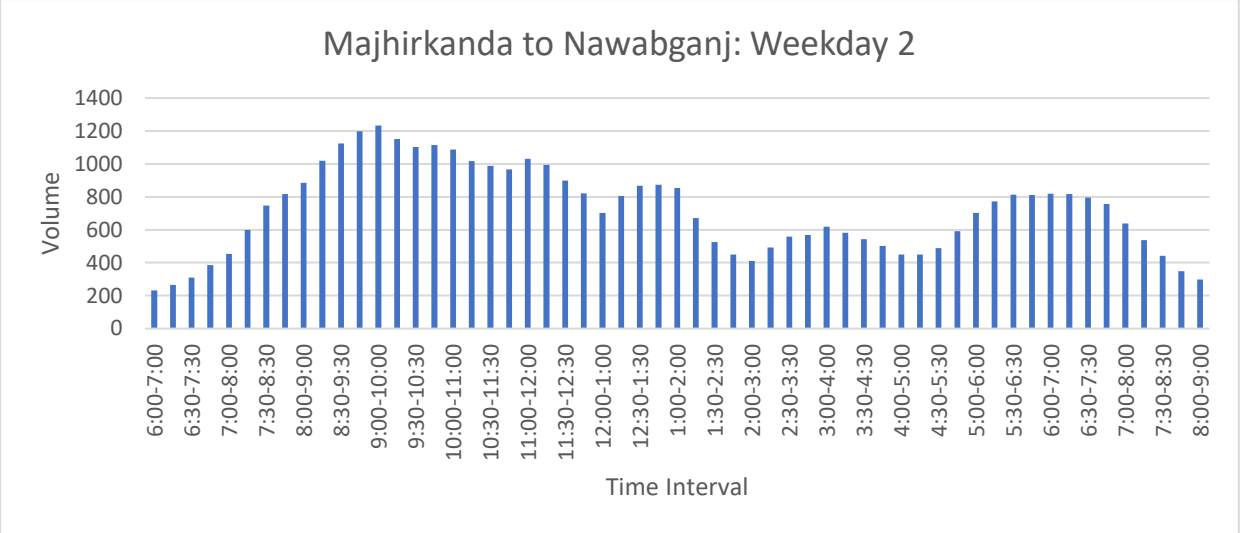
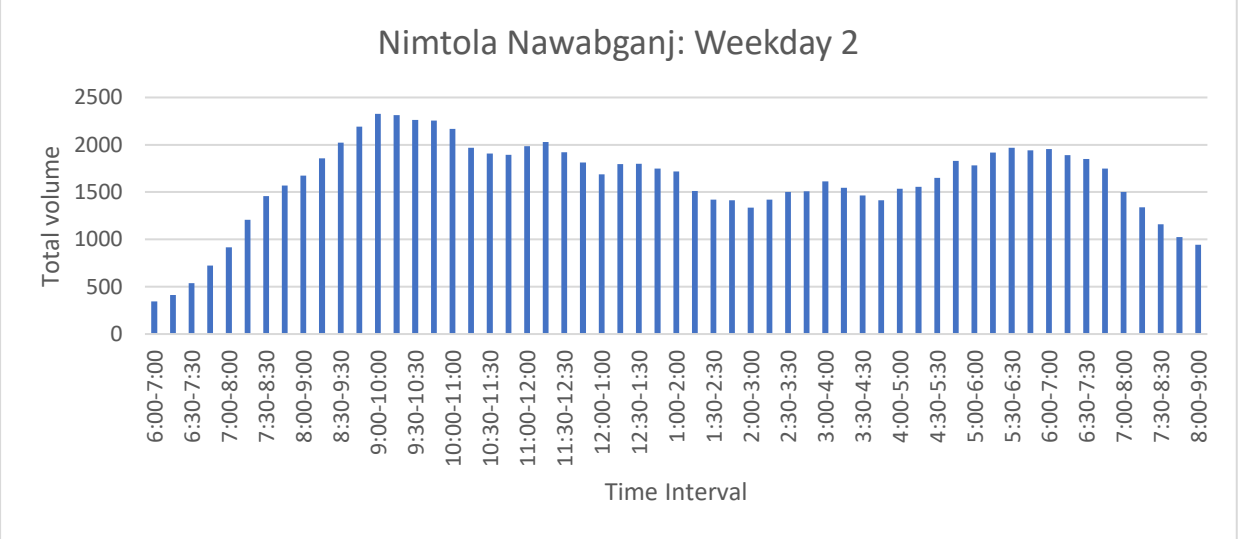
3:30-4:30
4:00-5:00
4:30-5:30
5:00-6:00
5:30-6:30
6:00-7:00
6:30-7:30
7:00-8:00
7:30-8:30
8:00-9:00
Time Interval



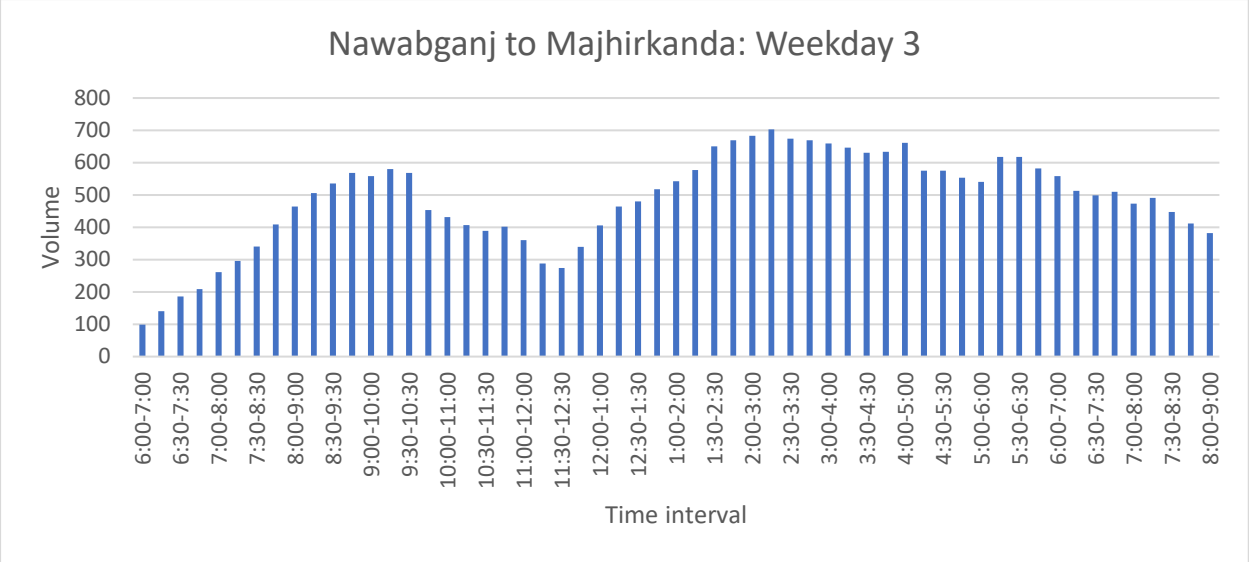
Point 6: Weekday 2







Point 6: Weekday 3


Nawabganj to Majhirkanda: Weekday 3
Volume
800
700
600
500
400
300
200
100
0
6:00-7:00
6:30-7:30
7:00-8:00
7:30-8:30
8:00-9:00
8:30-9:30
9:00-10:00
9:30-10:30
10:00-11:00
10:30-11:30
11:00-12:00
11:30-12:30
12:00-1:00
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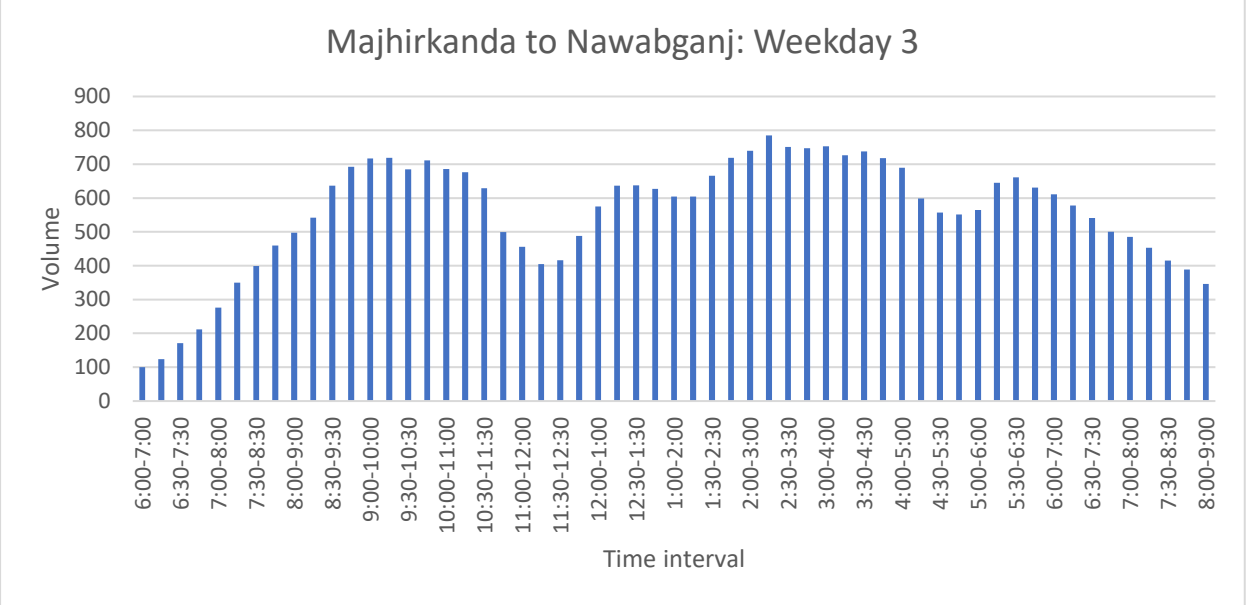
1:00-2:00
1:30-2:30
2:00-3:00
2:30-3:30
3:00-4:00
3:30-4:30
4:00-5:00
4:30-5:30
5:00-6:00
5:30-6:30
6:00-7:00
6:30-7:30
7:00-8:00
7:30-8:30
8:00-9:00
Time interval


Majhirkanda to Nawabganj: Weekday 3
Volume
900
800
700
600
500
400
300
200
100
0
6:00-7:00
6:30-7:30
7:00-8:00
7:30-8:30
8:00-9:00
8:30-9:30
9:00-10:00
9:30-10:30
10:00-11:00
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1:00-2:00
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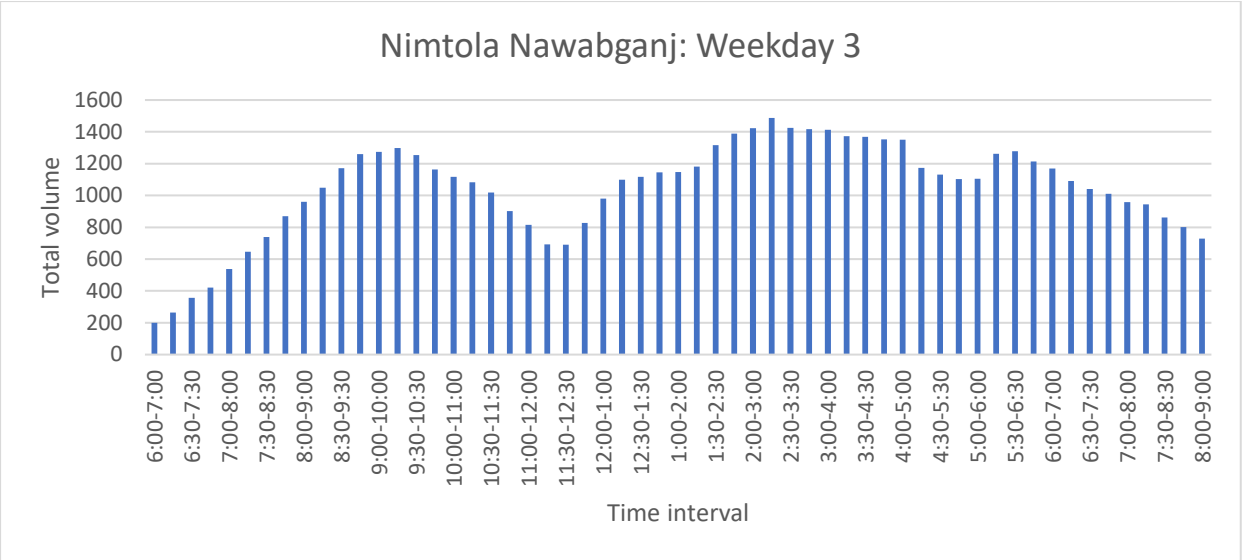
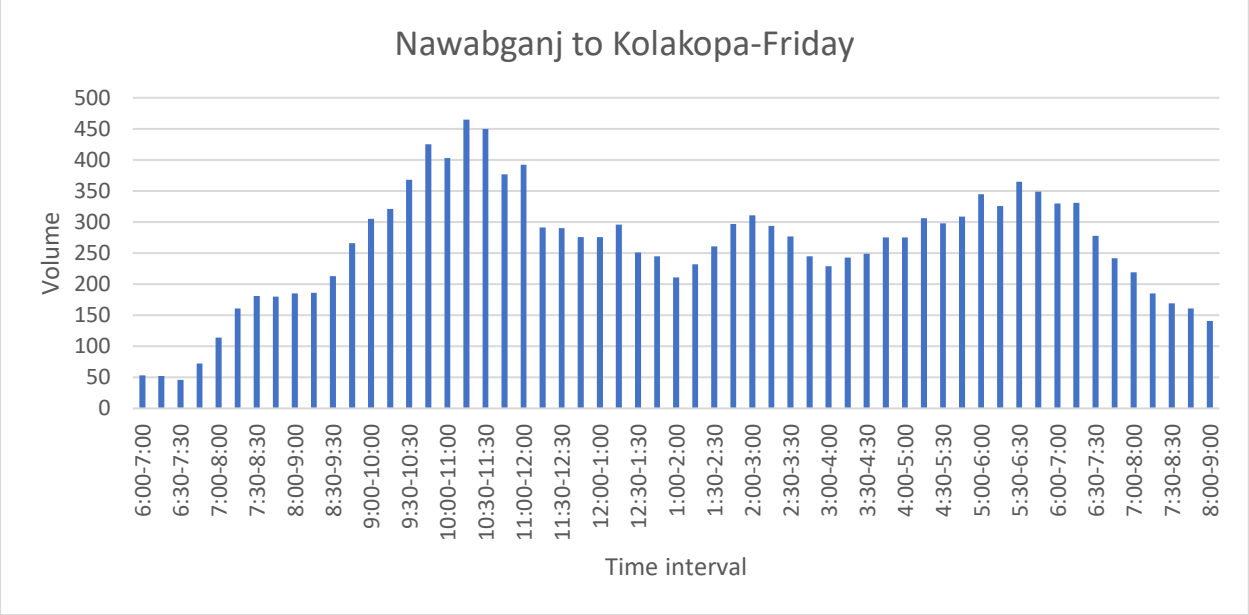
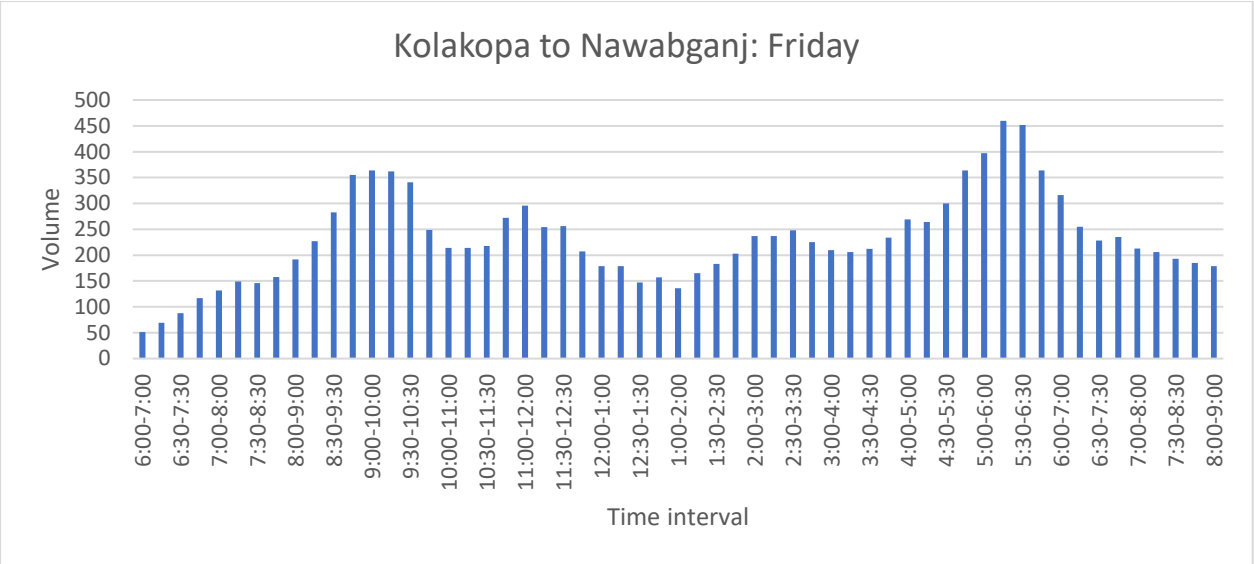
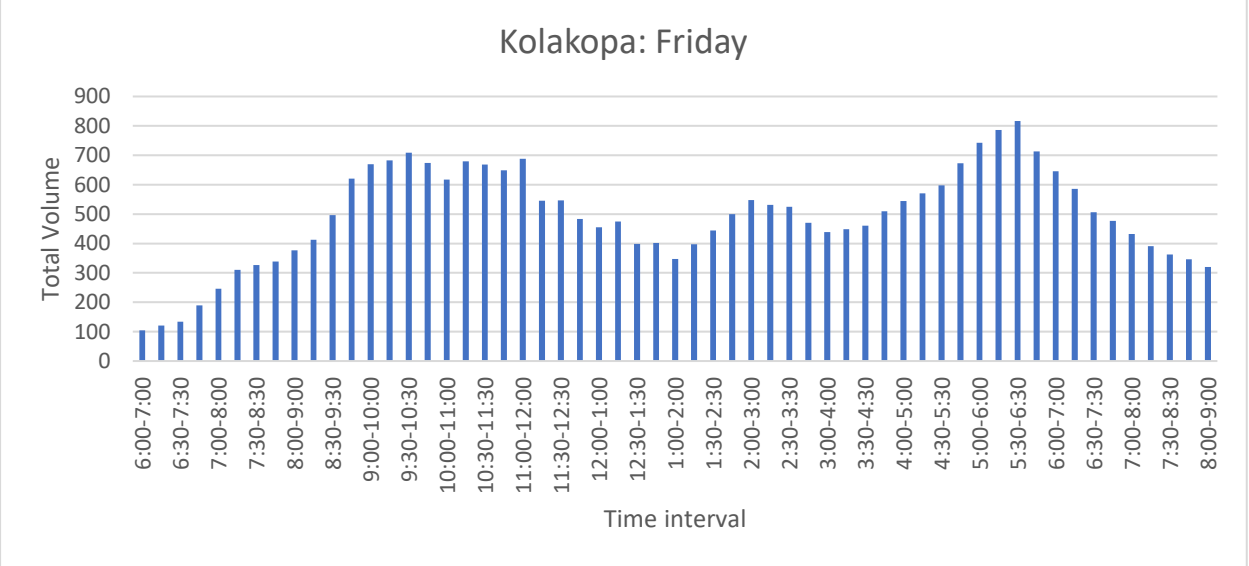
5:00-6:00
5:30-6:30
6:00-7:00
6:30-7:30
7:00-8:00
7:30-8:30
8:00-9:00
Time interval



Point 7: Friday




Kolakopa to Nawabganj: Friday
Volume
500
450
400
350
300
250
200
150
100
50
0
6:00-7:00
6:30-7:30
7:00-8:00
7:30-8:30
8:00-9:00
8:30-9:30
9:00-10:00
9:30-10:30
10:00-11:00
10:30-11:30
11:00-12:00
11:30-12:30
12:00-1:00
12:30-1:30
1:00-2:00
1:30-2:30
2:00-3:00
2:30-3:30
3:00-4:00
3:30-4:30
4:00-5:00
4:30-5:30
5:00-6:00
5:30-6:30
6:00-7:00
6:30-7:30
7:00-8:00
7:30-8:30
8:00-9:00
Time interval


Kolakopa: Friday
Total Volume
900
800
700
600
500
400
300
200
100
0
6:00-7:00
6:30-7:30
7:00-8:00
7:30-8:30
8:00-9:00
8:30-9:30
9:00-10:00
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11:30-12:30
12:00-1:00
12:30-1:30
1:00-2:00
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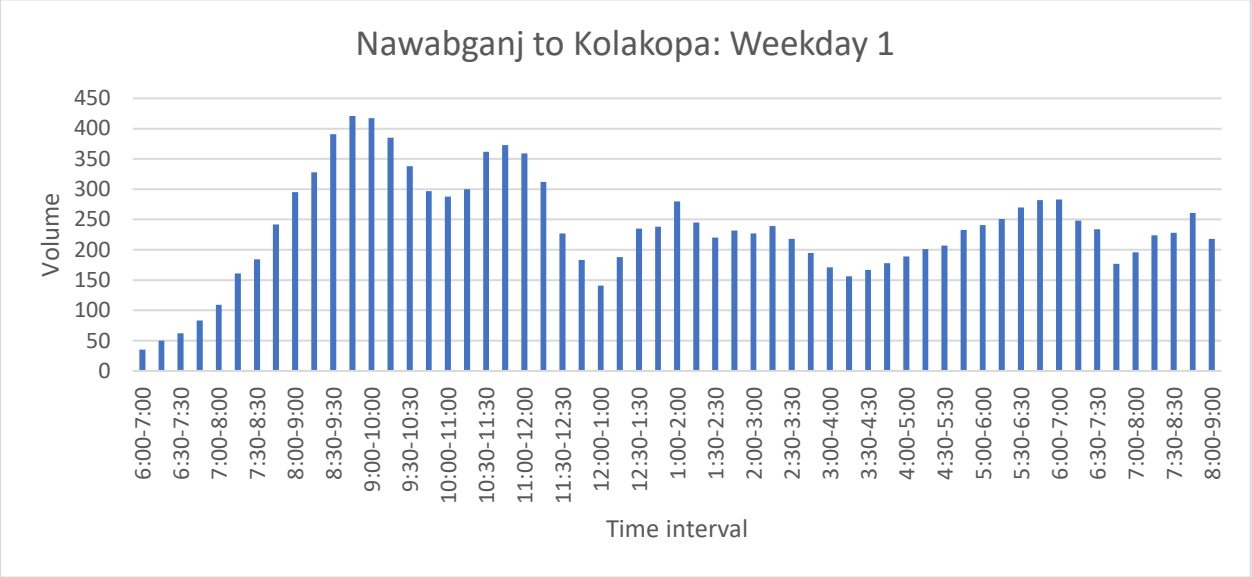
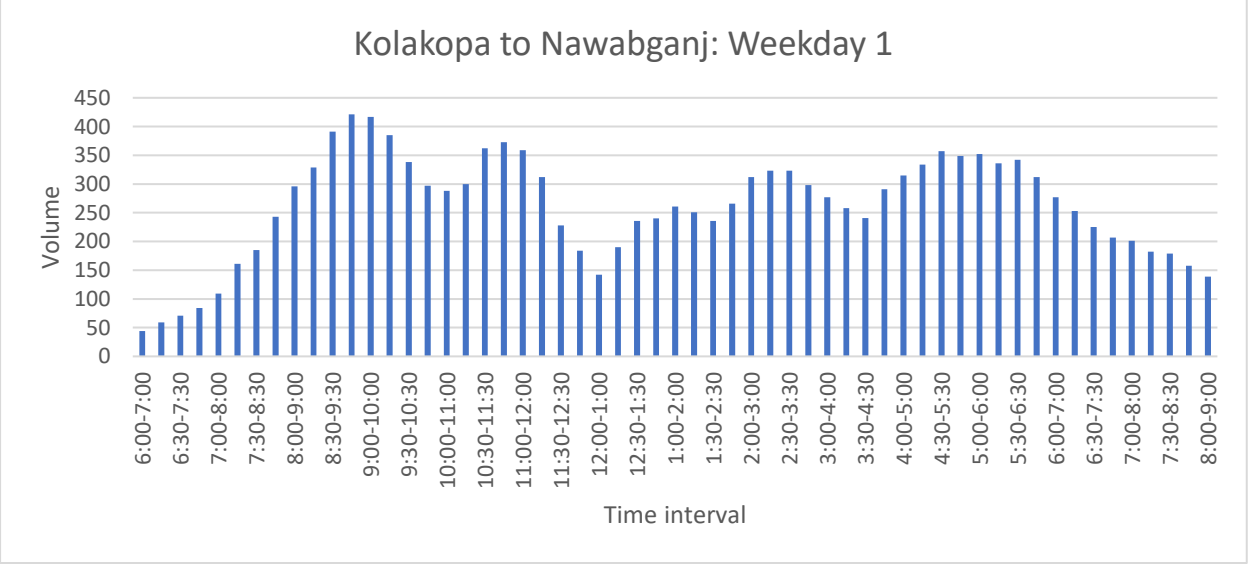
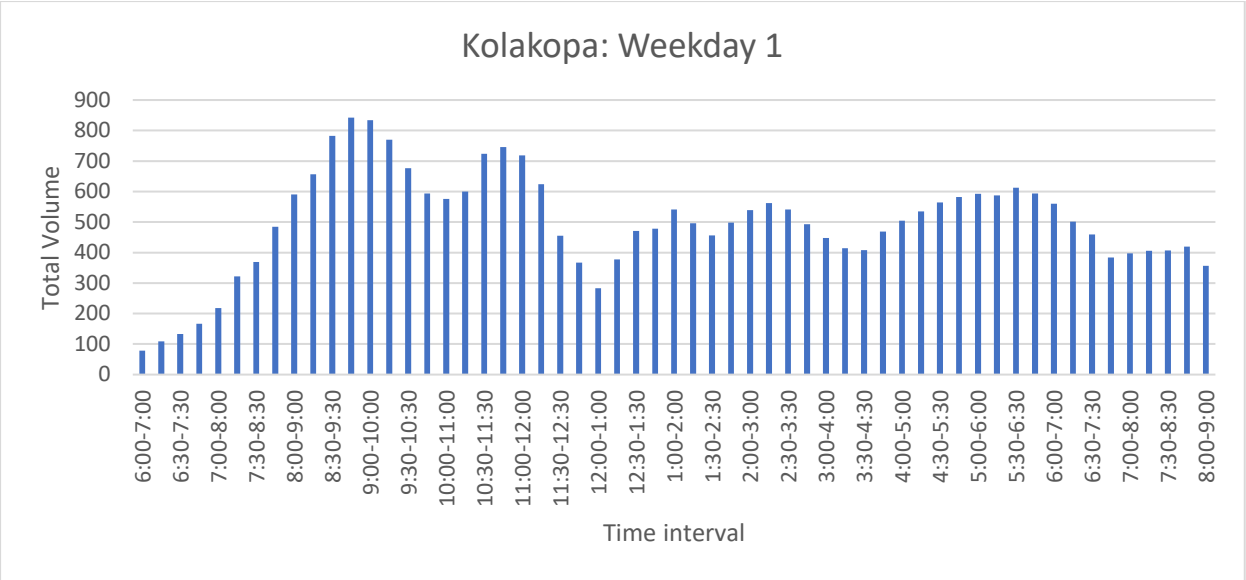
5:00-6:00
5:30-6:30
6:00-7:00
6:30-7:30
7:00-8:00
7:30-8:30
8:00-9:00
Time interval

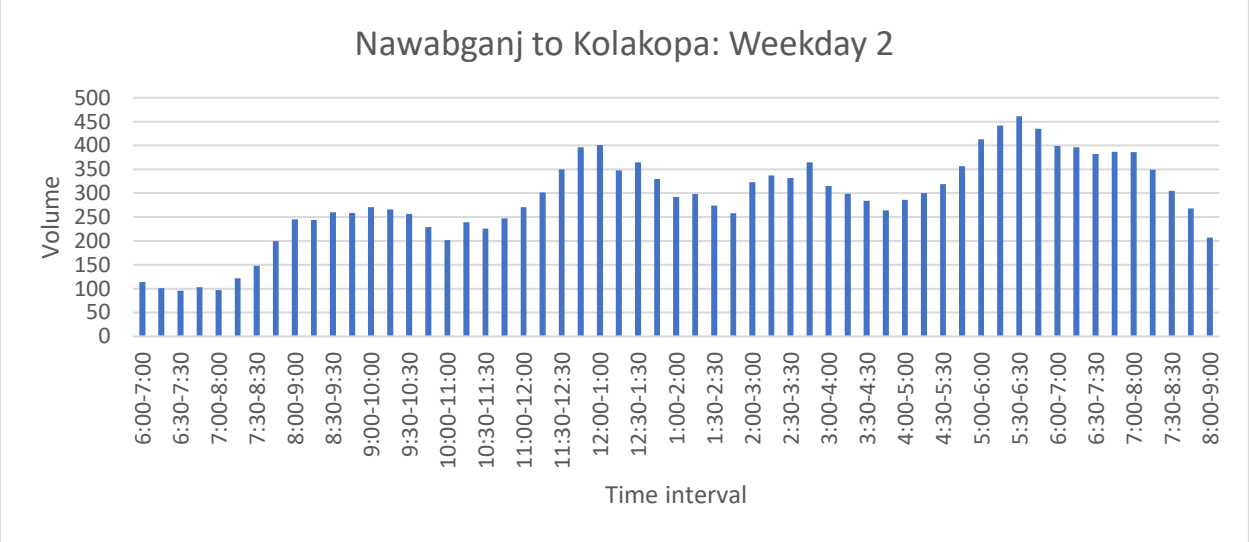
Point 7: Weekday 1

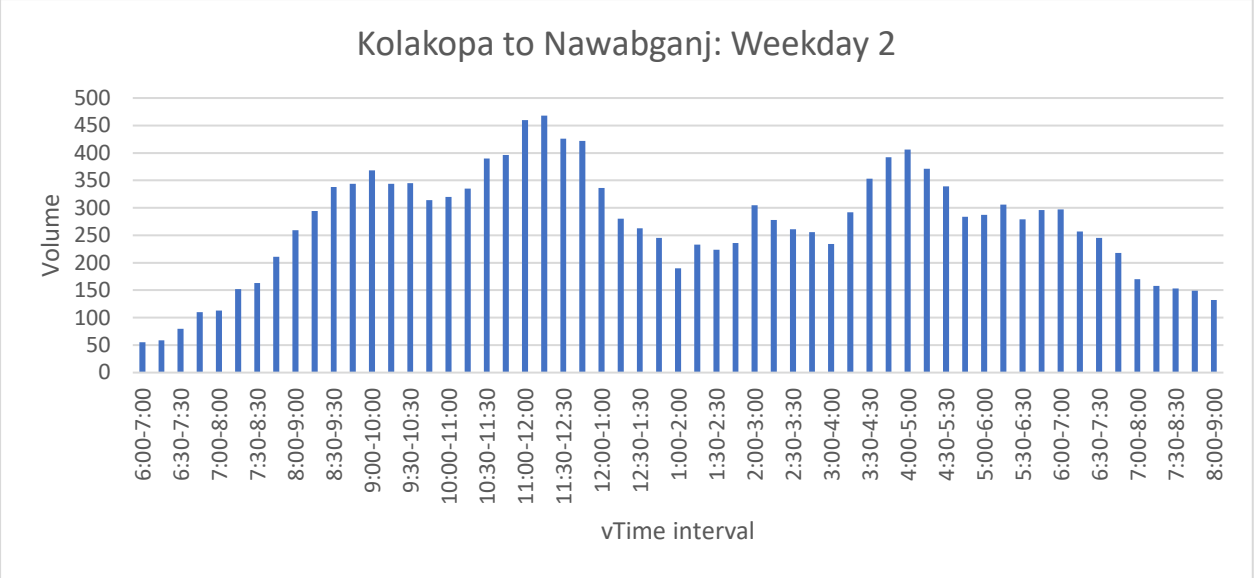


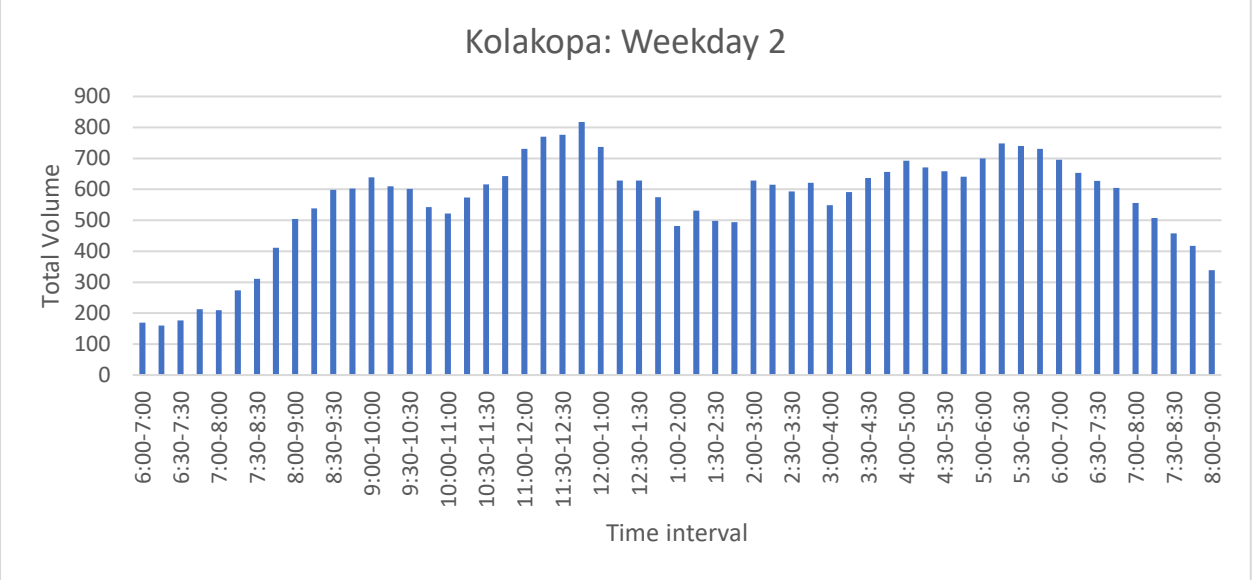




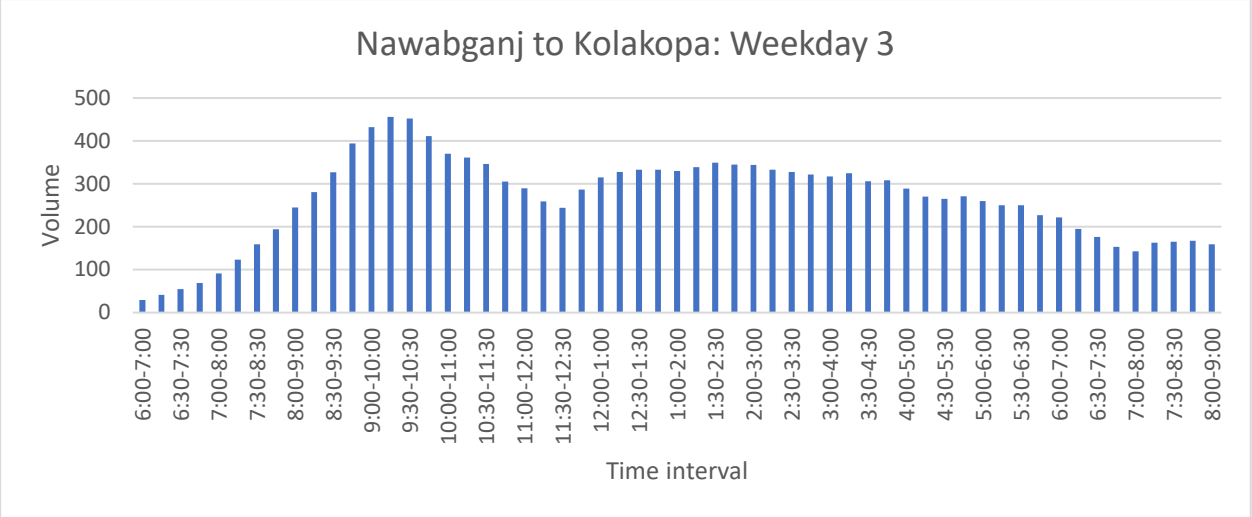
Point 7: Weekday 2

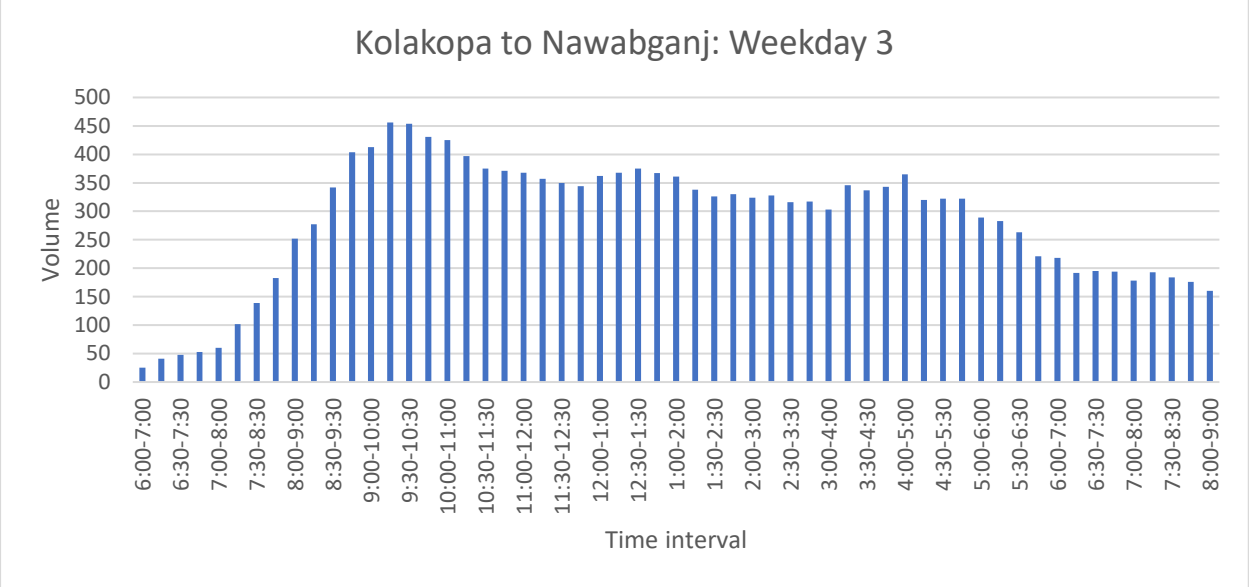






Point 7: Weekday 3


Nawabganj to Kolakopa: Weekday 3
Volume
500
400
300
200
100
0
6:00-7:00
6:30-7:30
7:00-8:00
7:30-8:30
8:00-9:00
8:30-9:30
9:00-10:00
9:30-10:30
10:00-11:00
10:30-11:30
11:00-12:00
11:30-12:30
12:00-1:00
12:30-1:30
1:00-2:00
1:30-2:30
2:00-3:00
2:30-3:30
3:00-4:00
3:30-4:30
4:00-5:00
4:30-5:30
5:00-6:00
5:30-6:30
6:00-7:00
6:30-7:30
7:00-8:00
7:30-8:30
8:00-9:00
Time interval


Kolakopa to Nawabganj: Weekday 3
Volume
500
450
400
350
300
250
200
150
100
50
0
6:00-7:00
6:30-7:30
7:00-8:00
7:30-8:30
8:00-9:00
8:30-9:30
9:00-10:00
9:30-10:30
10:00-11:00
10:30-11:30
11:00-12:00
11:30-12:30
12:00-1:00
12:30-1:30
1:00-2:00
1:30-2:30
2:00-3:00
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3:00-4:00
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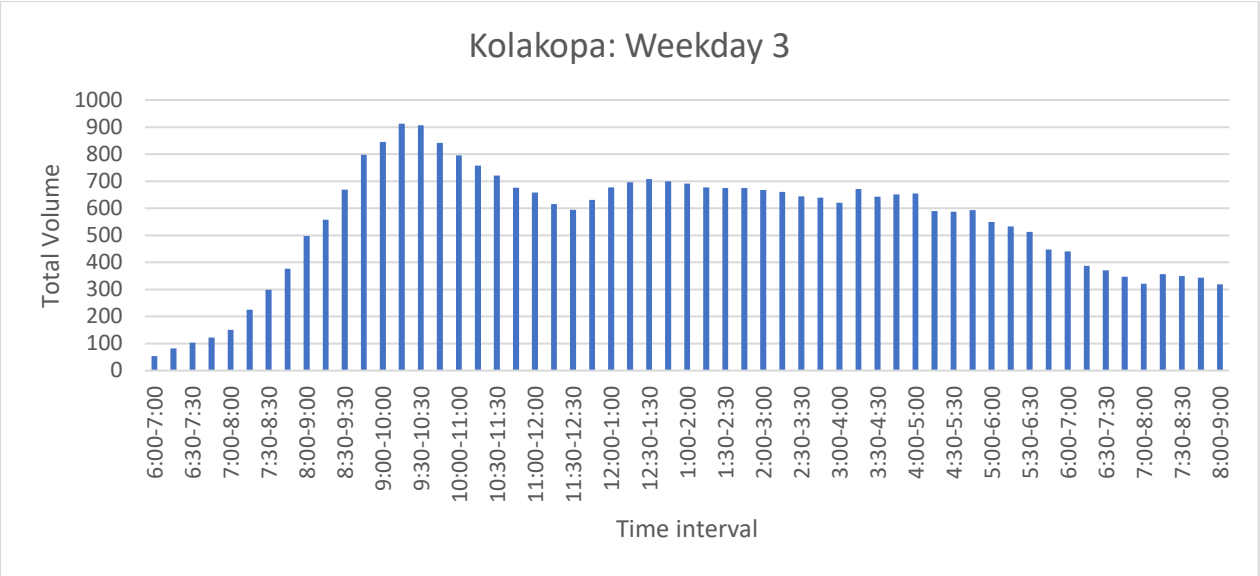
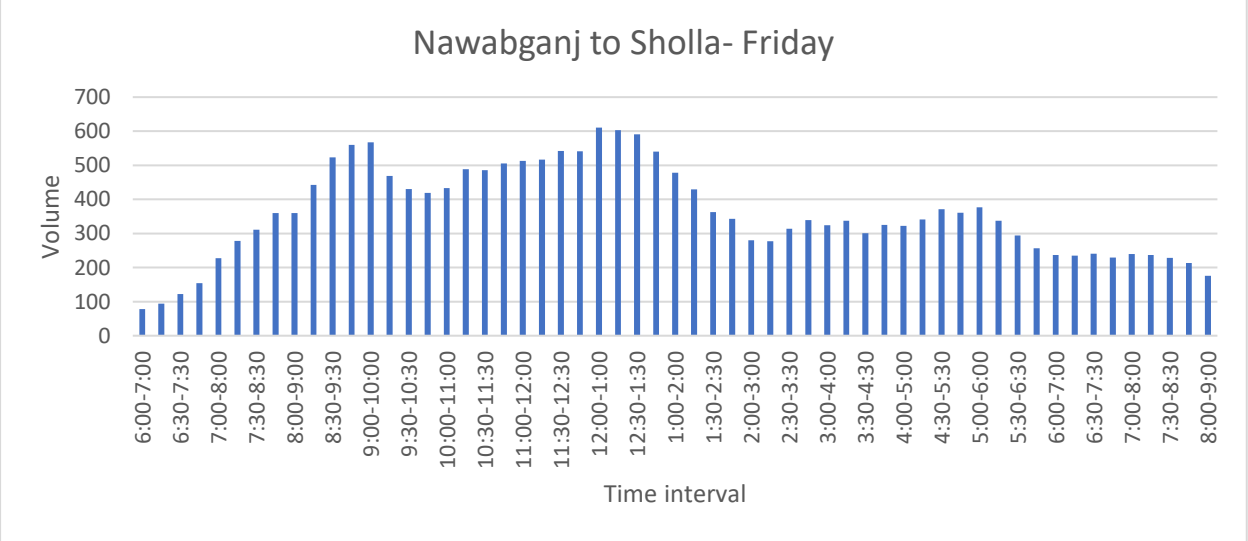
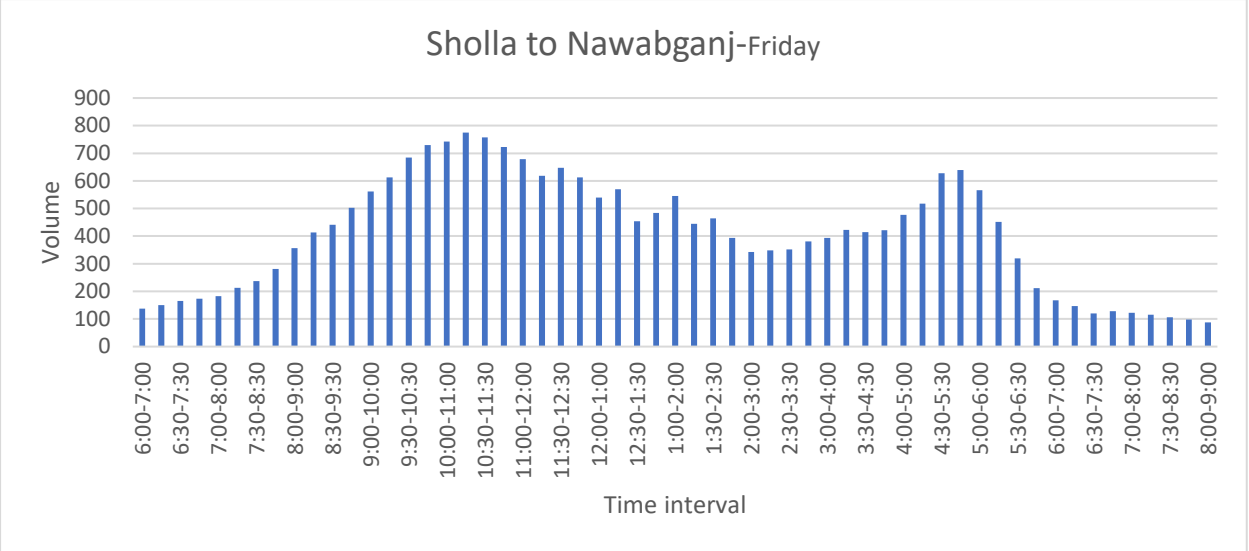
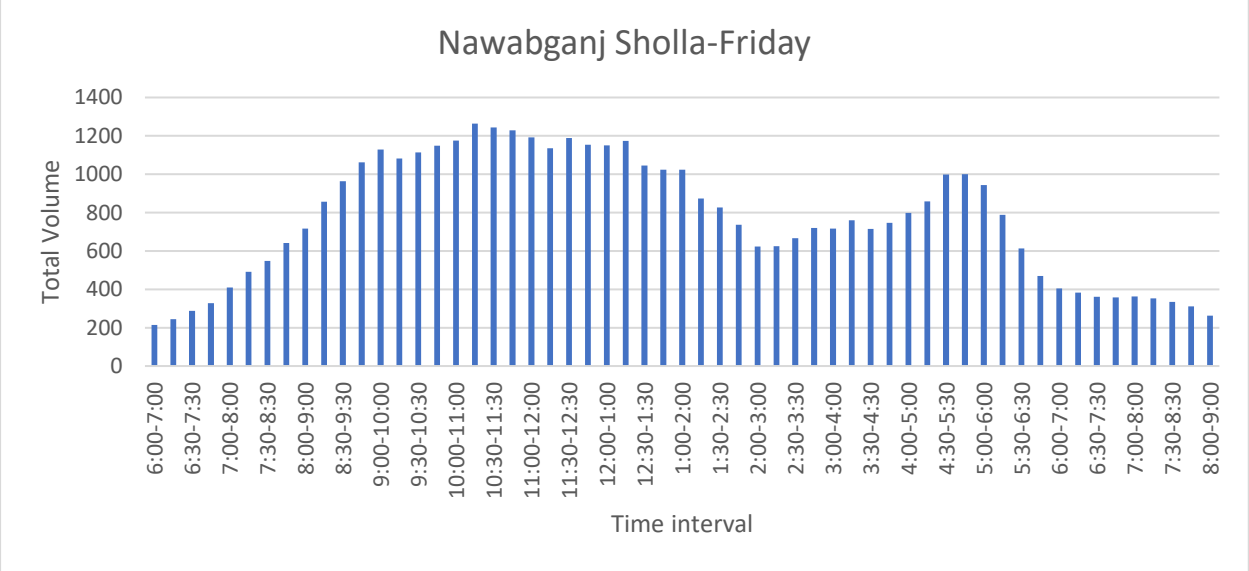
5:00-6:00
5:30-6:30
6:00-7:00
6:30-7:30
7:00-8:00
7:30-8:30
8:00-9:00
Time interval



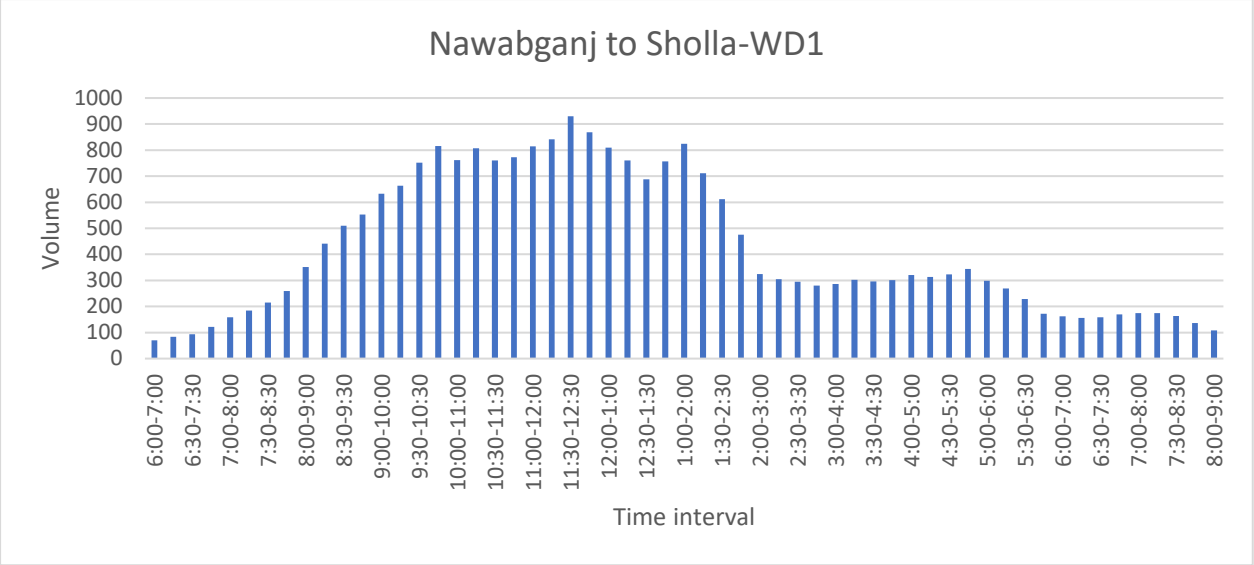
Point 8: Friday

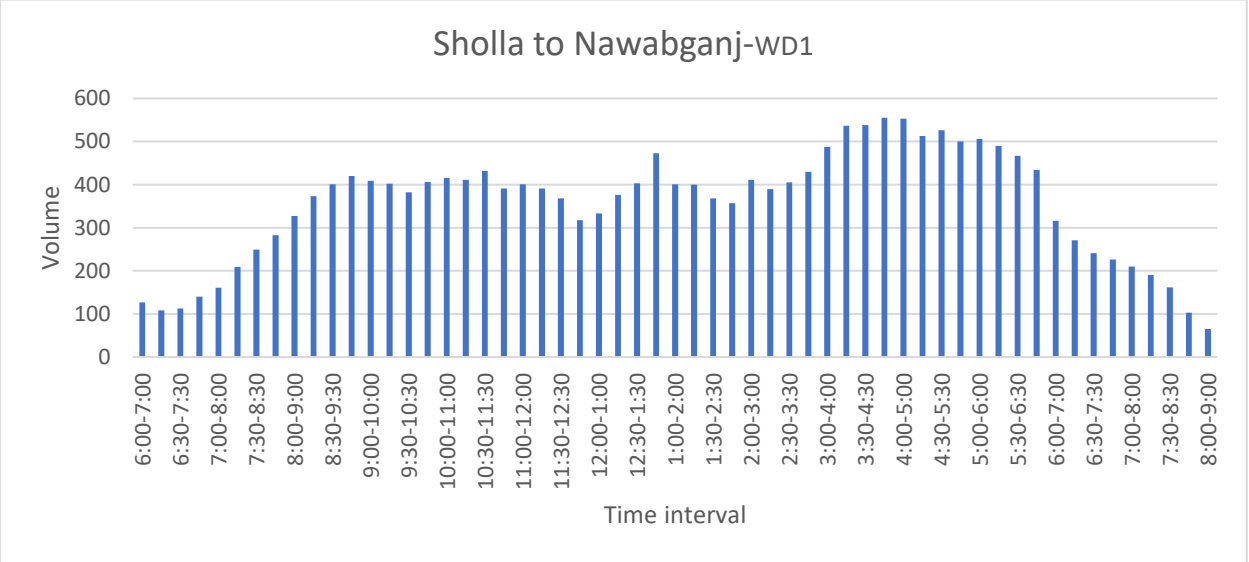






Point 8: Weekday 1


Nawabganj to Sholla-WD1
Volume
1000
900
800
700
600
500
400
300
200
100
0
6:00-7:00
6:30-7:30
7:00-8:00
7:30-8:30
8:00-9:00
8:30-9:30
9:00-10:00
9:30-10:30
10:00-11:00
10:30-11:30
11:00-12:00
11:30-12:30
12:00-1:00
12:30-1:30
1:00-2:00
1:30-2:30
2:00-3:00
2:30-3:30
3:00-4:00
3:30-4:30
4:00-5:00
4:30-5:30
5:00-6:00
5:30-6:30
6:00-7:00
6:30-7:30
7:00-8:00
7:30-8:30
8:00-9:00
Time interval


Sholla to Nawabganj-WD1
Volume
600
500
400
300
200
100
0
6:00-7:00
6:30-7:30
7:00-8:00
7:30-8:30
8:00-9:00
8:30-9:30
9:00-10:00
9:30-10:30
10:00-11:00
10:30-11:30
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12:30-1:30
1:00-2:00
1:30-2:30
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4:30-5:30
5:00-6:00
5:30-6:30
6:00-7:00
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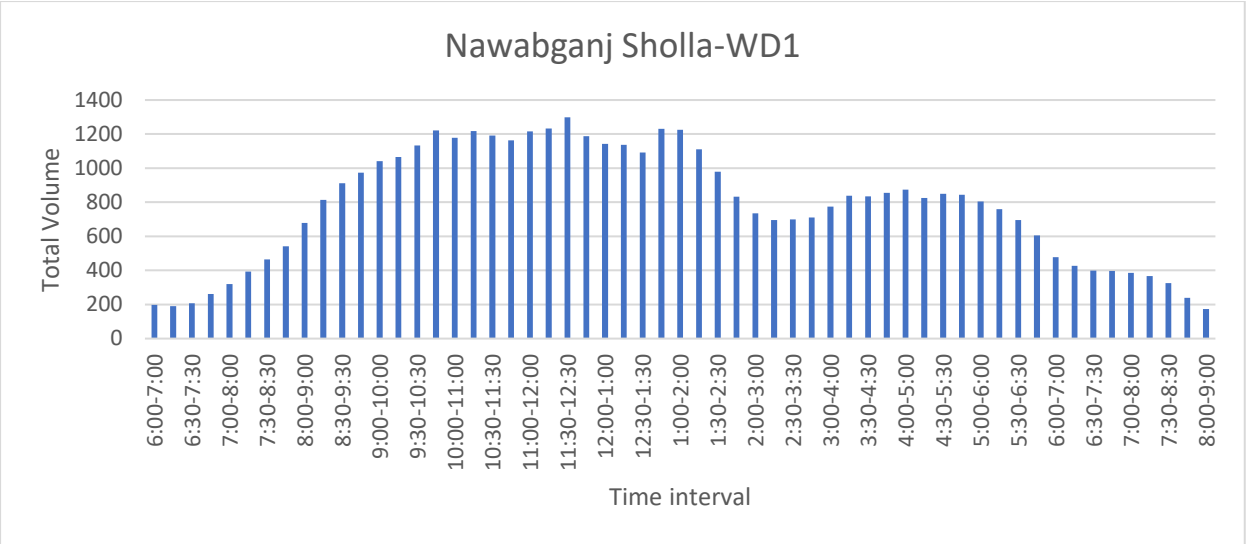
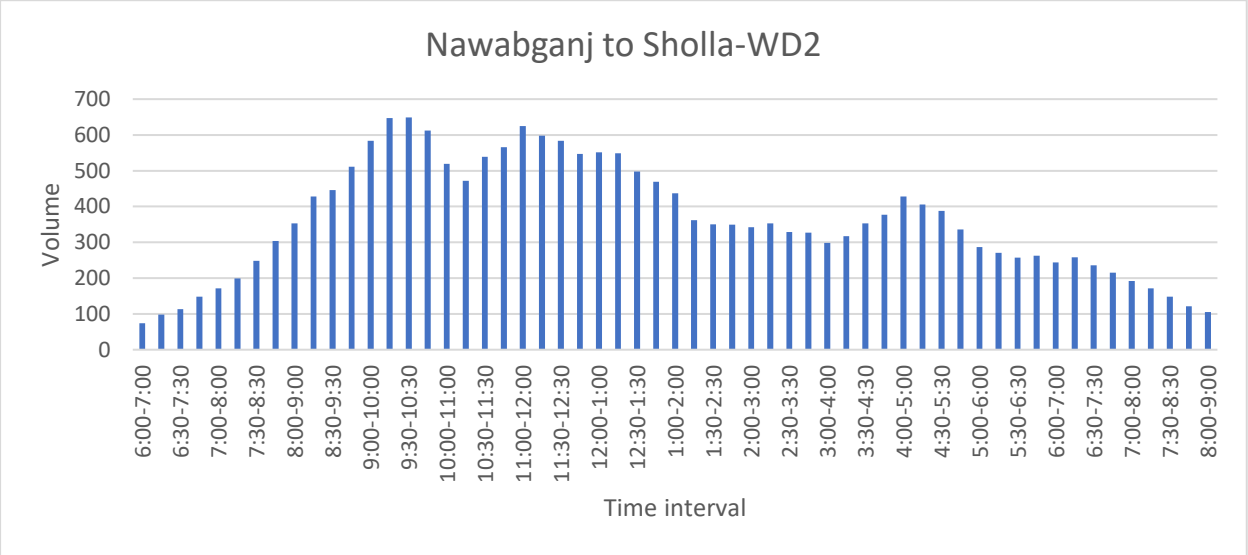
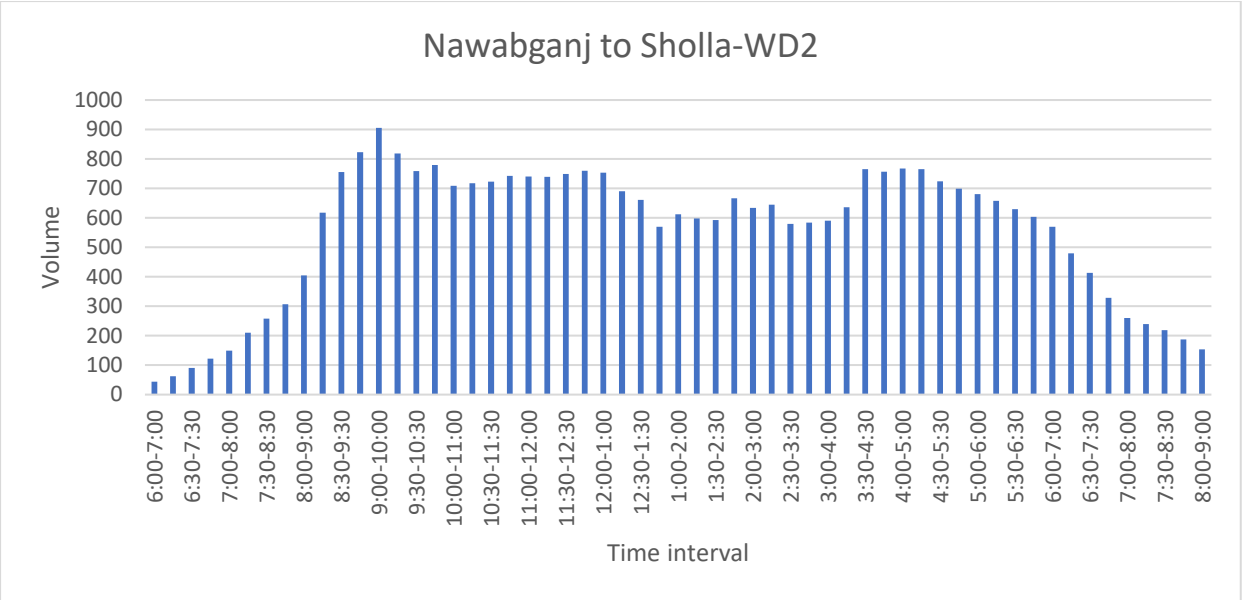
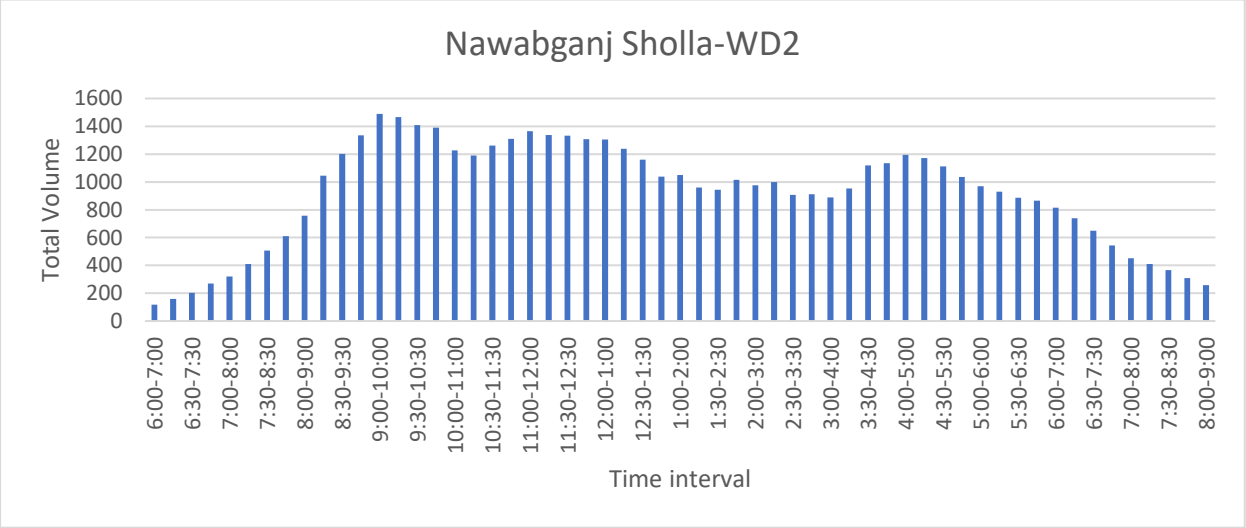
7:00-8:00
7:30-8:30
8:00-9:00
Time interval



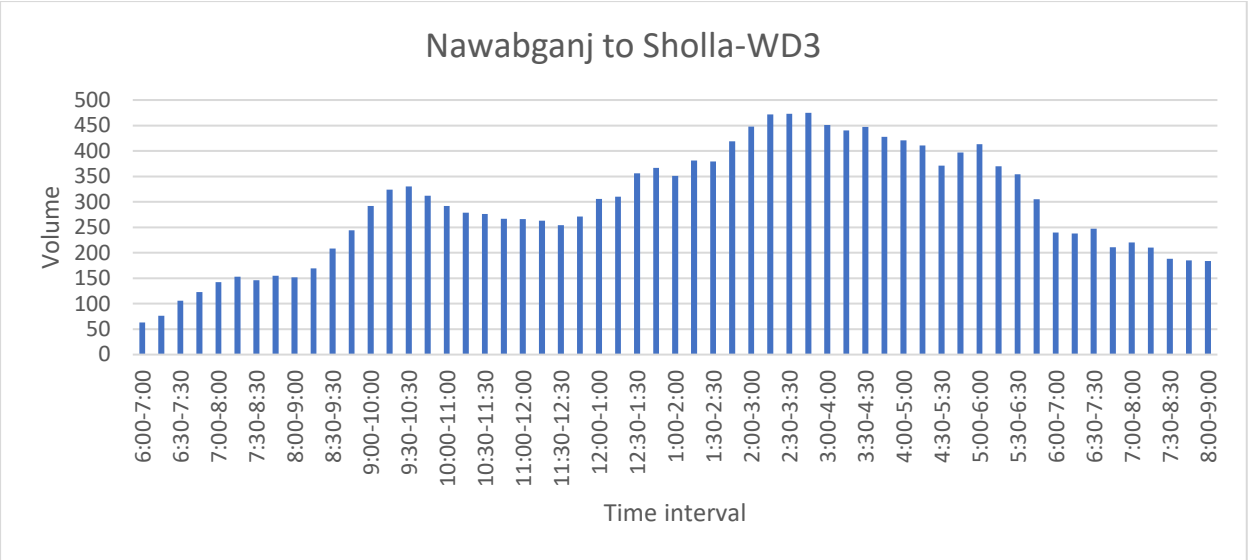
Point 8: Weekday 2







Point 8: Weekday 3


Nawabganj to Sholla-WD3
Volume
500
450
400
350
300
250
200
150
100
50
0
6:00-7:00
6:30-7:30
7:00-8:00
7:30-8:30
8:00-9:00
8:30-9:30
9:00-10:00
9:30-10:30
10:00-11:00
10:30-11:30
11:00-12:00
11:30-12:30
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1:00-2:00
1:30-2:30
2:00-3:00
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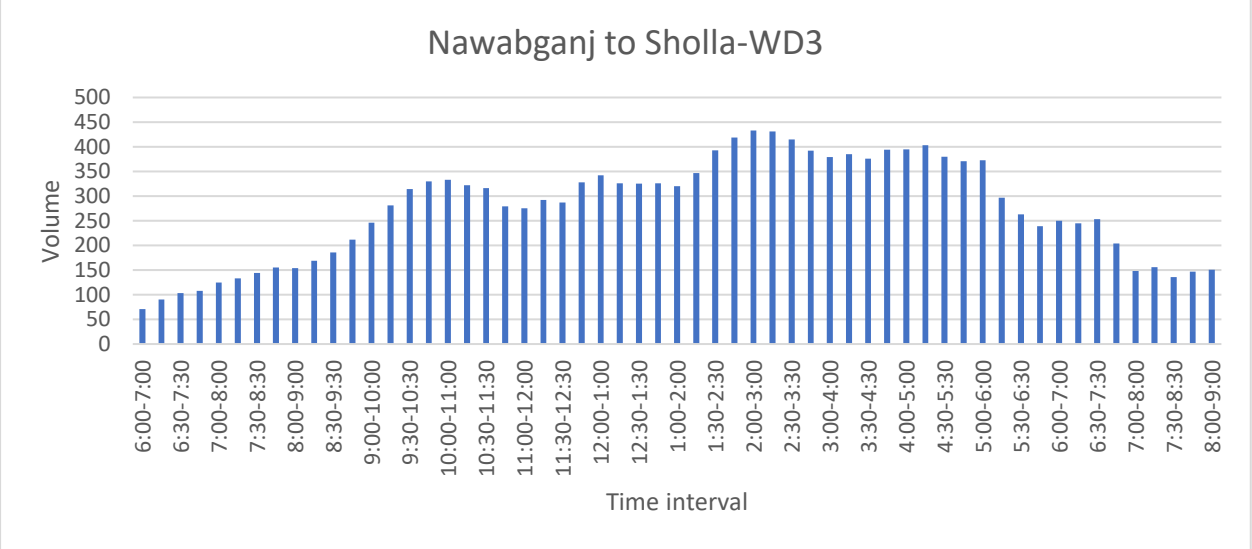
3:00-4:00
3:30-4:30
4:00-5:00
4:30-5:30
5:00-6:00
5:30-6:30
6:00-7:00
6:30-7:30
7:00-8:00
7:30-8:30
8:00-9:00
Time interval


Nawabganj to Sholla-WD3
Volume
500
450
400
350
300
250
200
150
100
50
0
6:00-7:00
6:30-7:30
7:00-8:00
7:30-8:30
8:00-9:00
8:30-9:30
9:00-10:00
9:30-10:30
10:00-11:00
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12:00-1:00
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5:00-6:00
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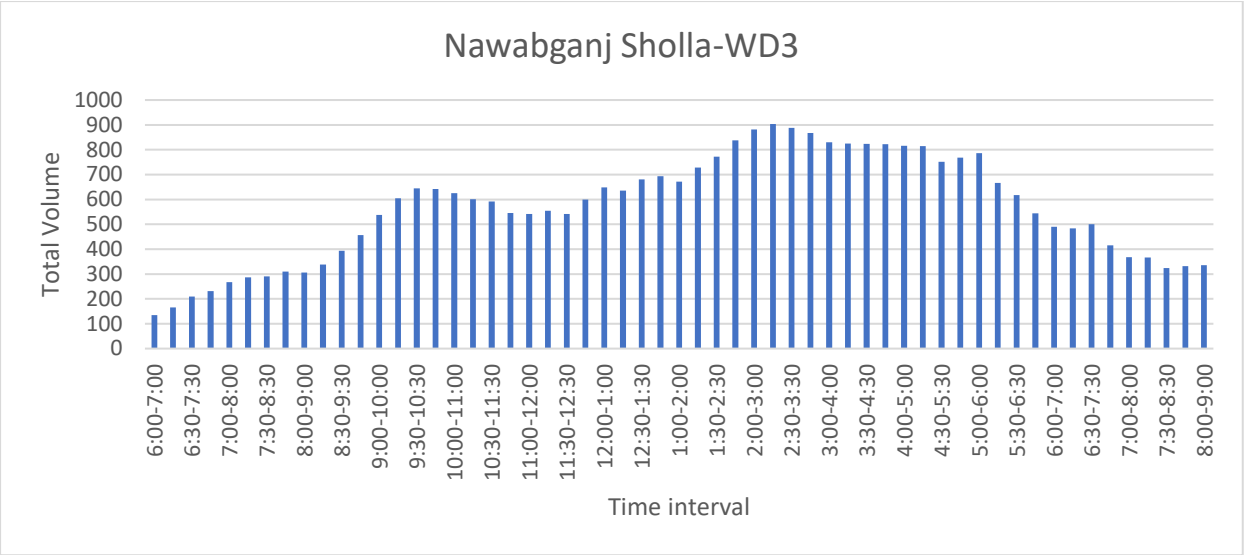
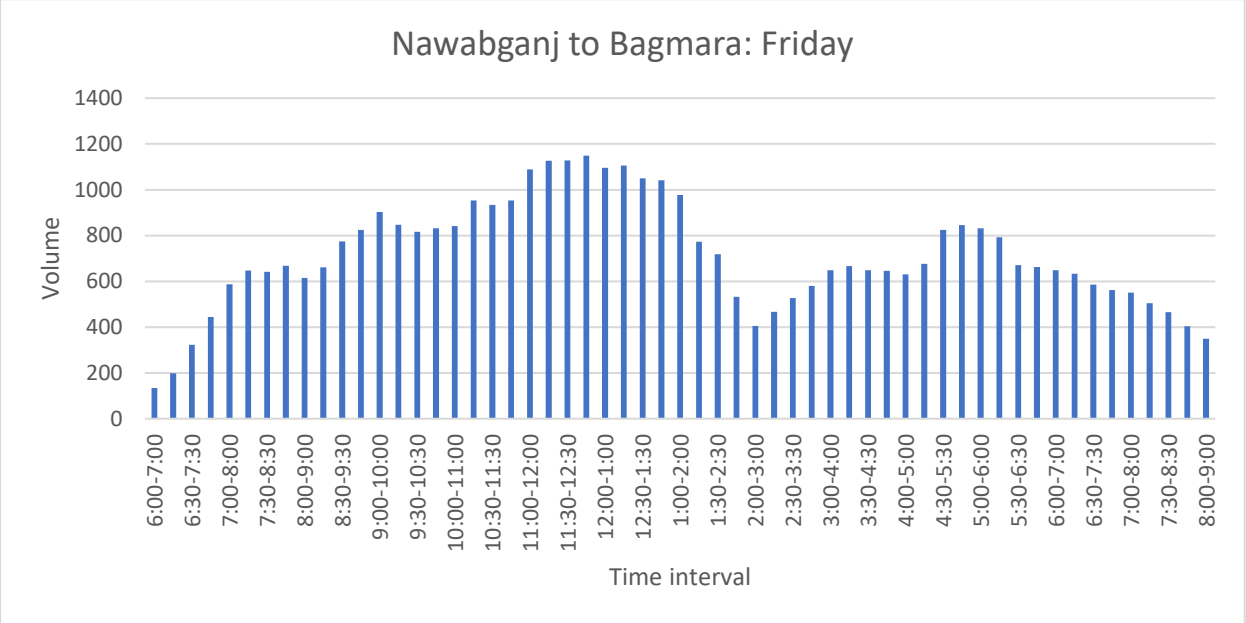
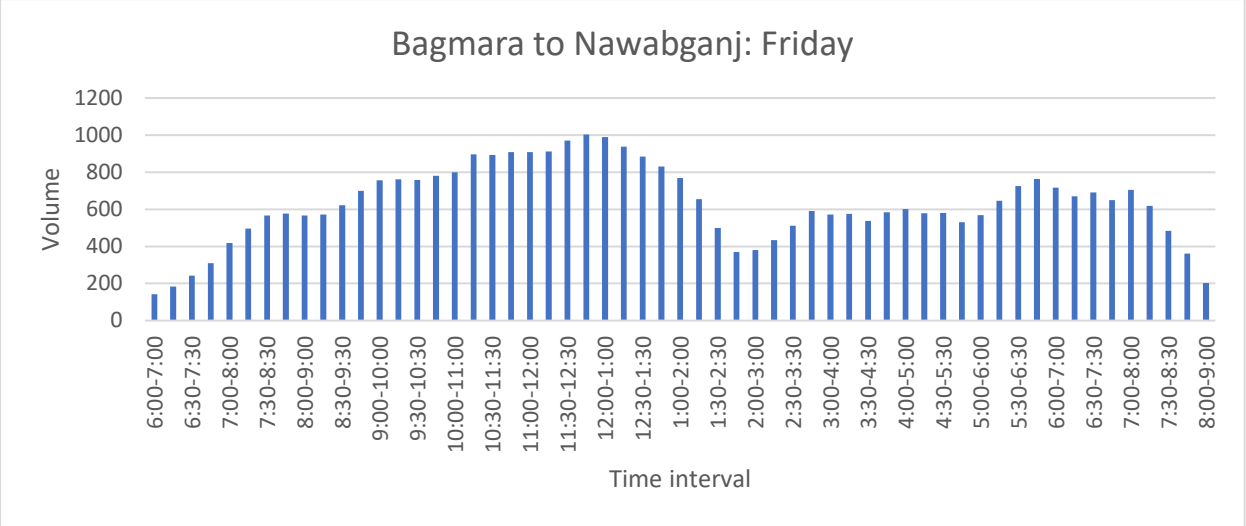
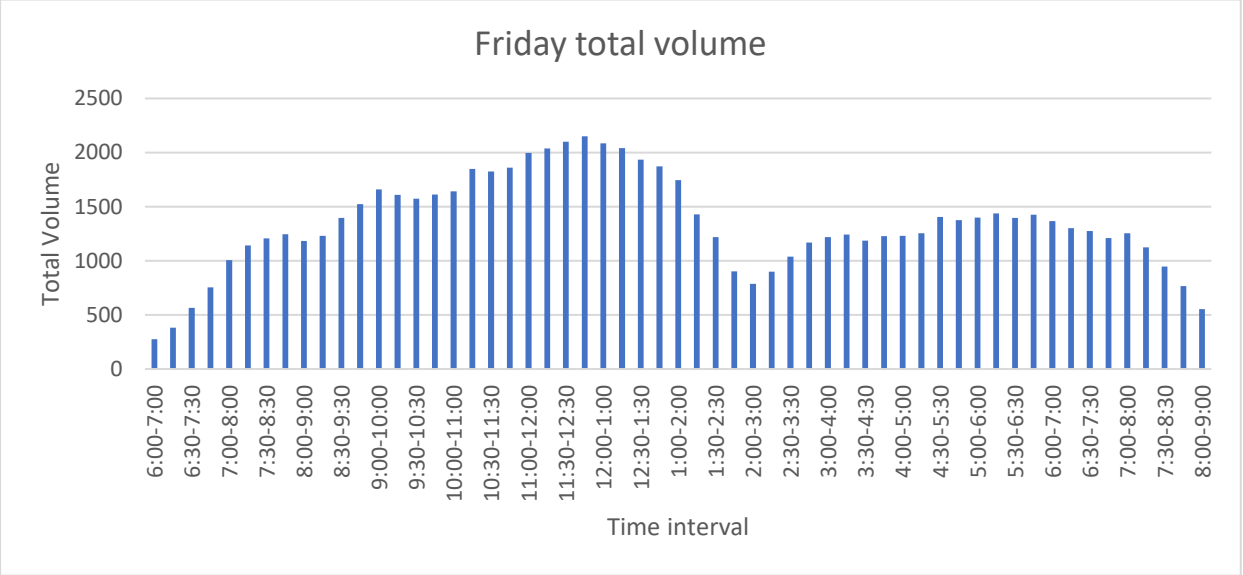
6:00-7:00
6:30-7:30
7:00-8:00
7:30-8:30
8:00-9:00
Time interval



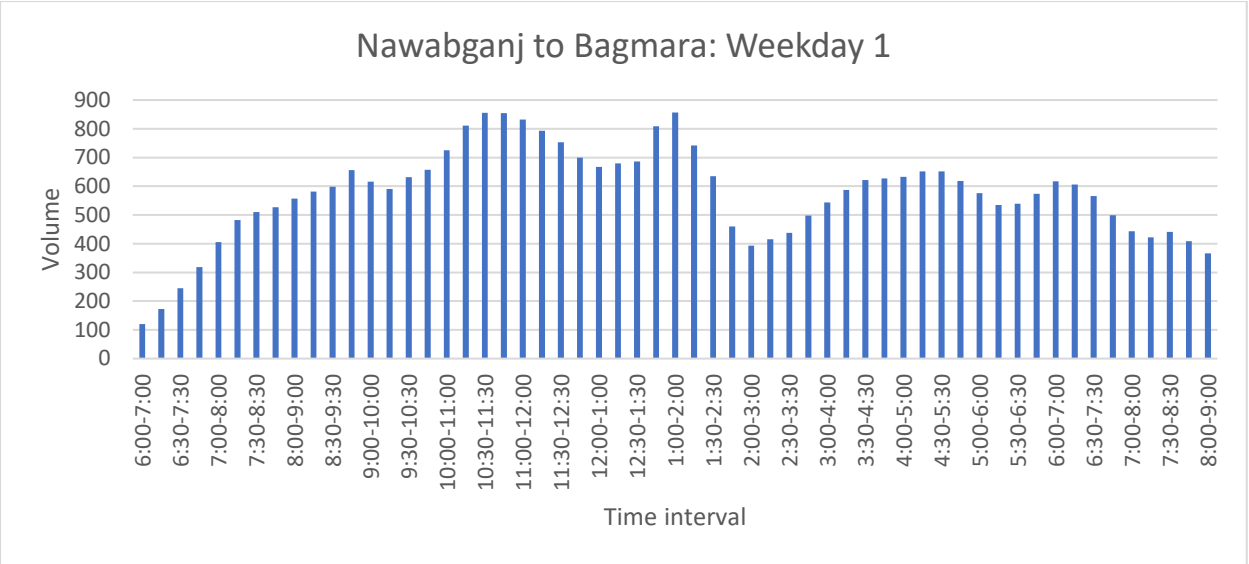
Point 9: Friday







Point 9: Weekday 1


Nawabganj to Bagmara: Weekday 1
Volume
900
800
700
600
500
400
300
200
100
0
6:00-7:00
6:30-7:30
7:00-8:00
7:30-8:30
8:00-9:00
8:30-9:30
9:00-10:00
9:30-10:30
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1:00-2:00
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2:30-3:30
3:00-4:00
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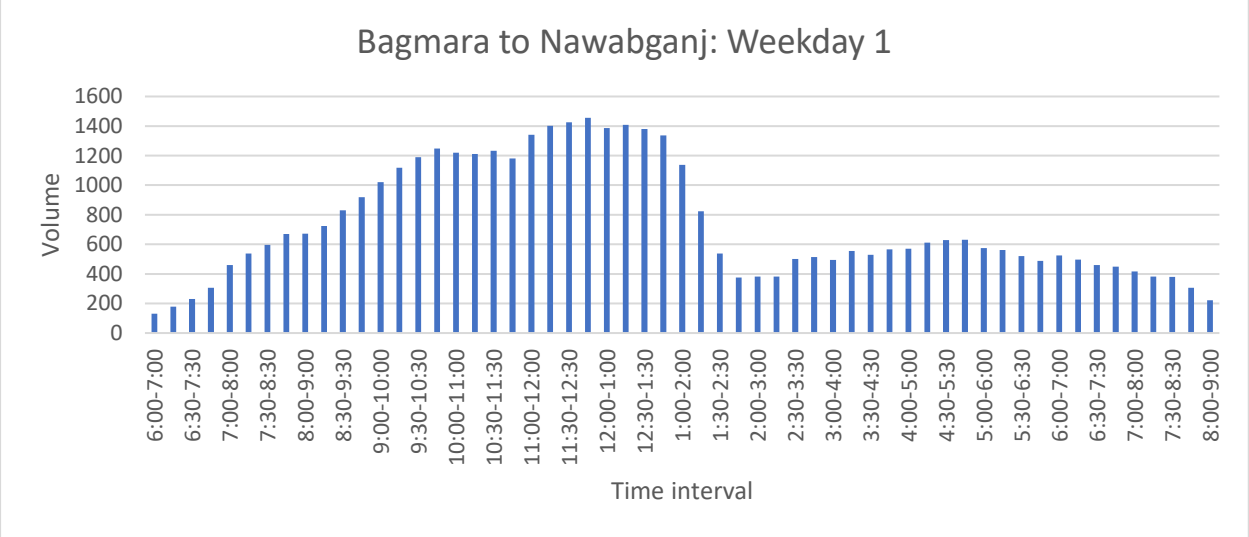
4:00-5:00
4:30-5:30
5:00-6:00
5:30-6:30
6:00-7:00
6:30-7:30
7:00-8:00
7:30-8:30
8:00-9:00
Time interval


Bagmara to Nawabganj: Weekday 1
Volume
1600
1400
1200
1000
800
600
400
200
0
6:00-7:00
6:30-7:30
7:00-8:00
7:30-8:30
8:00-9:00
8:30-9:30
9:00-10:00
9:30-10:30
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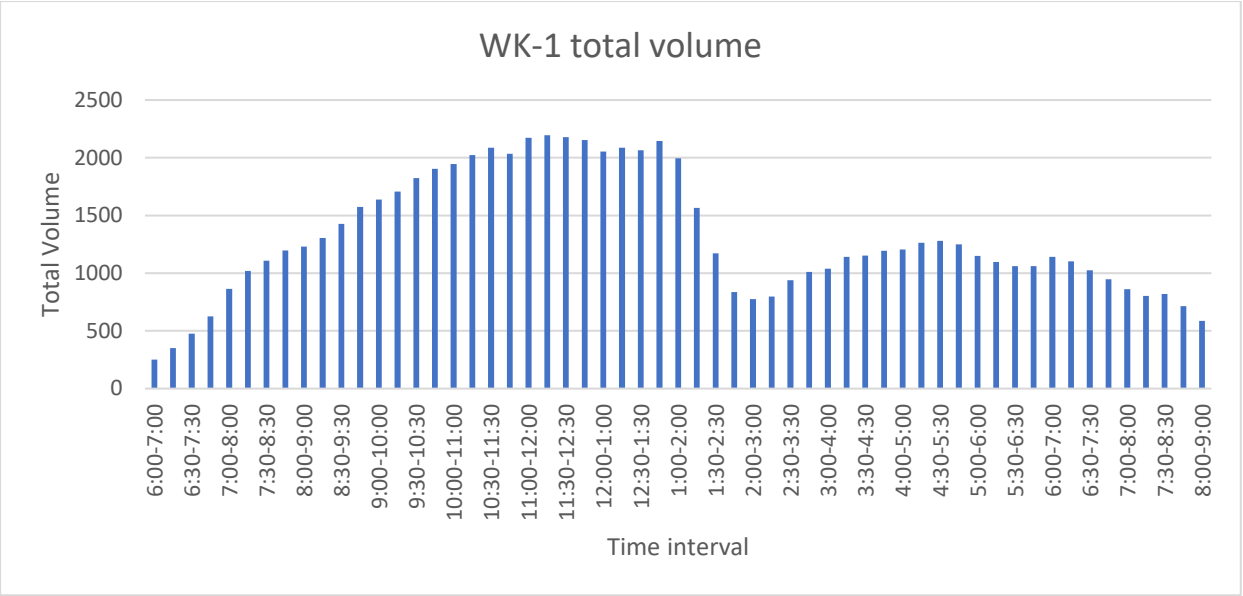
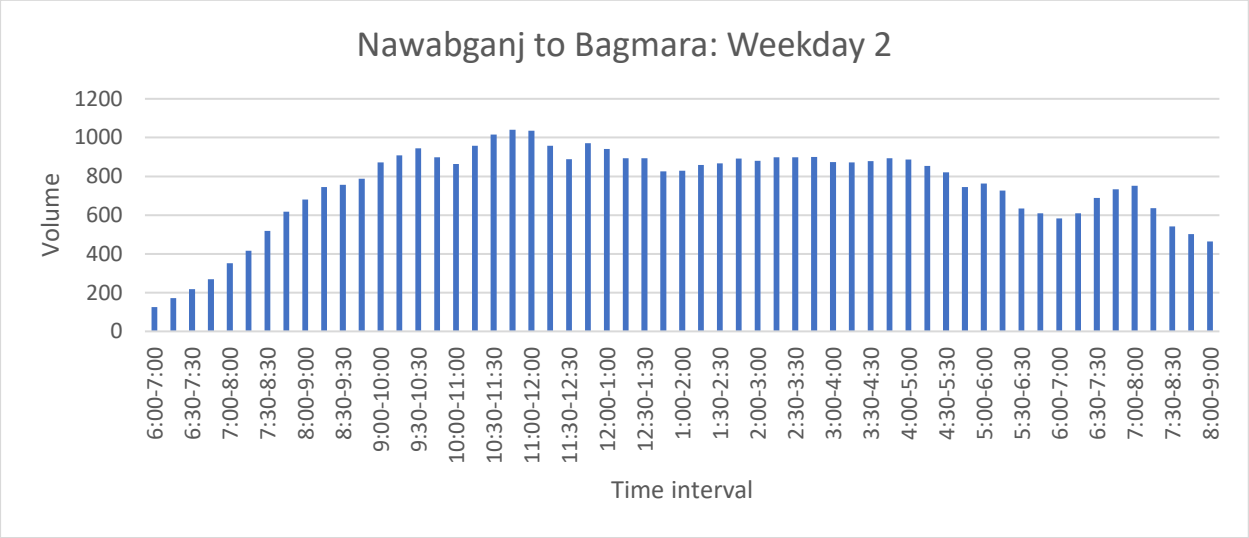
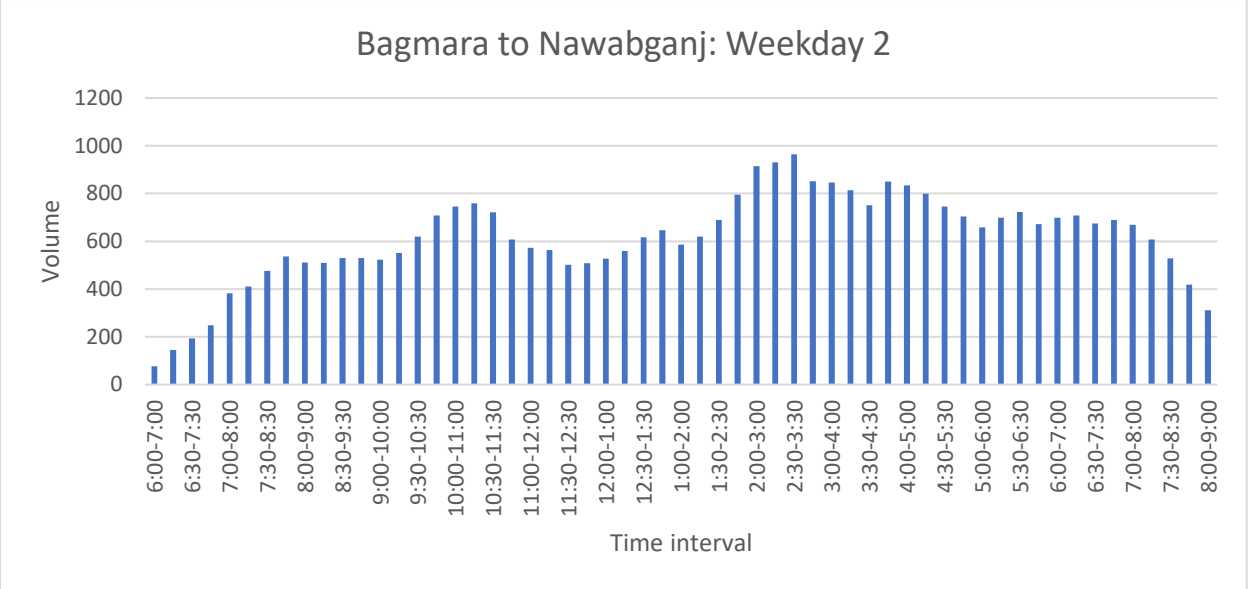
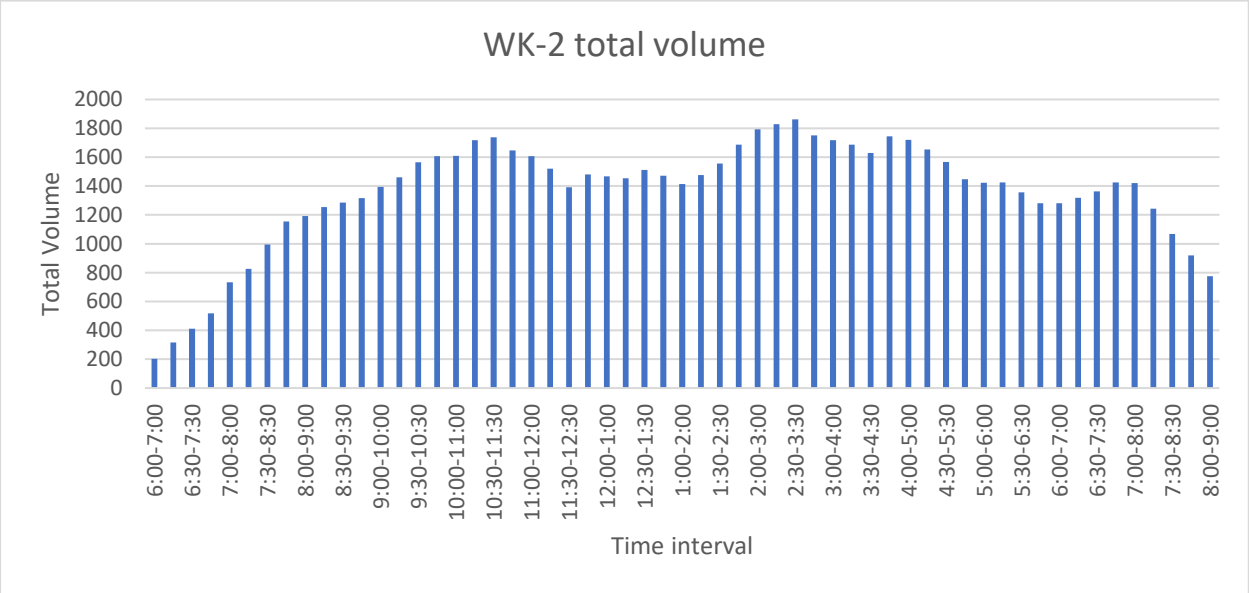
5:00-6:00
5:30-6:30
6:00-7:00
6:30-7:30
7:00-8:00
7:30-8:30
8:00-9:00
Time interval



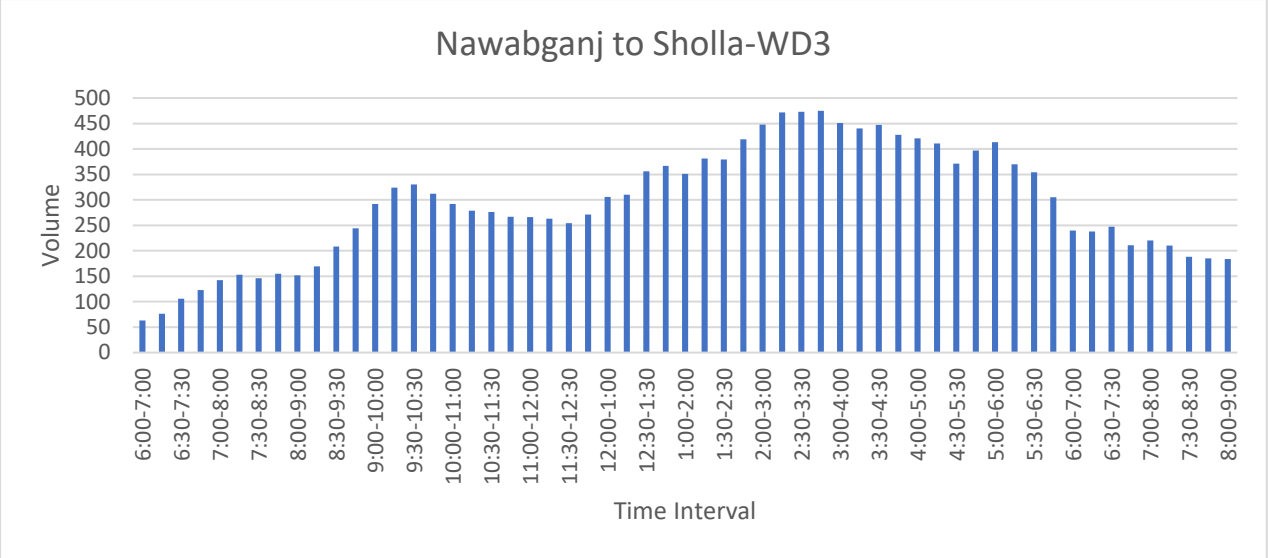
Point 9: Weekday 2







Point 9: Weekday 3


Nawabganj to Sholla-WD3
Volume
500
450
400
350
300
250
200
150
100
50
0
6:00-7:00
6:30-7:30
7:00-8:00
7:30-8:30
8:00-9:00
8:30-9:30
9:00-10:00
9:30-10:30
10:00-11:00
10:30-11:30
11:00-12:00
11:30-12:30
12:00-1:00
12:30-1:30
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5:00-6:00
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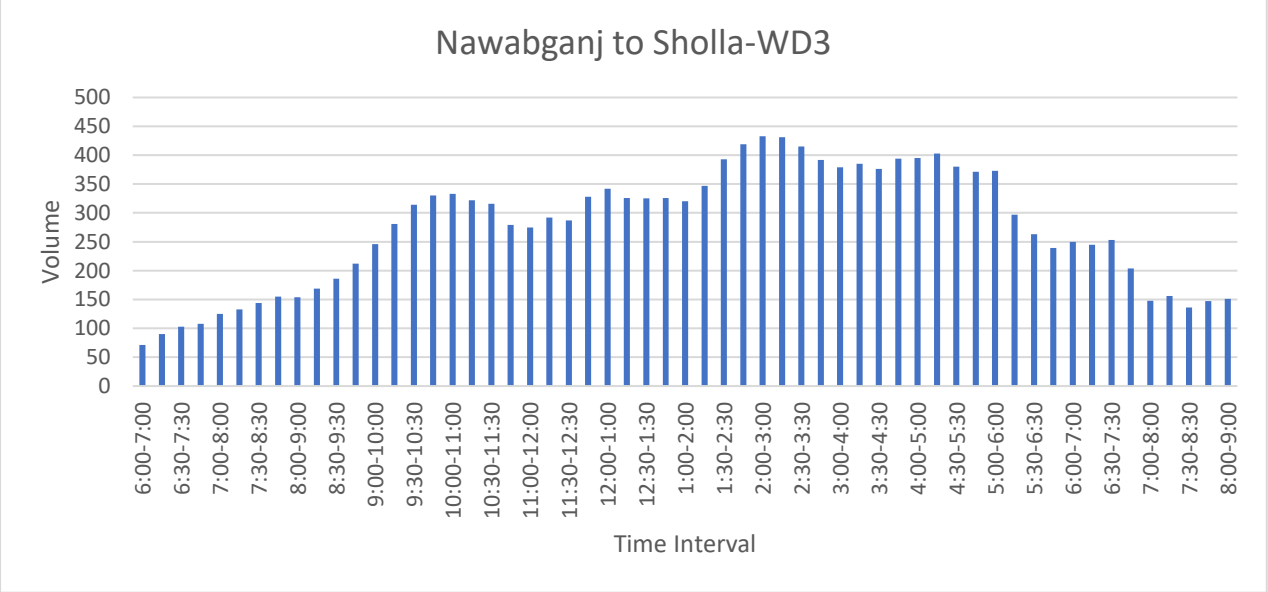
7:00-8:00
7:30-8:30
8:00-9:00
Time Interval


Nawabganj to Sholla-WD3
Volume
500
450
400
350
300
250
200
150
100
50
0
6:00-7:00
6:30-7:30
7:00-8:00
7:30-8:30
8:00-9:00
8:30-9:30
9:00-10:00
9:30-10:30
10:00-11:00
10:30-11:30
11:00-12:00
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12:00-1:00
12:30-1:30
1:00-2:00
1:30-2:30
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3:00-4:00
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5:00-6:00
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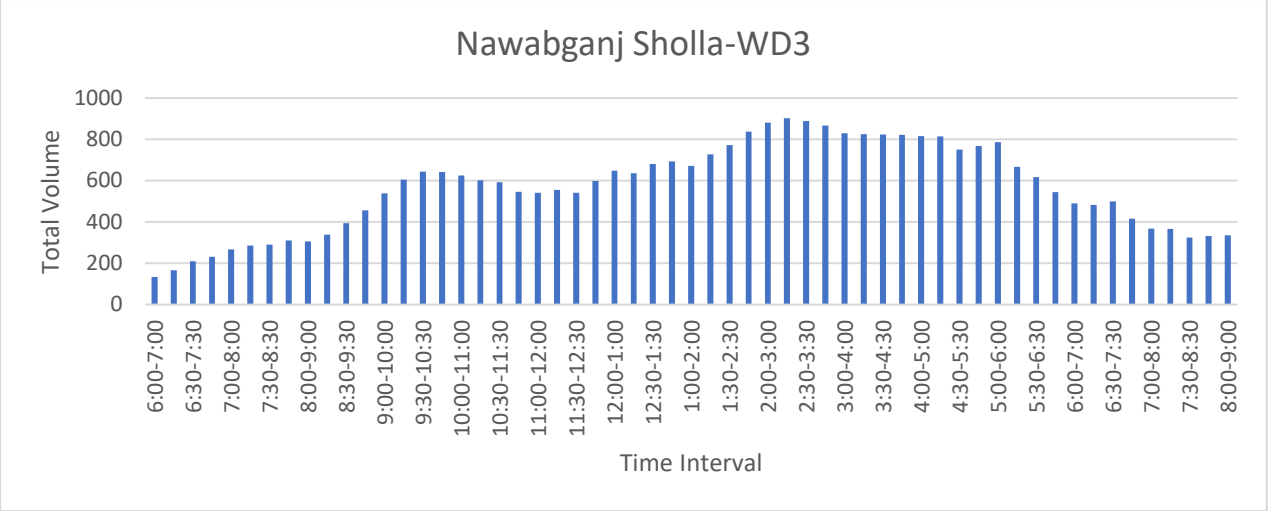
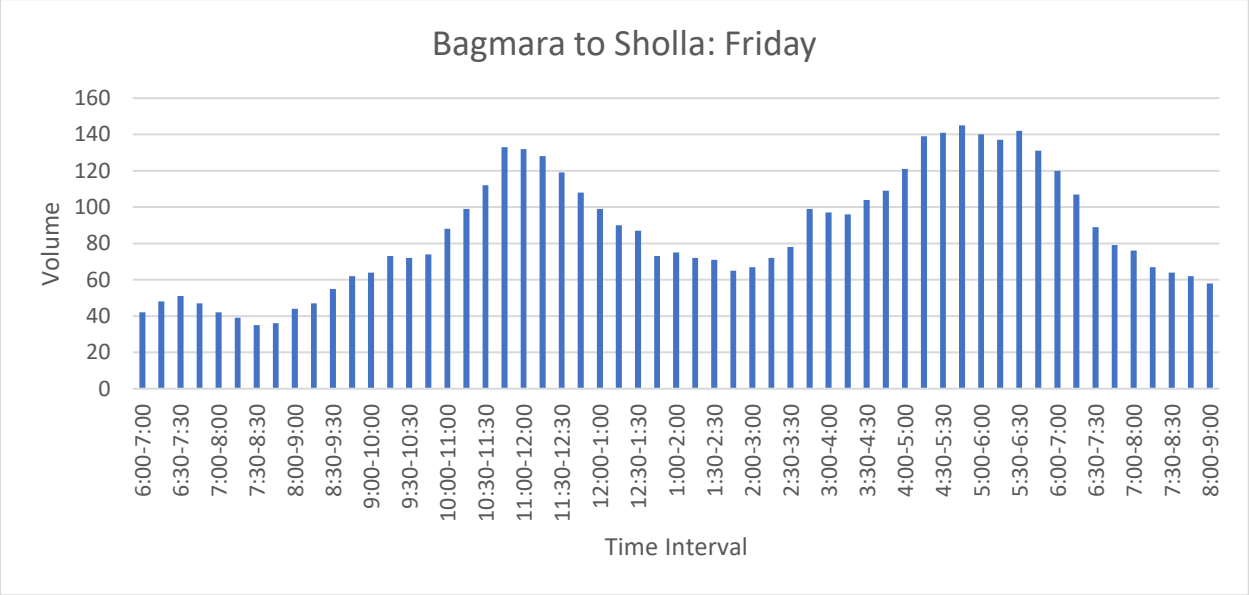
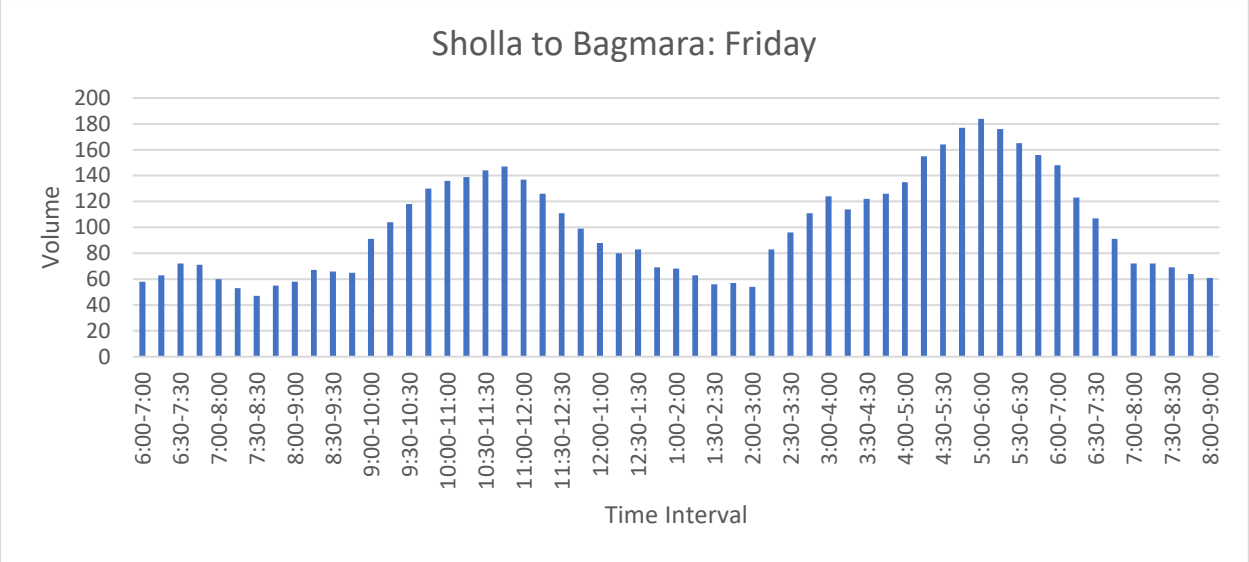
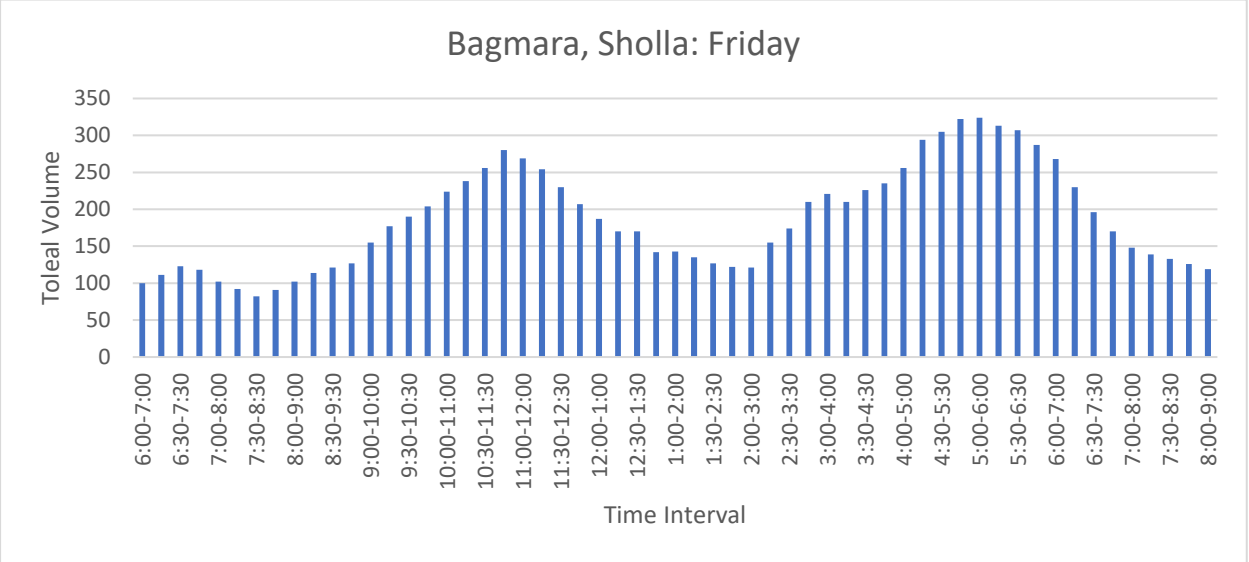
7:00-8:00
7:30-8:30
8:00-9:00
Time Interval



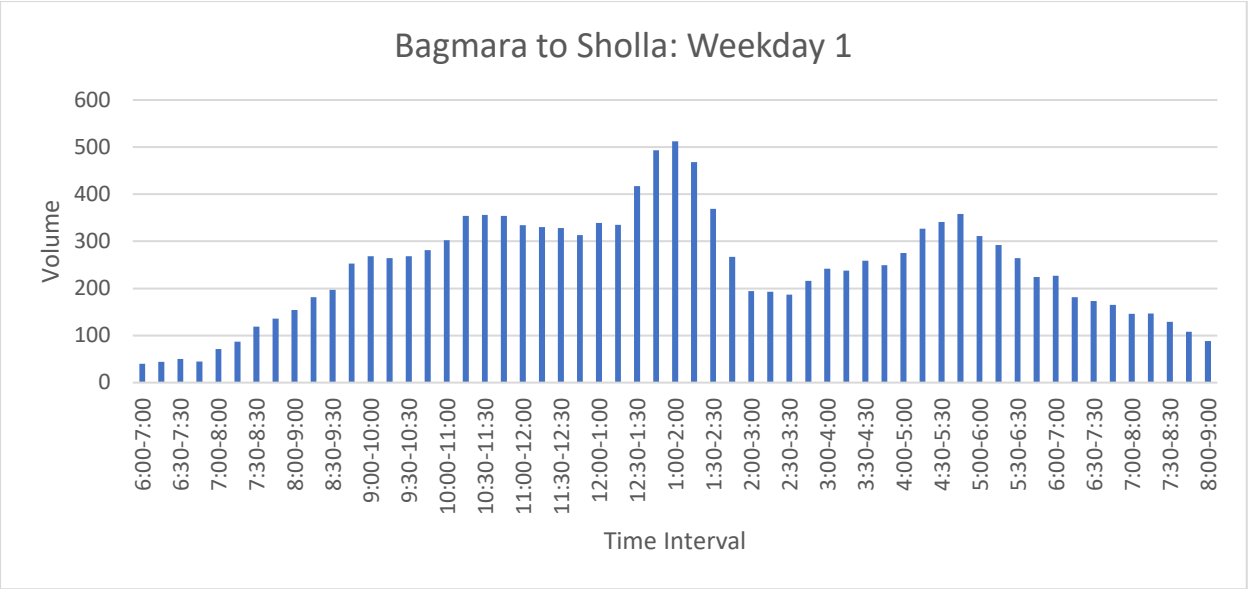
Point 10: Friday







Point 10: Weekday 1


Bagmara to Sholla: Weekday 1
Volume
600
500
400
300
200
100
0
6:00-7:00
6:30-7:30
7:00-8:00
7:30-8:30
8:00-9:00
8:30-9:30
9:00-10:00
9:30-10:30
10:00-11:00
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2:00-3:00
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3:00-4:00
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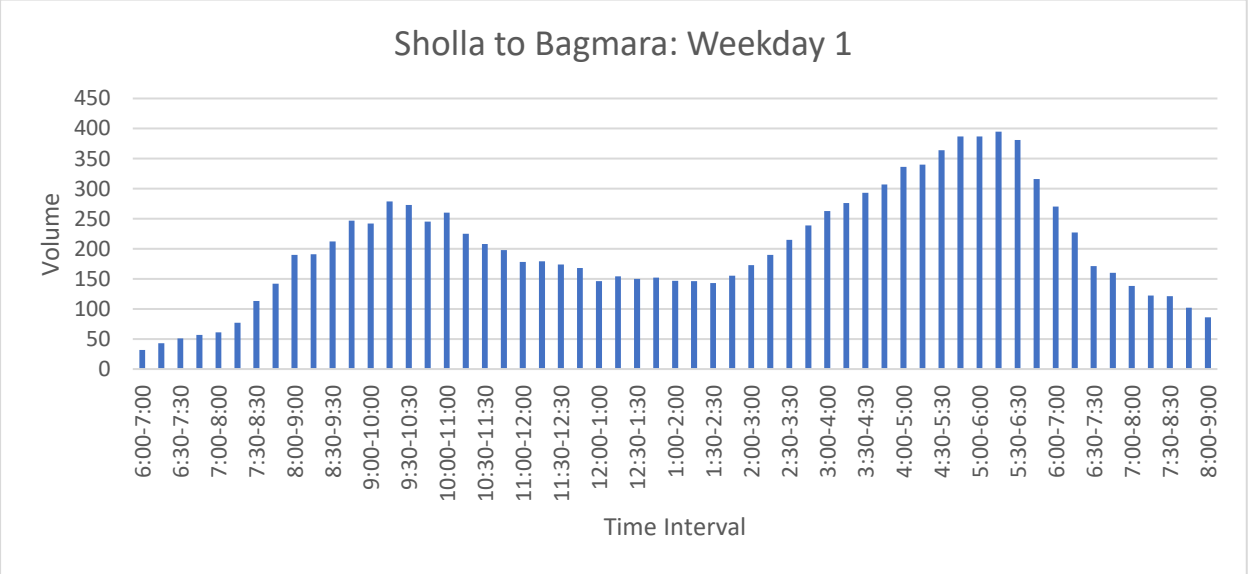
4:00-5:00
4:30-5:30
5:00-6:00
5:30-6:30
6:00-7:00
6:30-7:30
7:00-8:00
7:30-8:30
8:00-9:00
Time Interval


Sholla to Bagmara: Weekday 1
Volume
450
400
350
300
250
200
150
100
50
0
6:00-7:00
6:30-7:30
7:00-8:00
7:30-8:30
8:00-9:00
8:30-9:30
9:00-10:00
9:30-10:30
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1:00-2:00
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5:00-6:00
5:30-6:30
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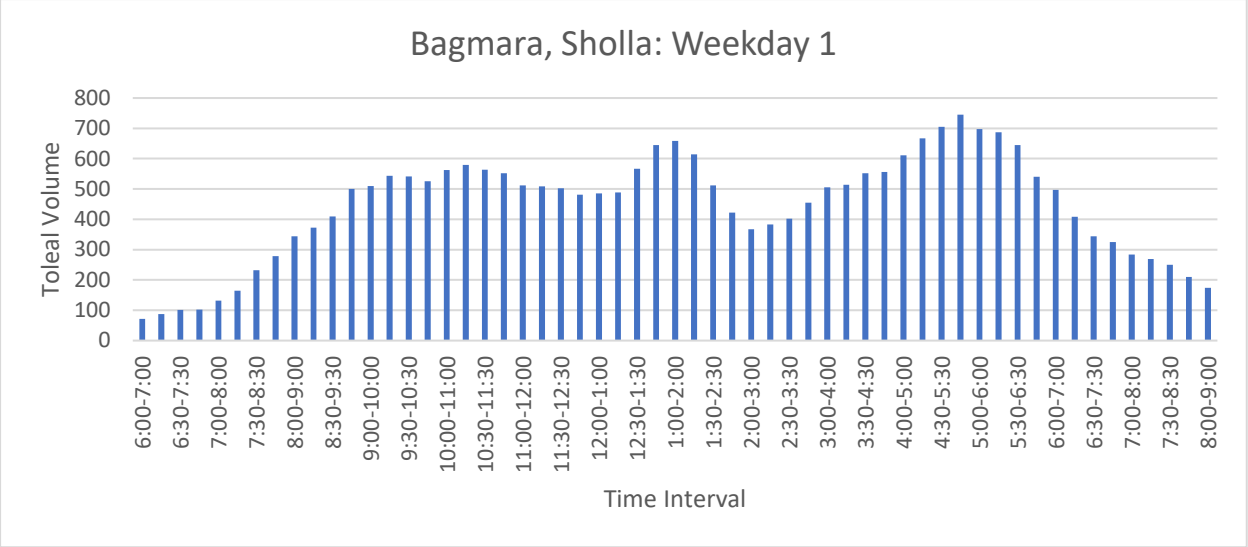
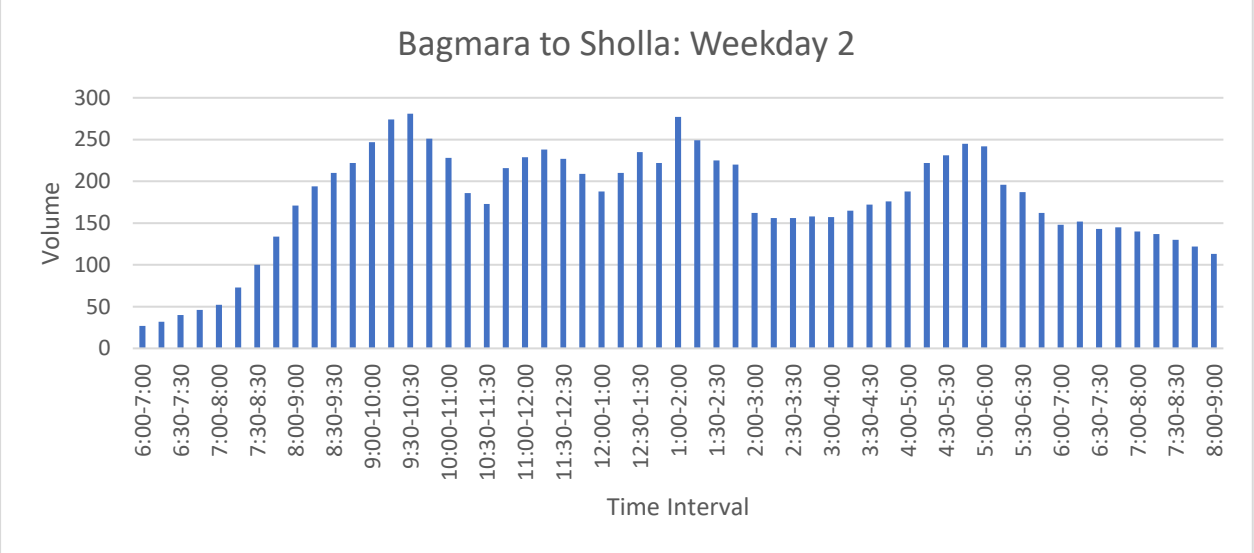
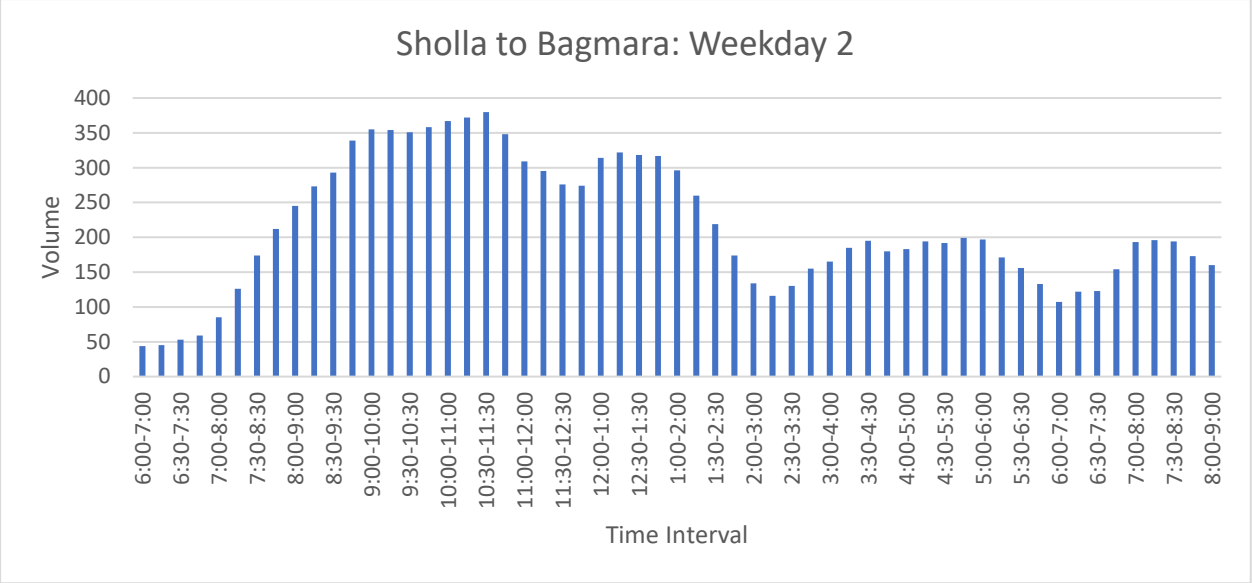
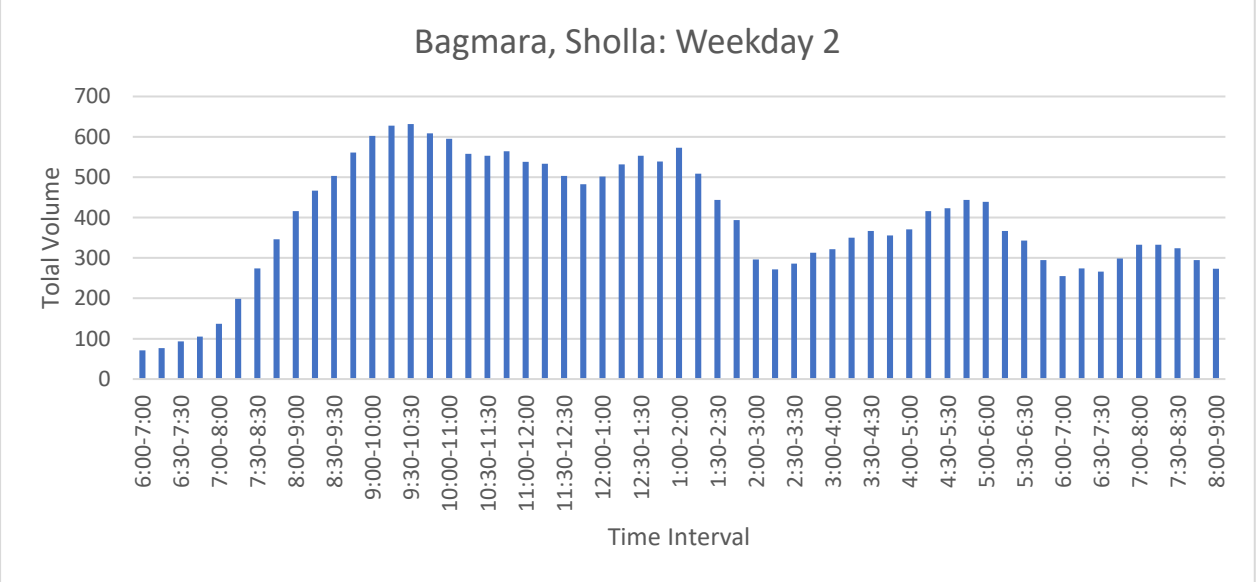
7:00-8:00
7:30-8:30
8:00-9:00
Time Interval



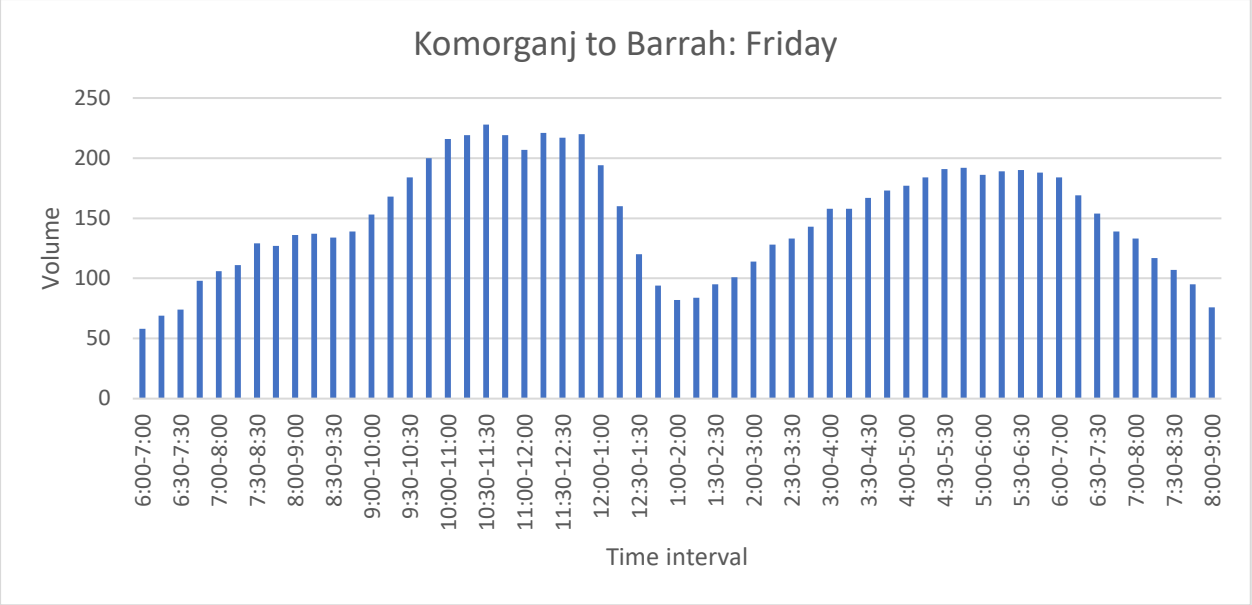
Point 10: Weekday 2







Point 11: Friday


Komorganj to Barrah: Friday
Volume
250
200
150
100
50
0
6:00-7:00
6:30-7:30
7:00-8:00
7:30-8:30
8:00-9:00
8:30-9:30
9:00-10:00
9:30-10:30
10:00-11:00
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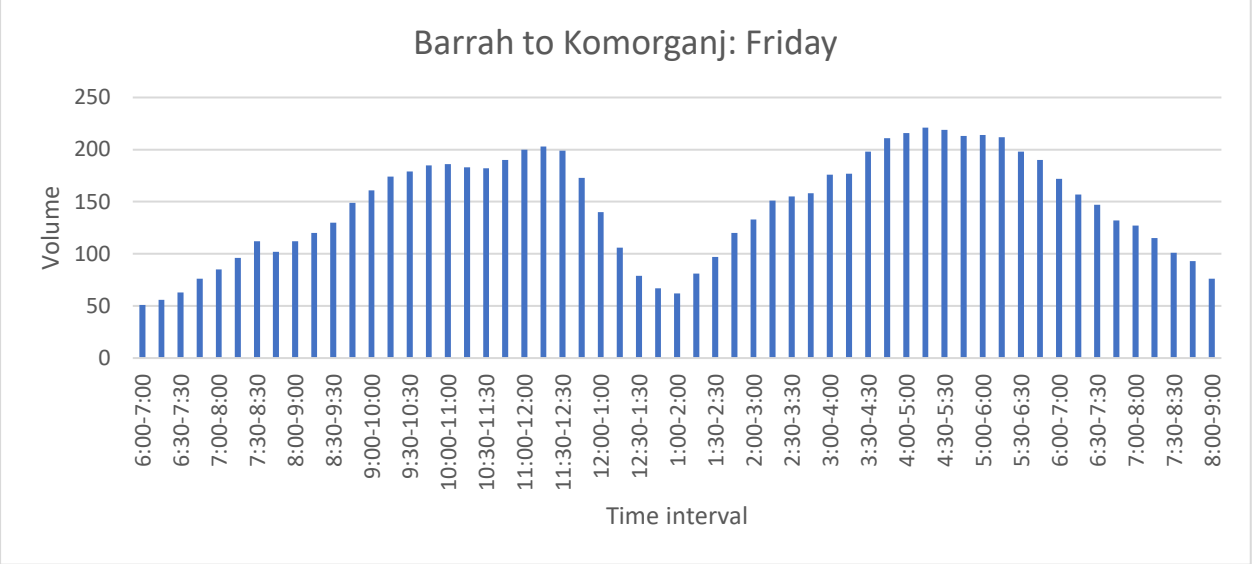
3:30-4:30
4:00-5:00
4:30-5:30
5:00-6:00
5:30-6:30
6:00-7:00
6:30-7:30
7:00-8:00
7:30-8:30
8:00-9:00
Time interval


Barrah to Komorganj: Friday
Volume
250
200
150
100
50
0
6:00-7:00
6:30-7:30
7:00-8:00
7:30-8:30
8:00-9:00
8:30-9:30
9:00-10:00
9:30-10:30
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11:00-12:00
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5:00-6:00
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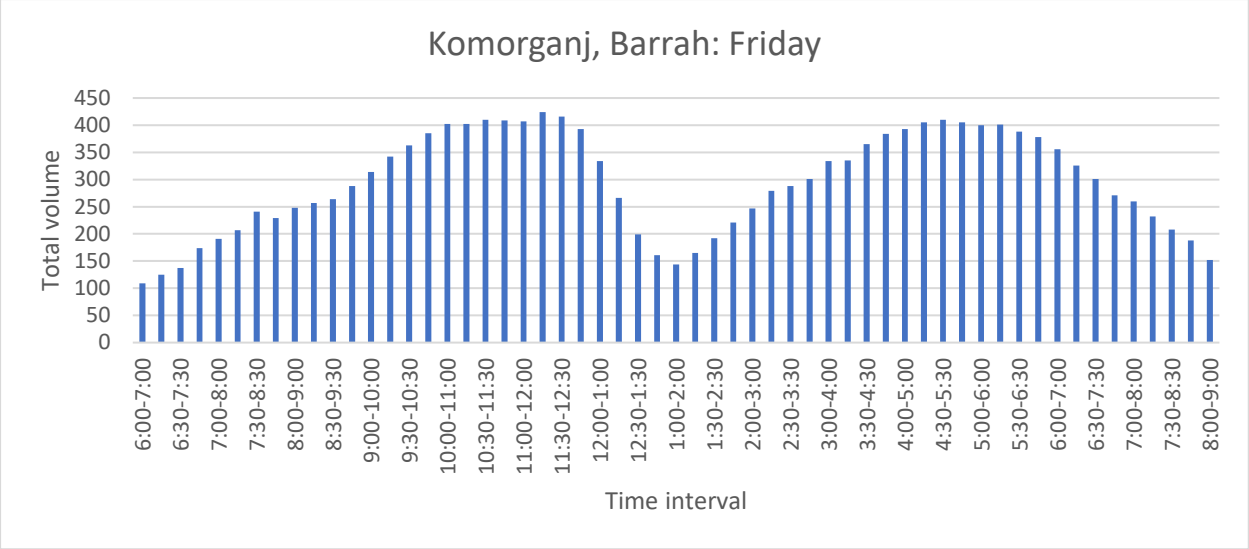
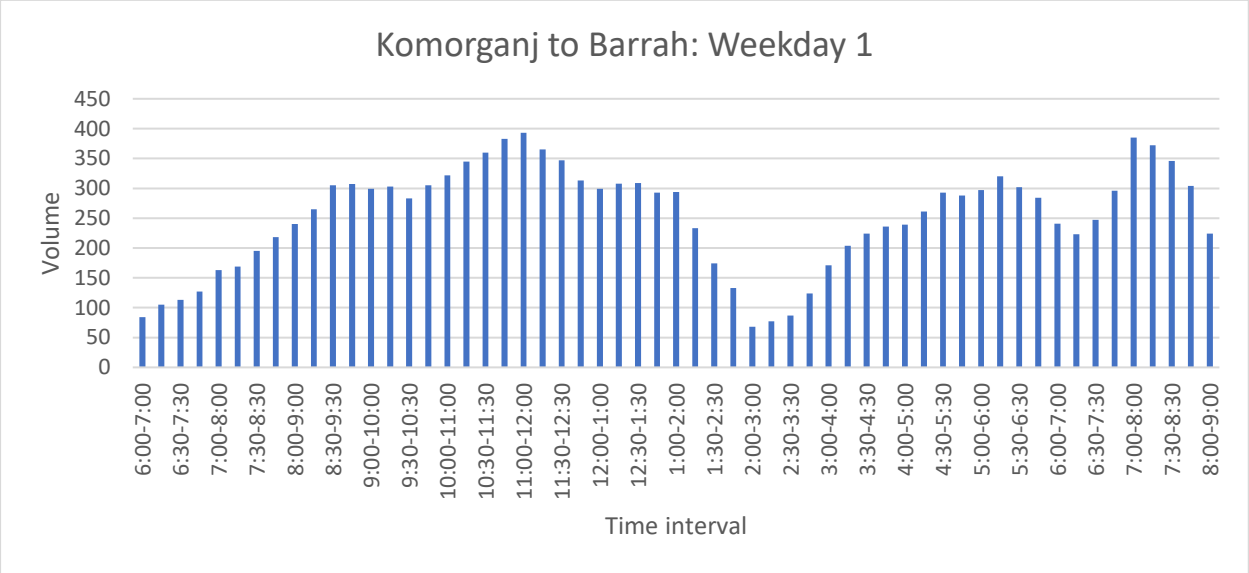
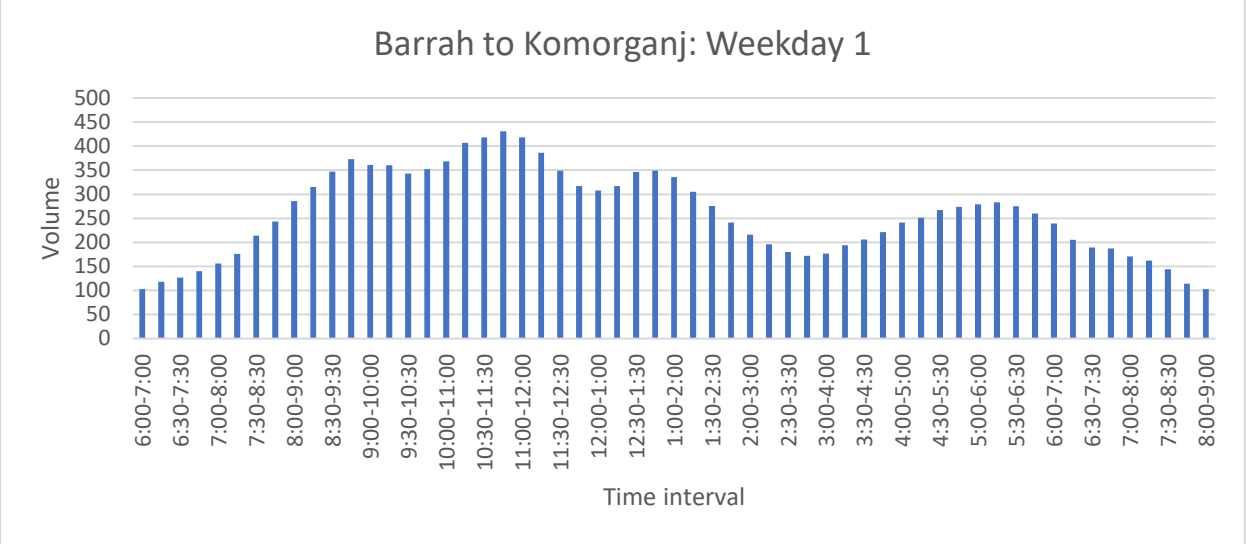
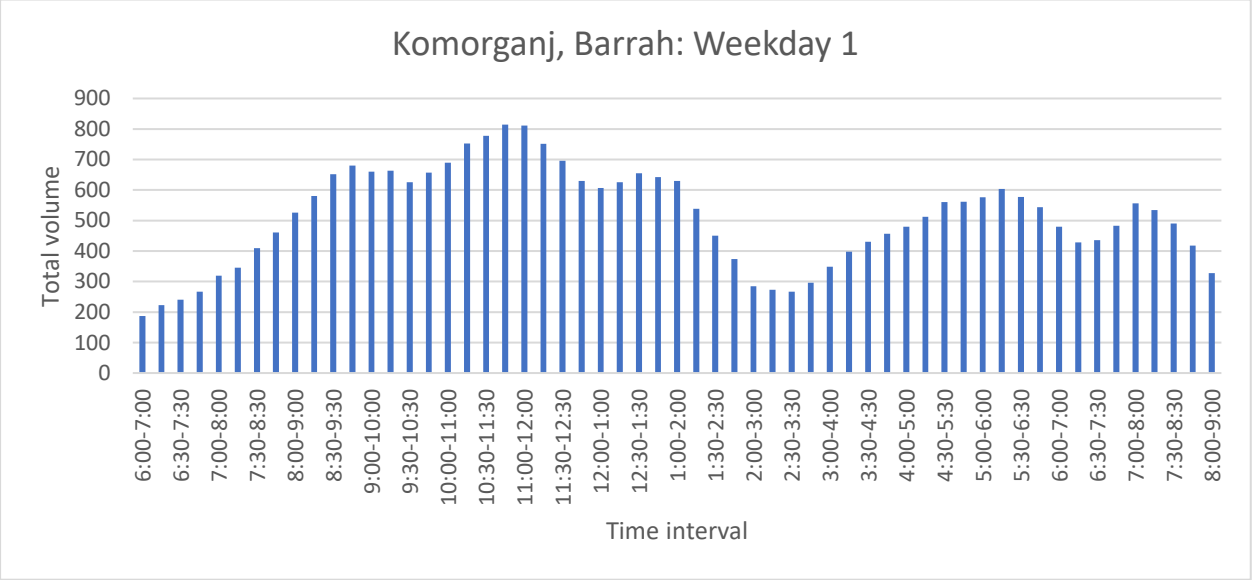
7:00-8:00
7:30-8:30
8:00-9:00
Time interval



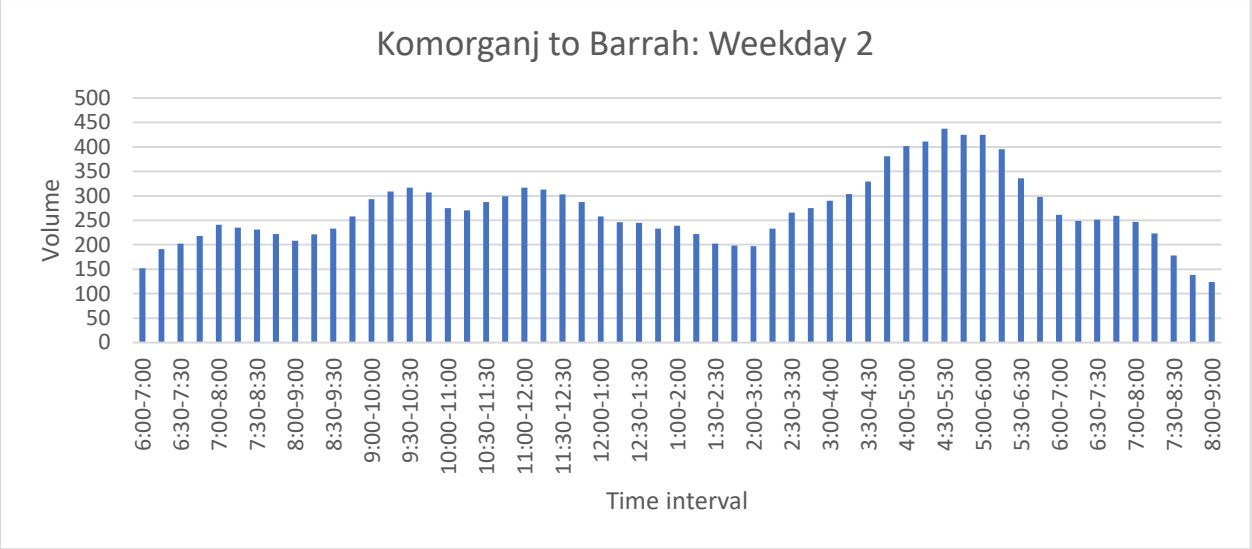
Point 11: Weekday 1







Point 11: Weekday 2


Komorganj to Barrah: Weekday 2
Volume
500
450
400
350
300
250
200
150
100
50
0
6:00-7:00
6:30-7:30
7:00-8:00
7:30-8:30
8:00-9:00
8:30-9:30
9:00-10:00
9:30-10:30
10:00-11:00
10:30-11:30
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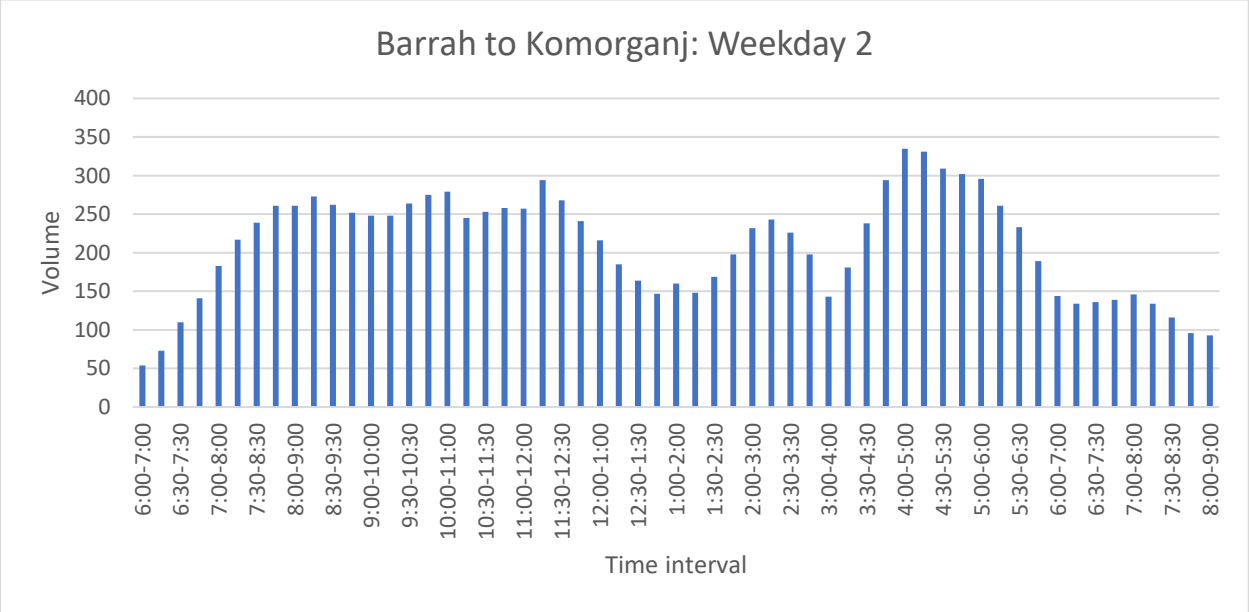
5:00-6:00
5:30-6:30
6:00-7:00
6:30-7:30
7:00-8:00
7:30-8:30
8:00-9:00
Time interval


Barrah to Komorganj: Weekday 2
Volume
400
350
300
250
200
150
100
50
0
6:00-7:00
6:30-7:30
7:00-8:00
7:30-8:30
8:00-9:00
8:30-9:30
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5:00-6:00
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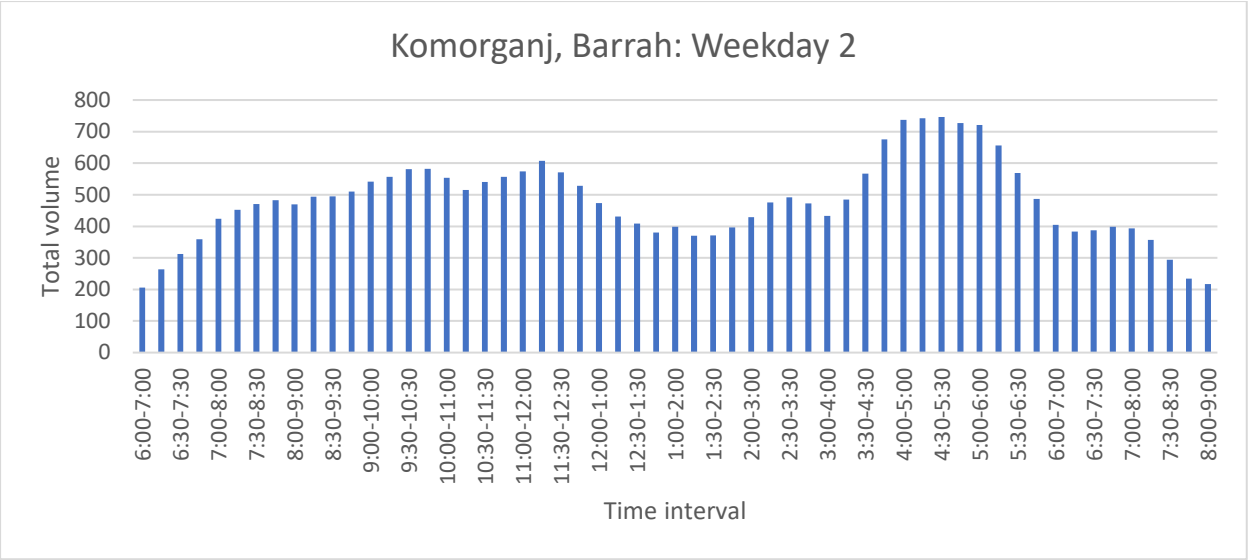
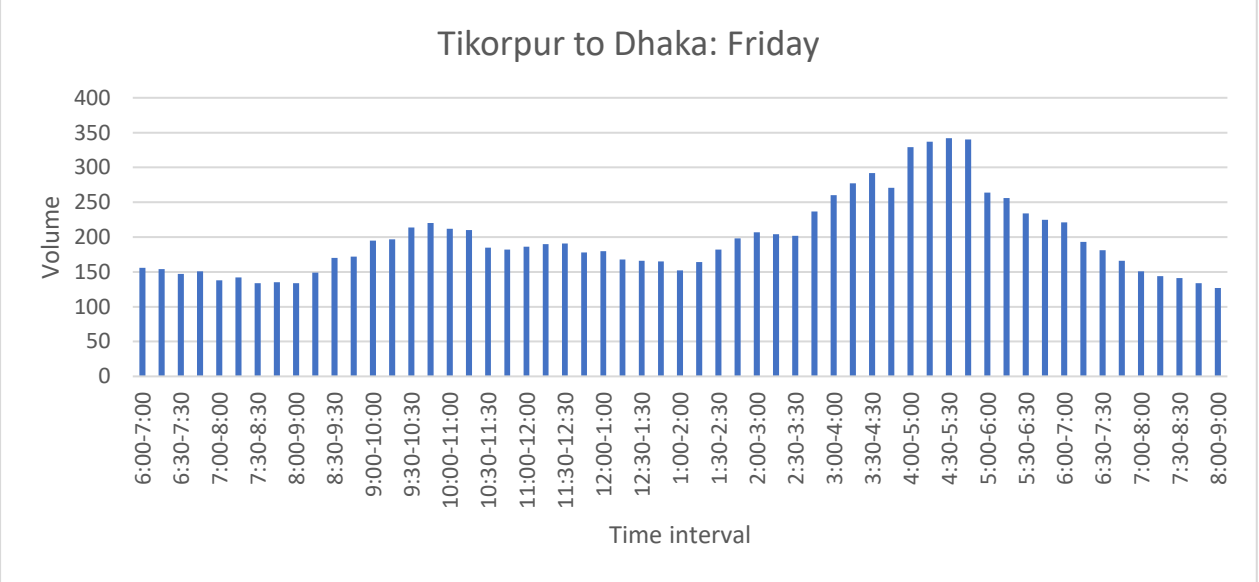
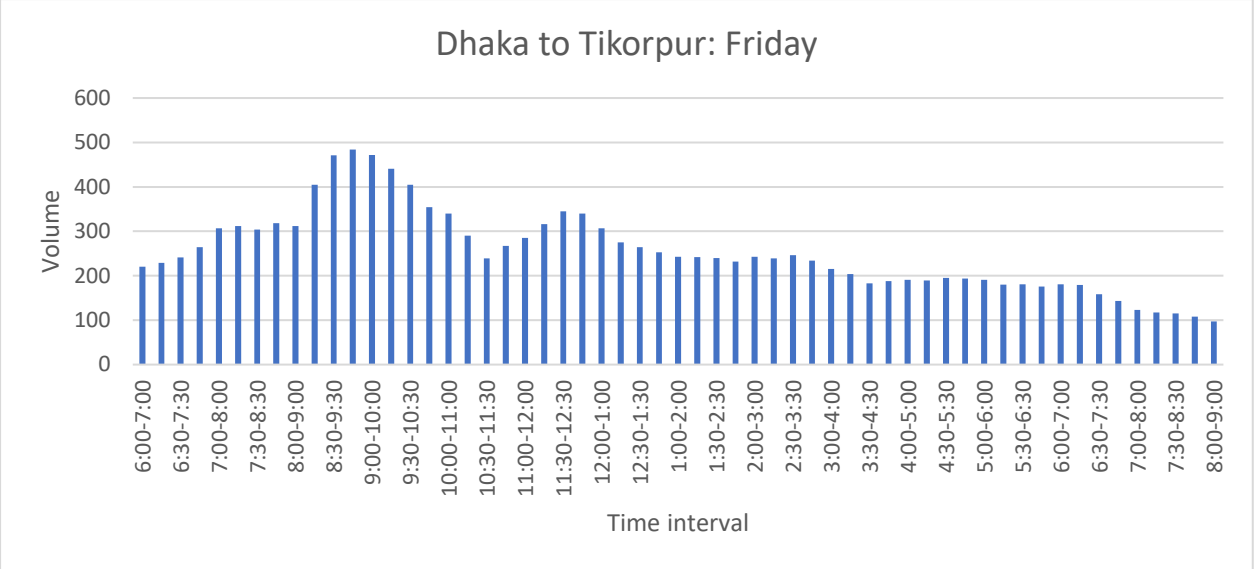
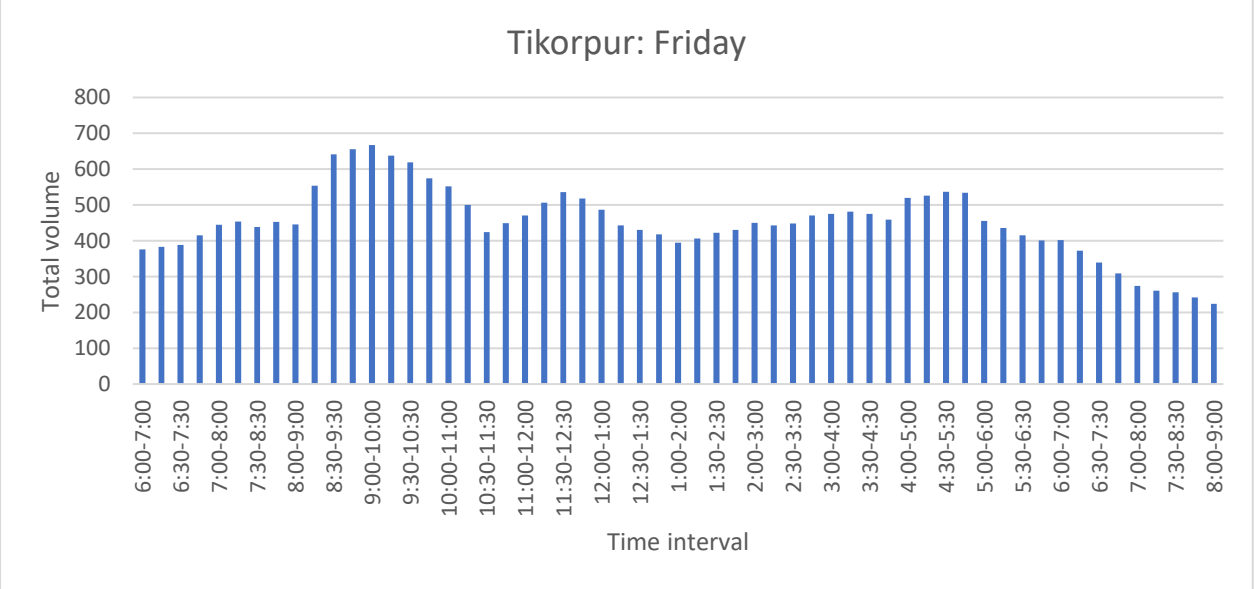
6:30-7:30
7:00-8:00
7:30-8:30
8:00-9:00
Time interval



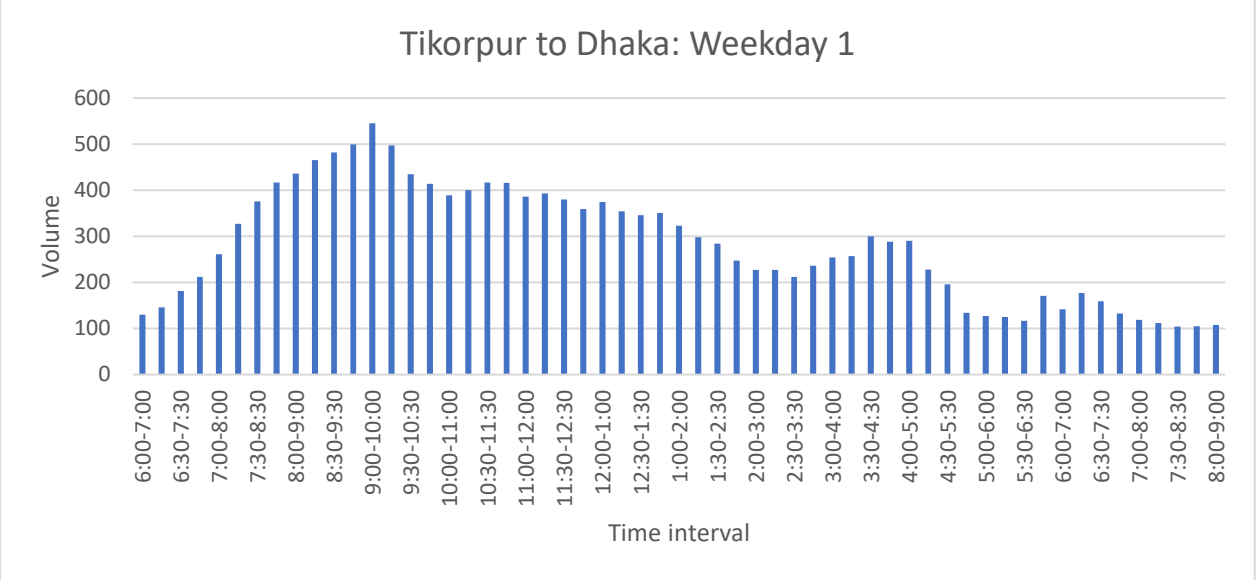
Point 12: Friday







Point 12: Weekday 1


Tikorpur to Dhaka: Weekday 1
Volume
600
500
400
300
200
100
0
6:00-7:00
6:30-7:30
7:00-8:00
7:30-8:30
8:00-9:00
8:30-9:30
9:00-10:00
9:30-10:30
10:00-11:00
10:30-11:30
11:00-12:00
11:30-12:30
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1:30-2:30
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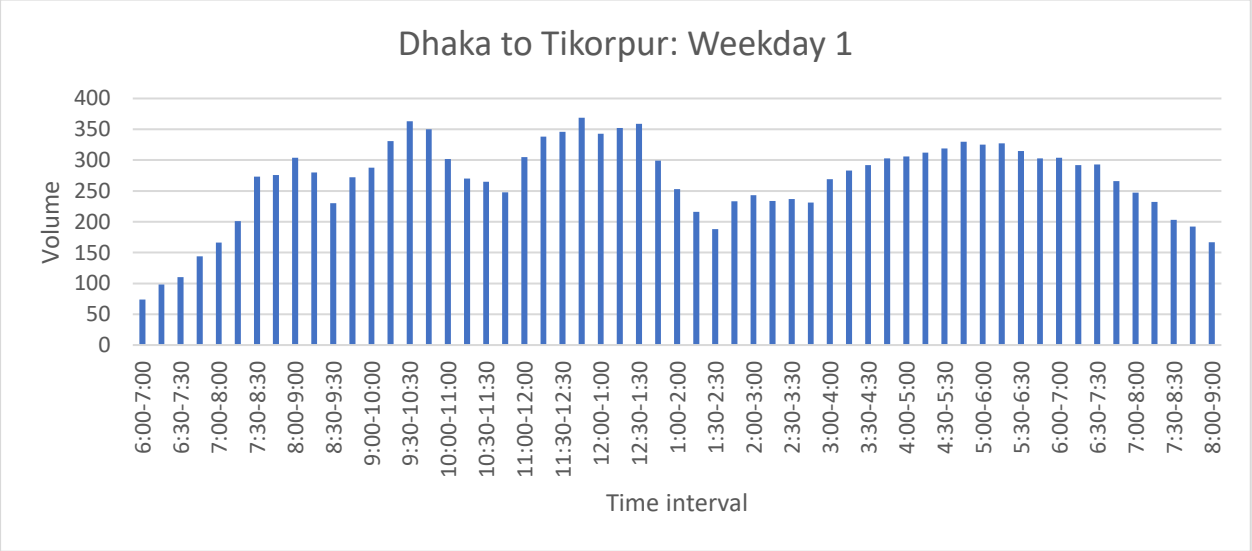
5:00-6:00
5:30-6:30
6:00-7:00
6:30-7:30
7:00-8:00
7:30-8:30
8:00-9:00
Time interval


Dhaka to Tikorpur: Weekday 1
Volume
400
350
300
250
200
150
100
50
0
6:00-7:00
6:30-7:30
7:00-8:00
7:30-8:30
8:00-9:00
8:30-9:30
9:00-10:00
9:30-10:30
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5:00-6:00
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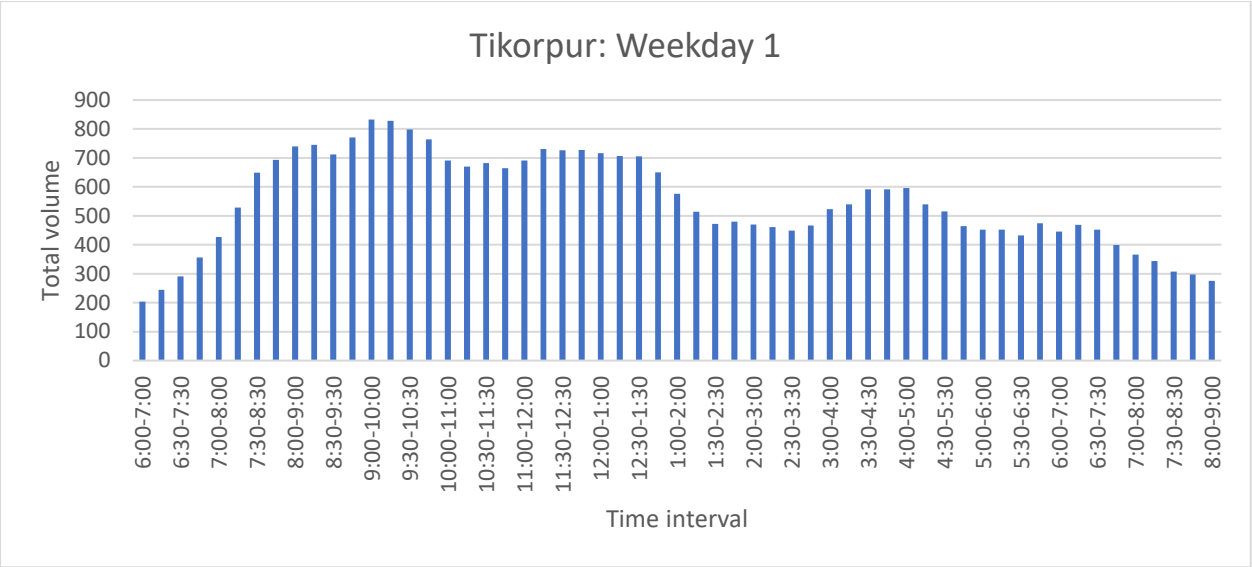
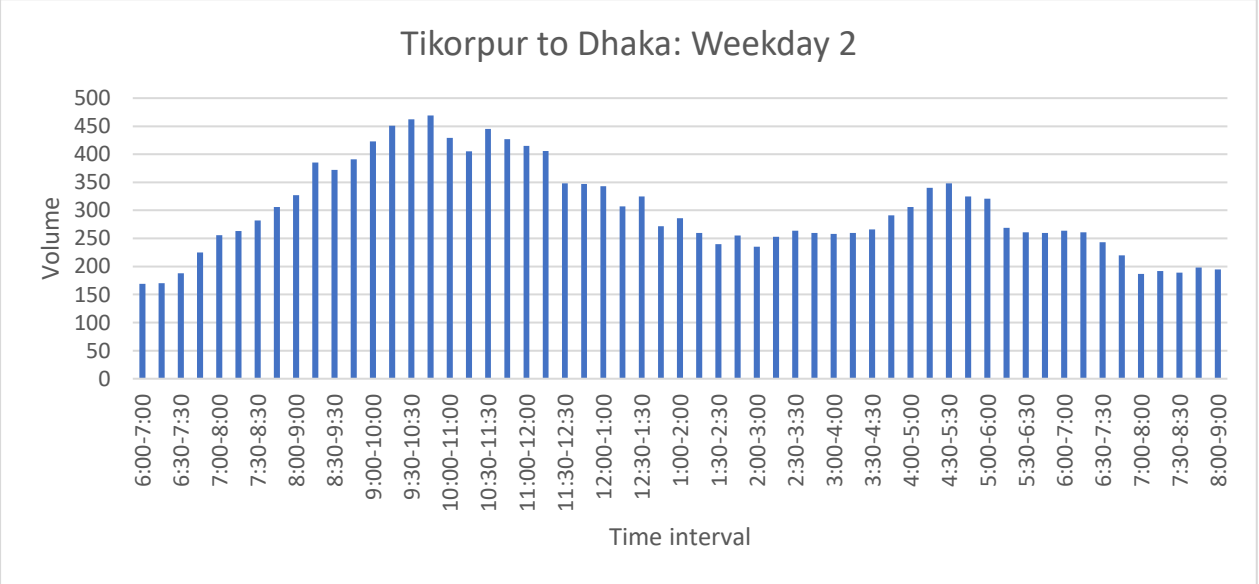
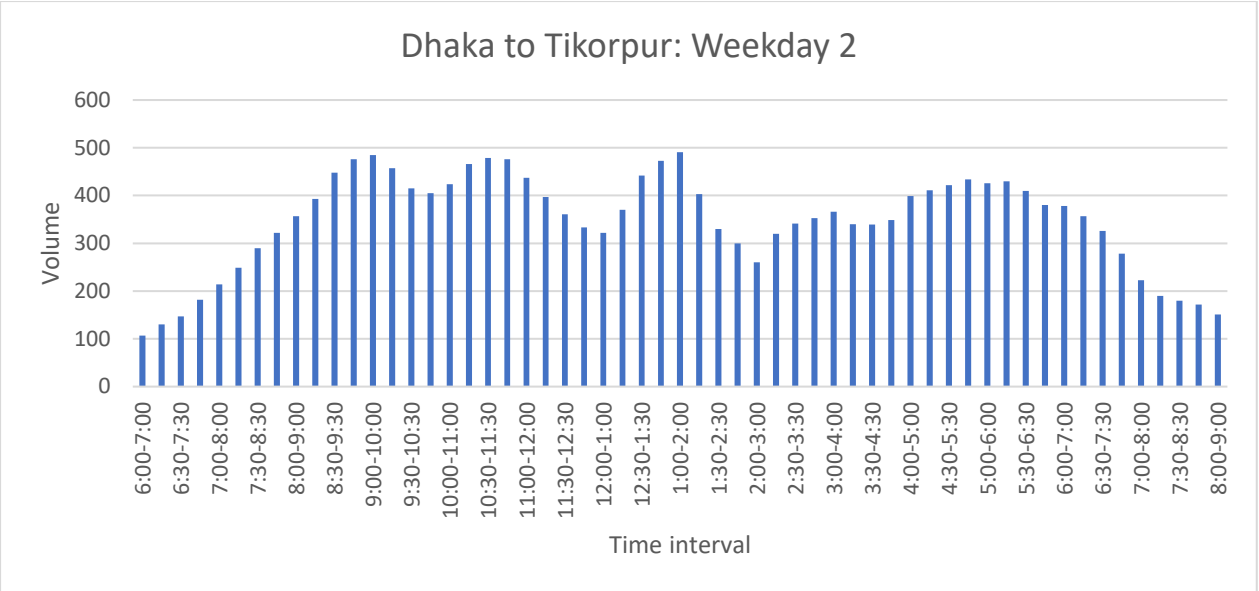
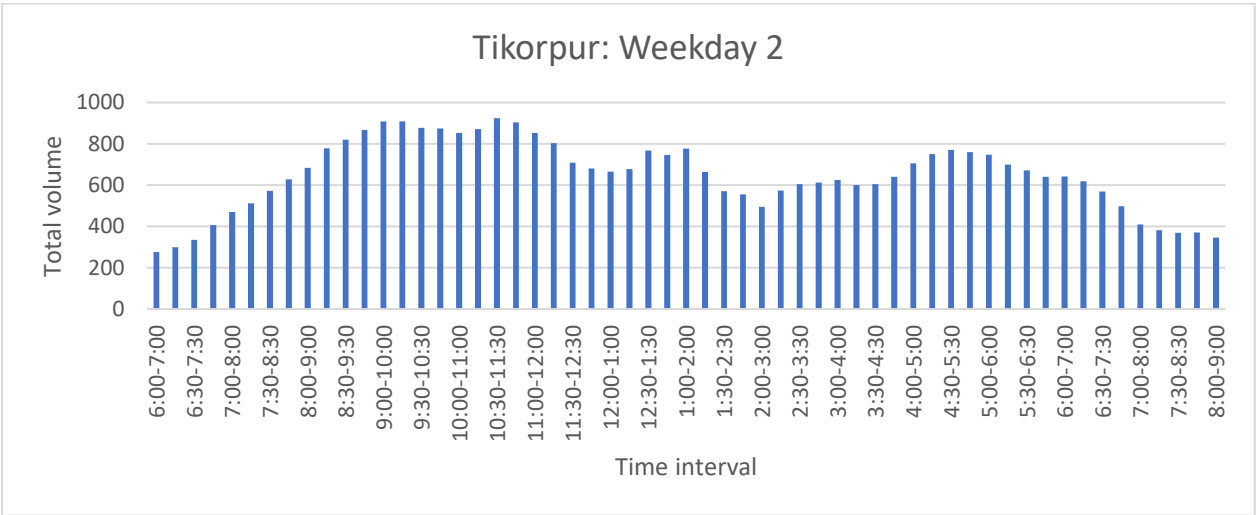
7:00-8:00
7:30-8:30
8:00-9:00
Time interval



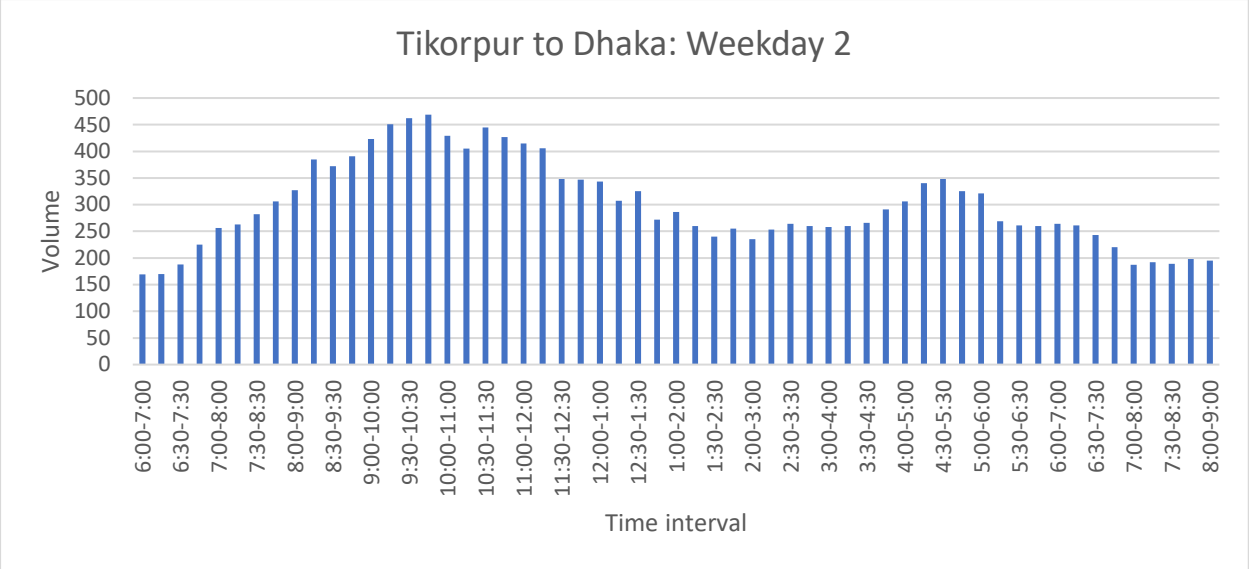
Point 12: Weekday 2







Point 13: Friday


Tikorpur to Dhaka: Weekday 2
Volume
500
450
400
350
300
250
200
150
100
50
0
6:00-7:00
6:30-7:30
7:00-8:00
7:30-8:30
8:00-9:00
8:30-9:30
9:00-10:00
9:30-10:30
10:00-11:00
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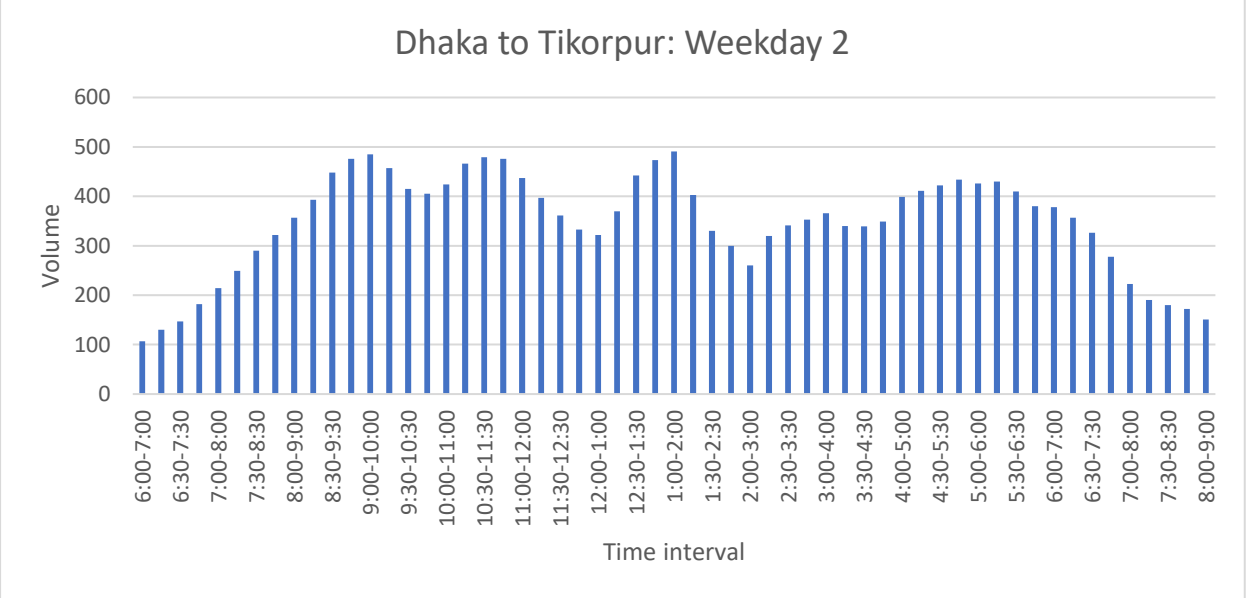
5:00-6:00
5:30-6:30
6:00-7:00
6:30-7:30
7:00-8:00
7:30-8:30
8:00-9:00
Time interval


Dhaka to Tikorpur: Weekday 2
Volume
600
500
400
300
200
100
0
6:00-7:00
6:30-7:30
7:00-8:00
7:30-8:30
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8:30-9:30
9:00-10:00
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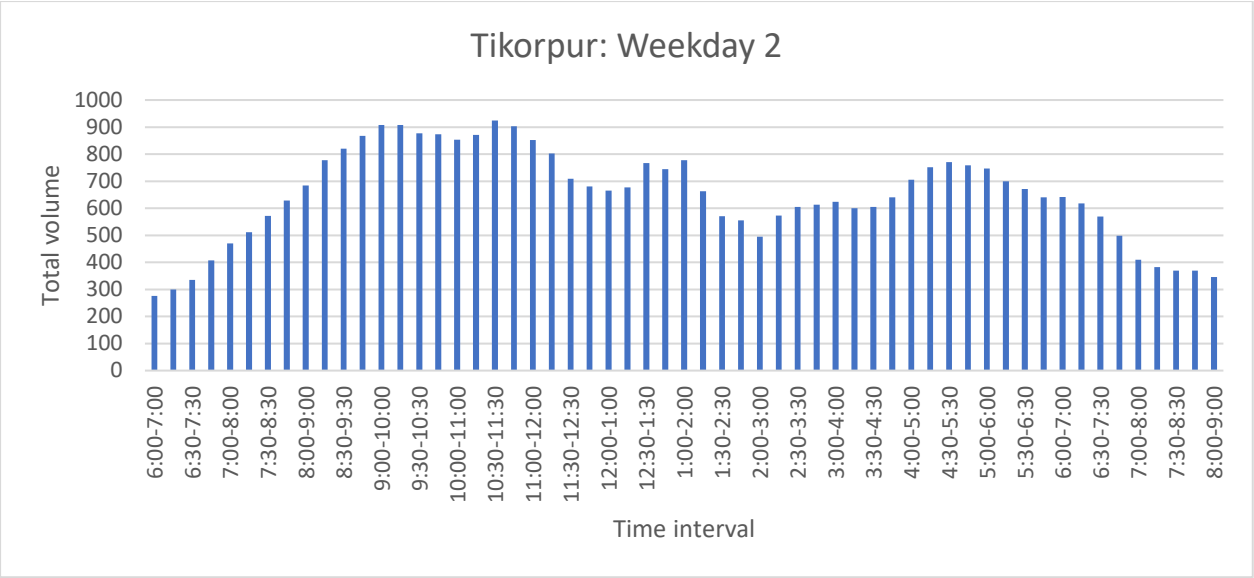
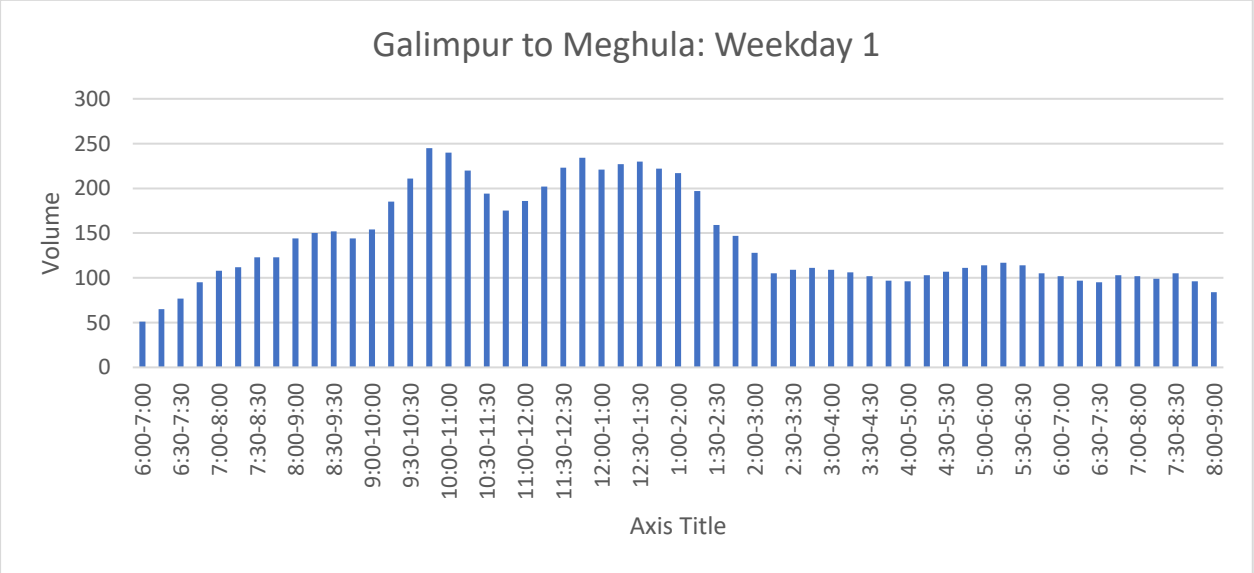
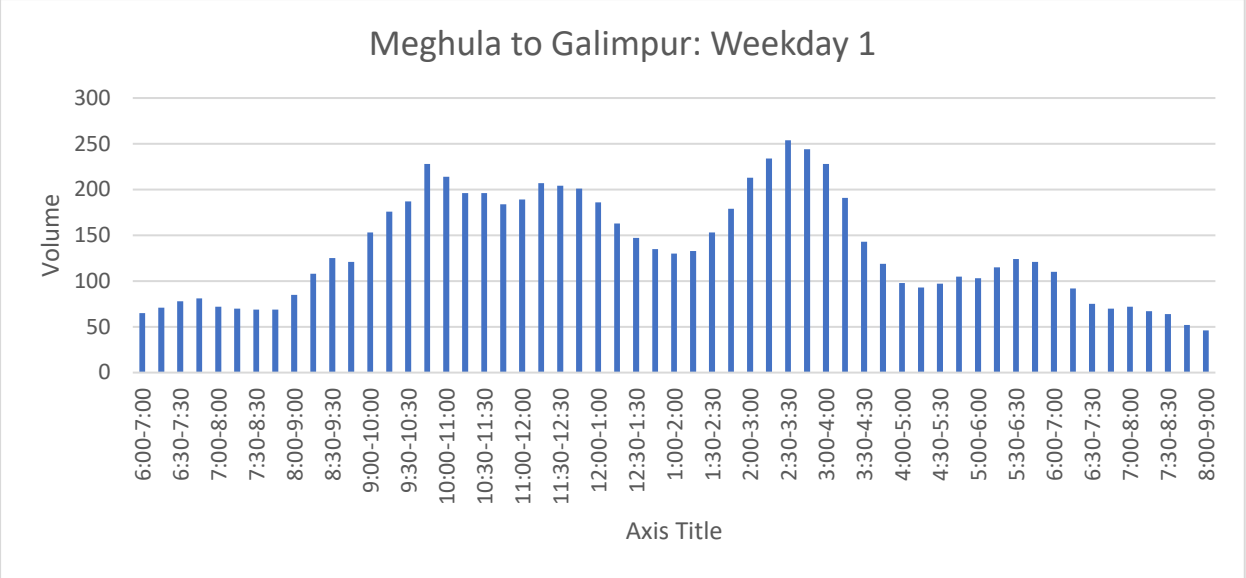
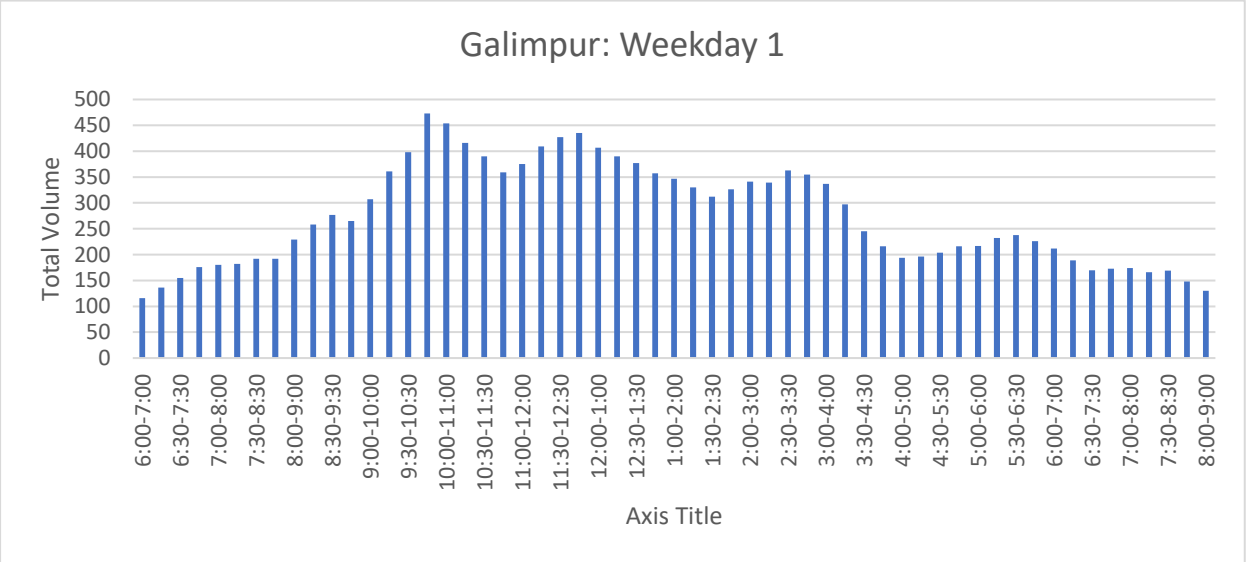
5:30-6:30
6:00-7:00
6:30-7:30
7:00-8:00
7:30-8:30
8:00-9:00
Time interval



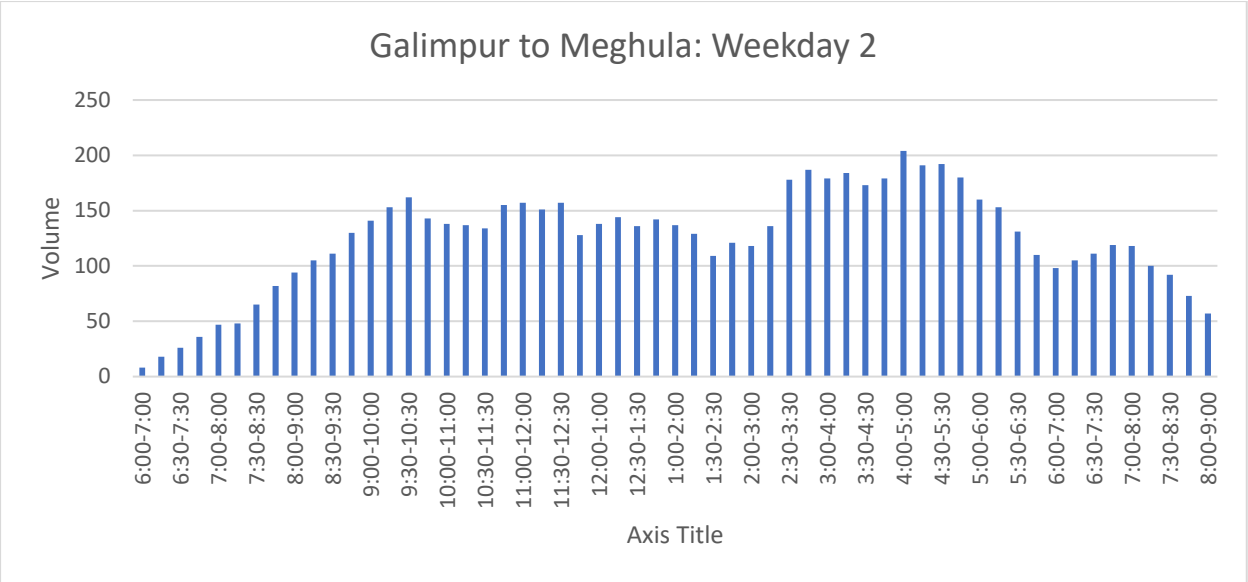
Point 13: Weekday 1







Point 13: Weekday 2


Galimpur to Meghula: Weekday 2
Volume
250
200
150
100
50
0
6:00-7:00
6:30-7:30
7:00-8:00
7:30-8:30
8:00-9:00
8:30-9:30
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5:00-6:00
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6:00-7:00
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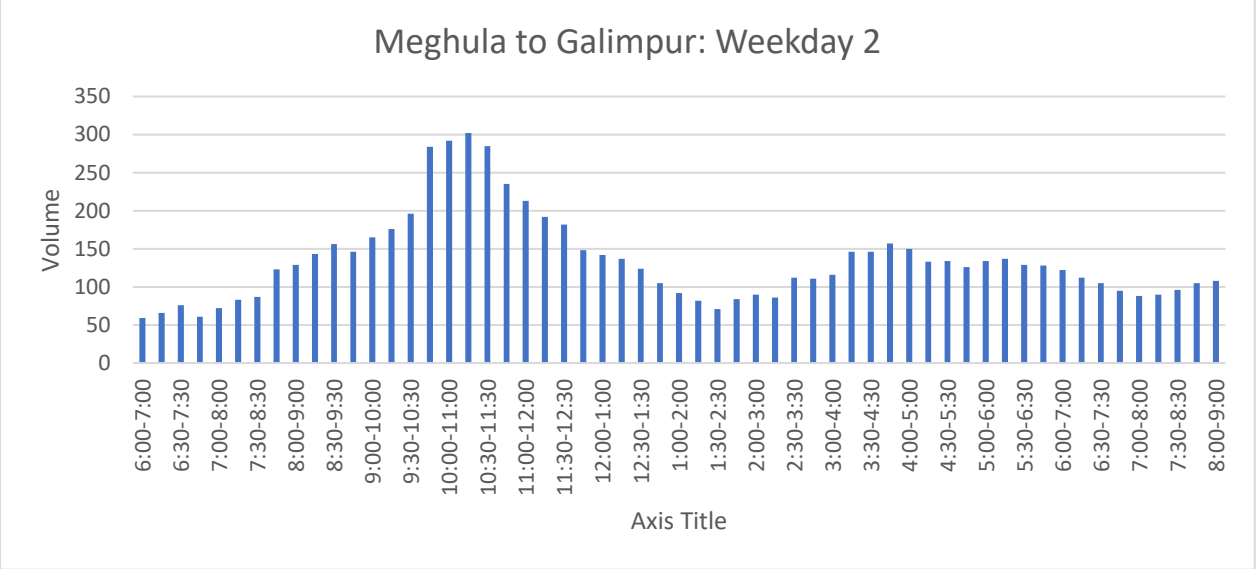
7:00-8:00
7:30-8:30
8:00-9:00
Axis Title


Meghula to Galimpur: Weekday 2
Volume
350
300
250
200
150
100
50
0
6:00-7:00
6:30-7:30
7:00-8:00
7:30-8:30
8:00-9:00
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5:00-6:00
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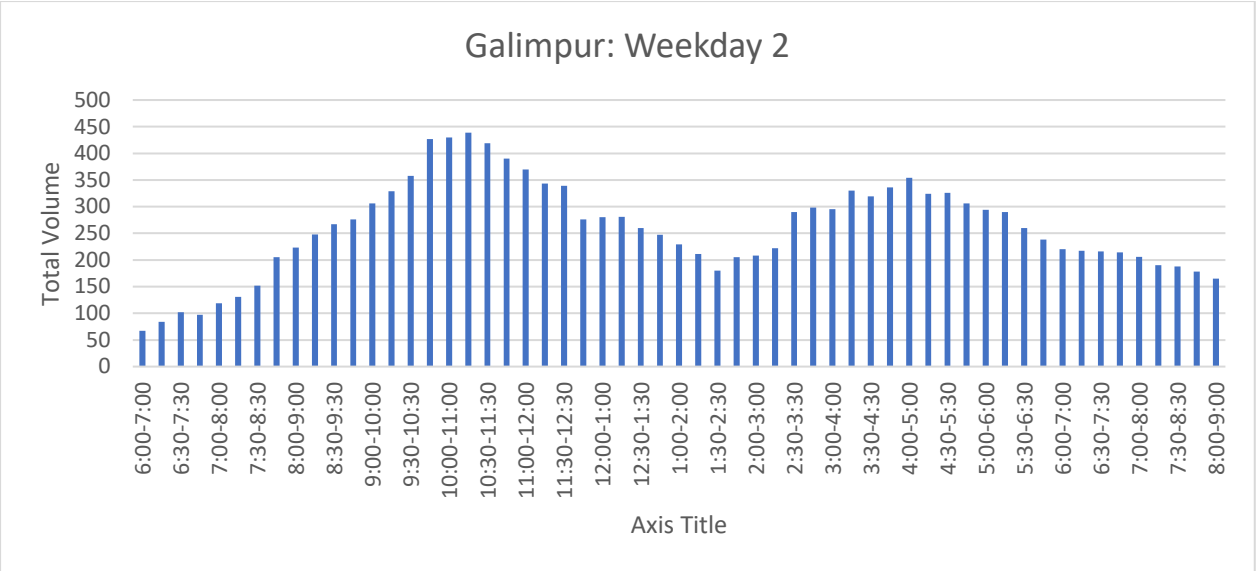
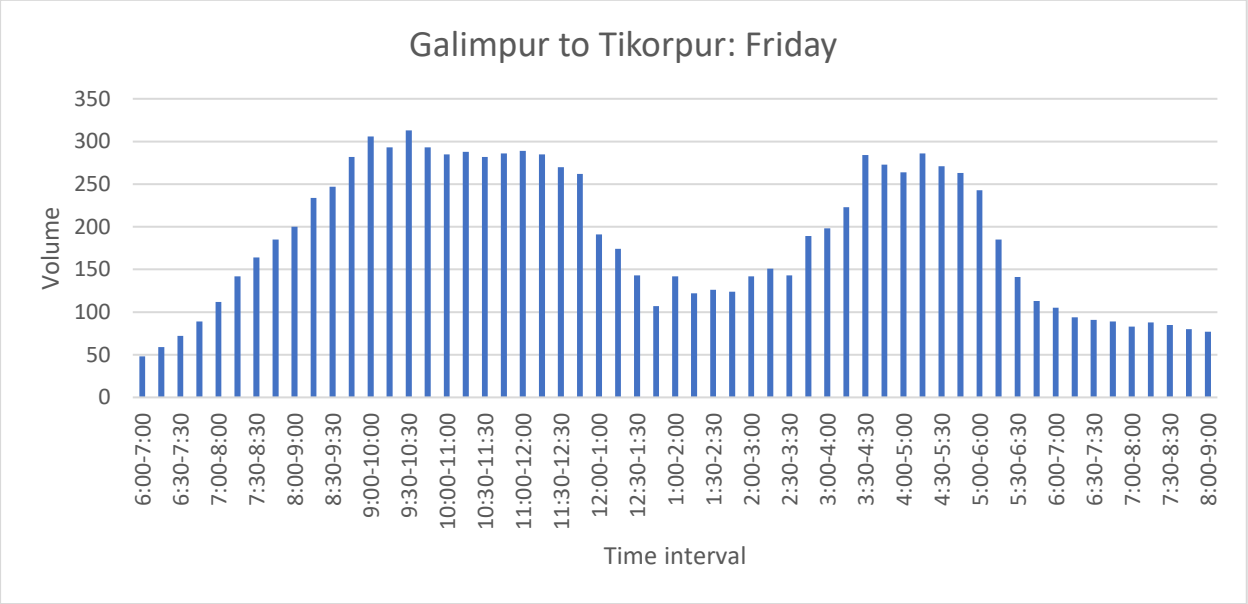
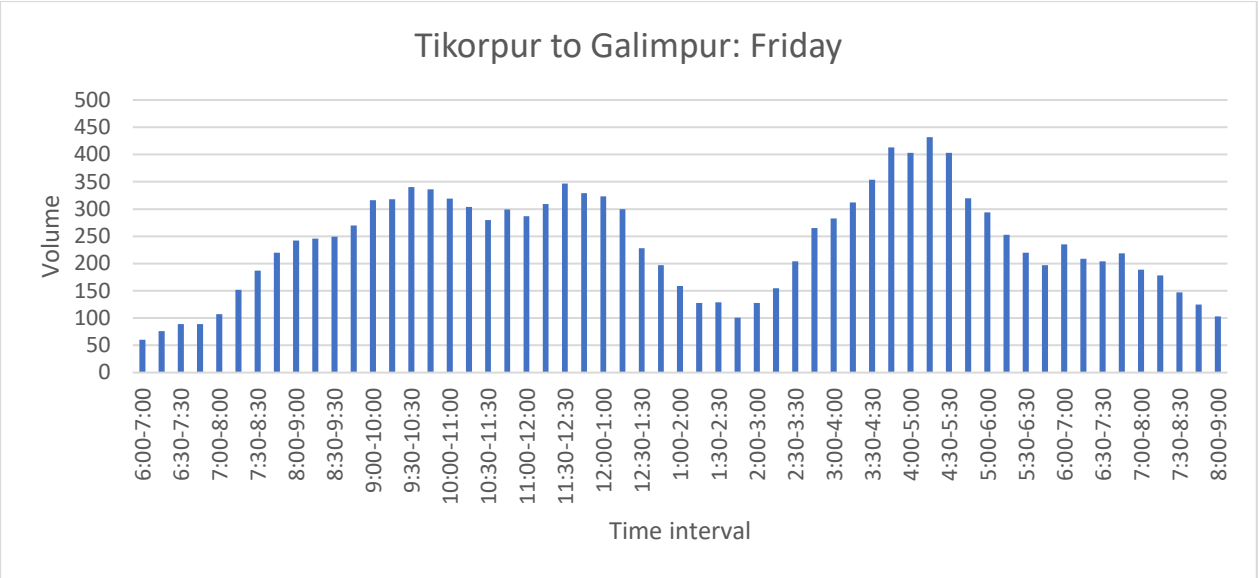
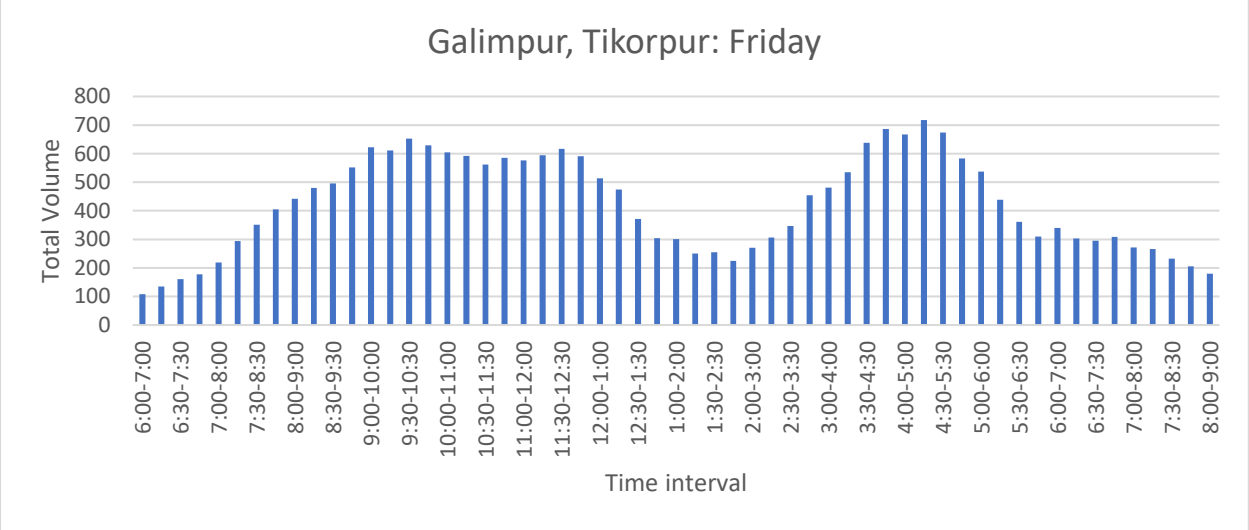
7:00-8:00
7:30-8:30
8:00-9:00
Axis Title



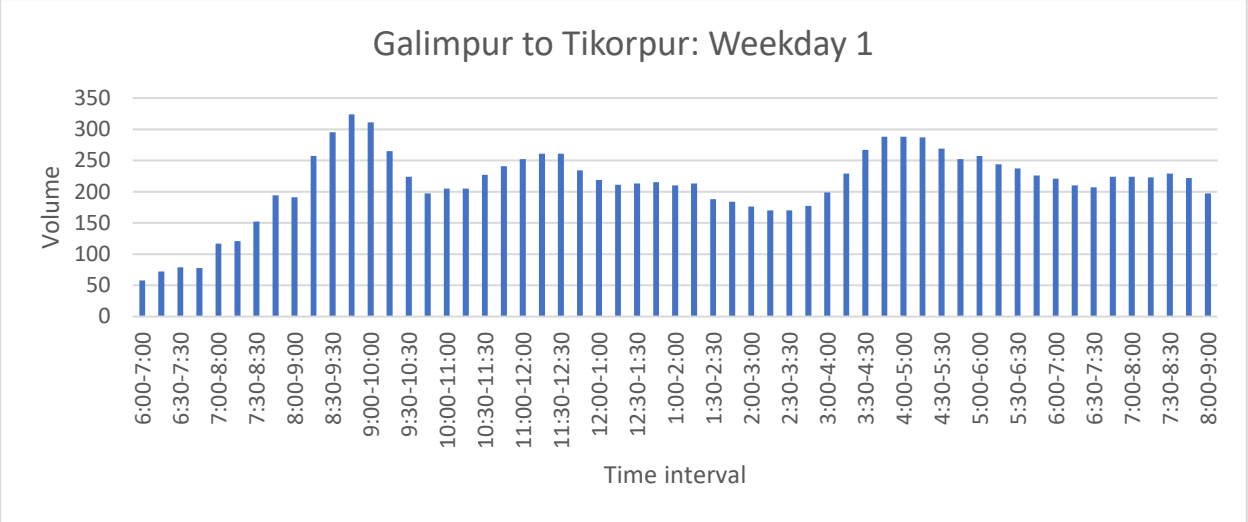
Point 14: Friday







Point 14: Weekday 1


Galimpur to Tikorpur: Weekday 1
Volume
350
300
250
200
150
100
50
0
6:00-7:00
6:30-7:30
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7:30-8:30
8:00-9:00
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9:30-10:30
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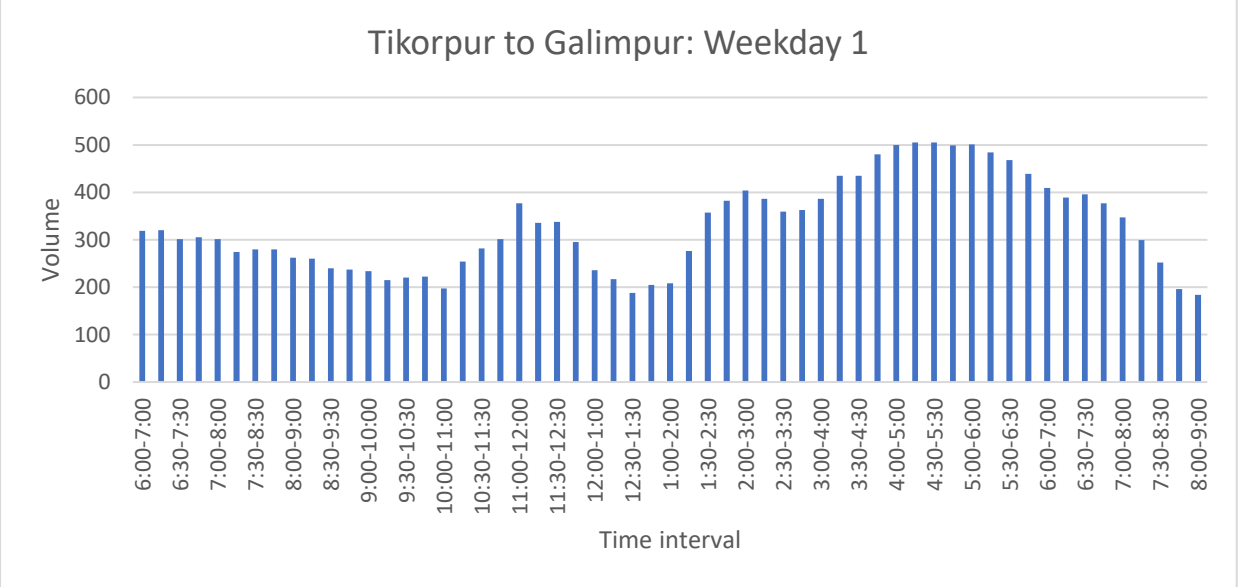
5:00-6:00
5:30-6:30
6:00-7:00
6:30-7:30
7:00-8:00
7:30-8:30
8:00-9:00
Time interval


Tikorpur to Galimpur: Weekday 1
Volume
600
500
400
300
200
100
0
6:00-7:00
6:30-7:30
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7:30-8:30
8:00-9:00
8:30-9:30
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5:00-6:00
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6:00-7:00
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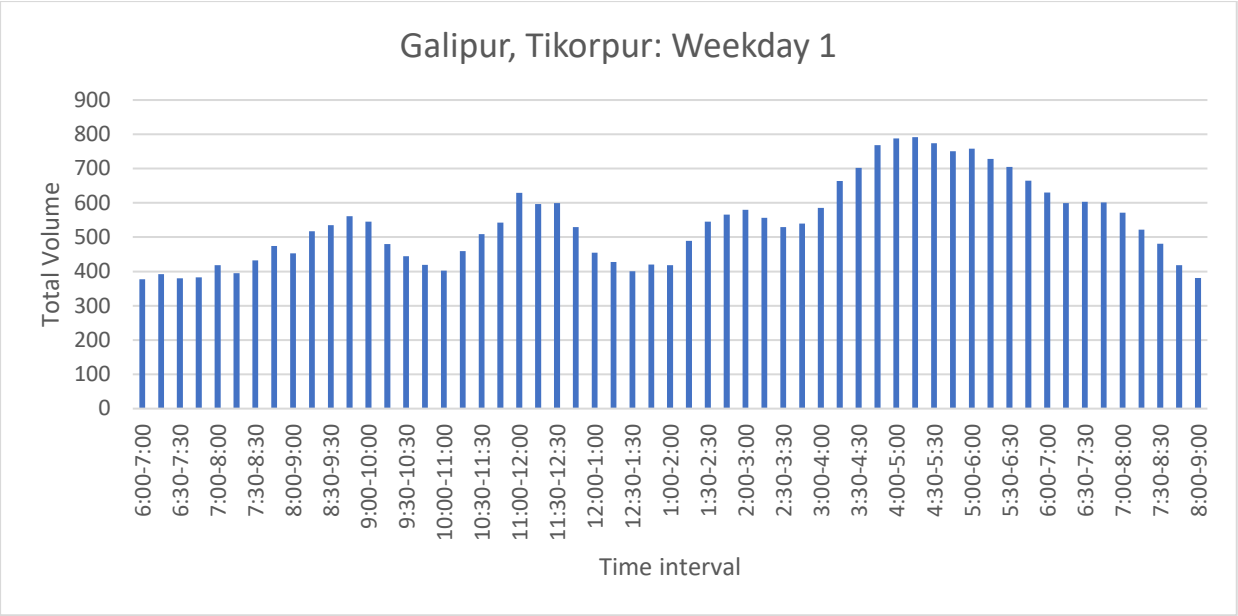
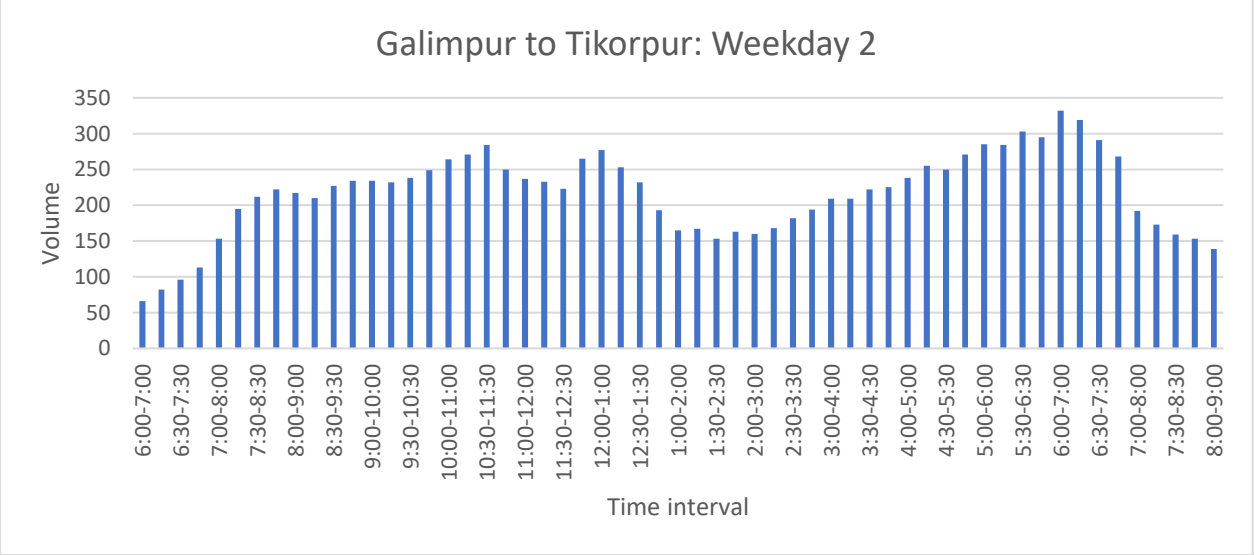
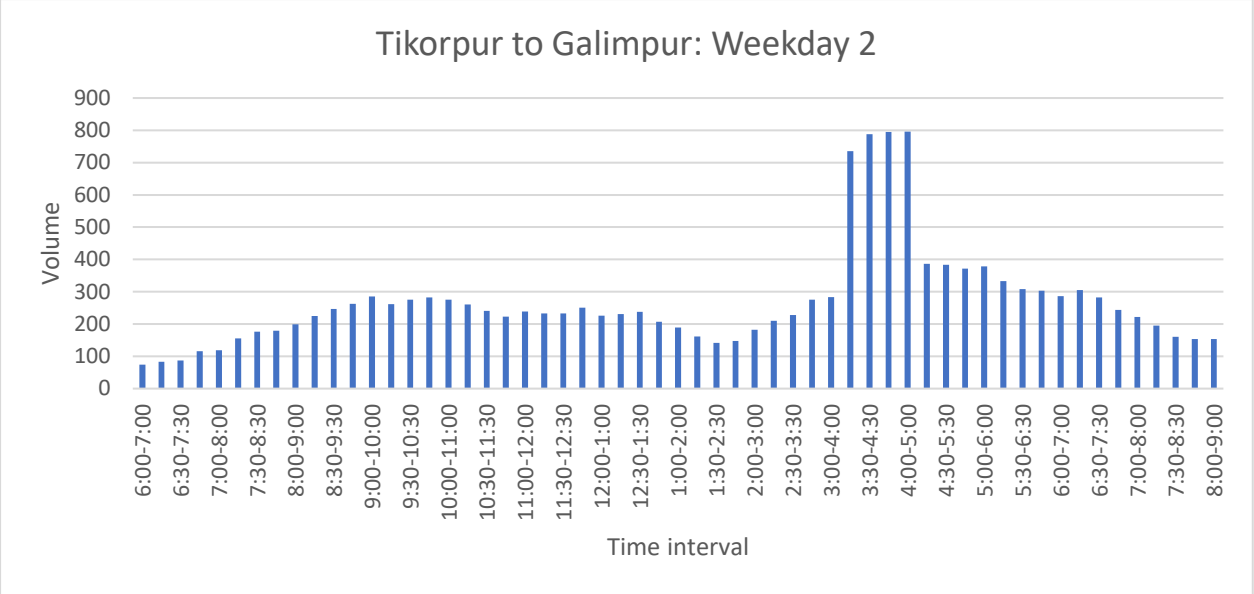
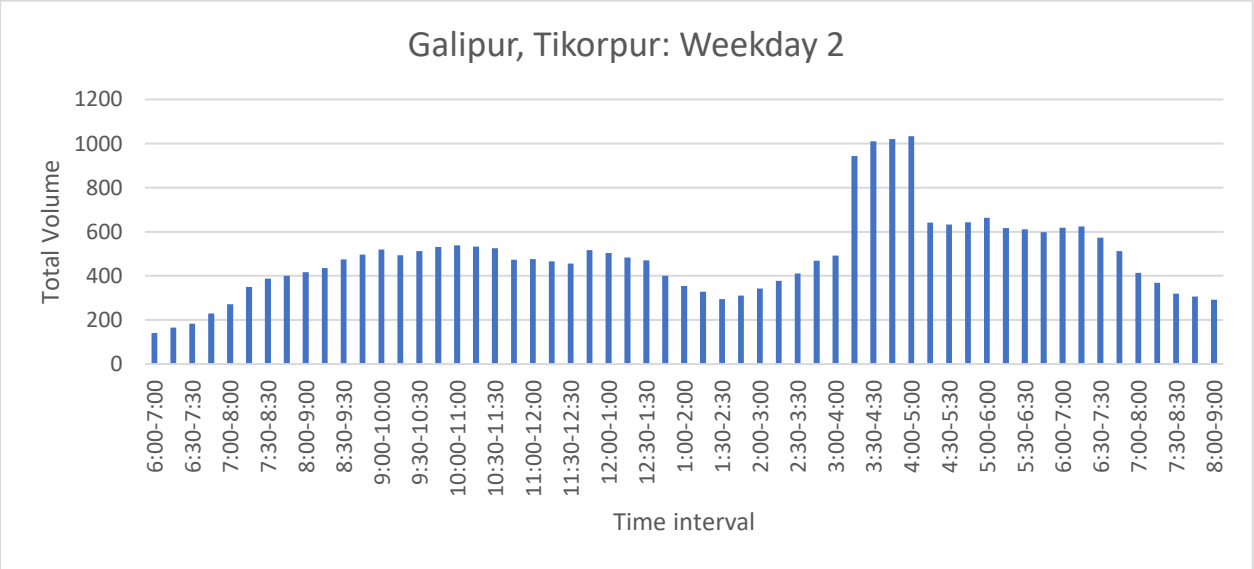
7:00-8:00
7:30-8:30
8:00-9:00
Time interval



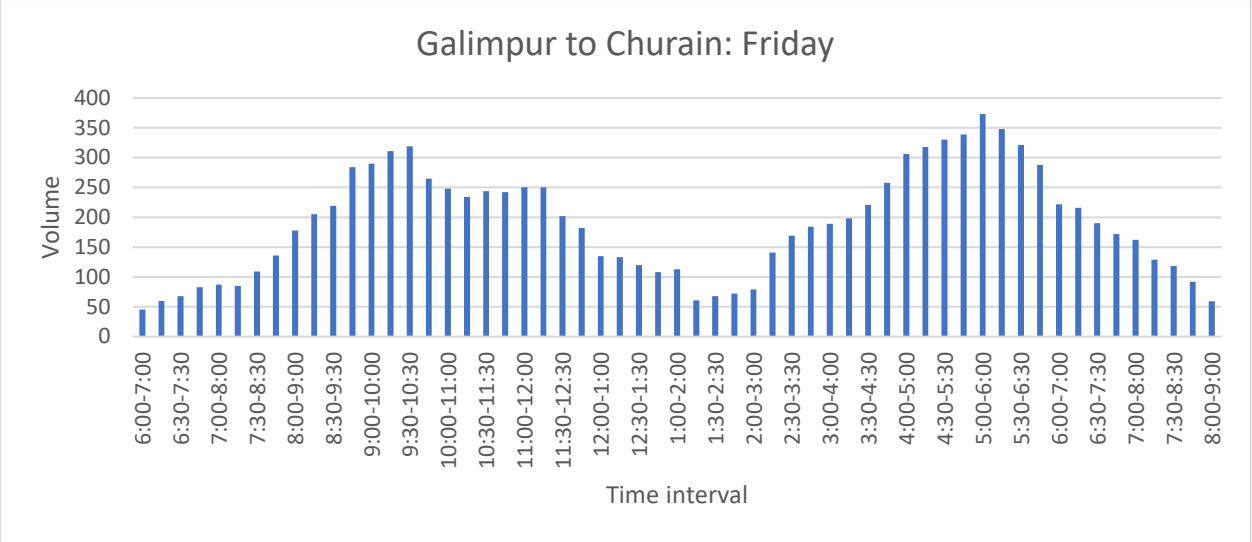
Point 14: Weekday 2







Point 15: Friday


Galimpur to Churain: Friday
Volume
400
350
300
250
200
150
100
50
0
6:00-7:00
6:30-7:30
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5:00-6:00
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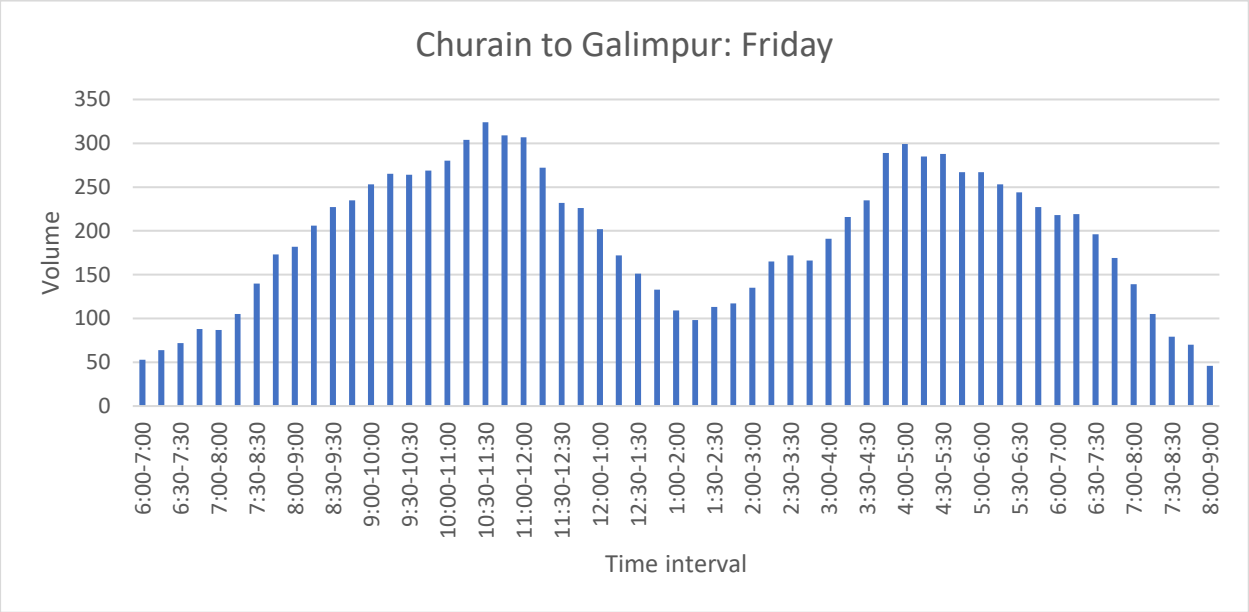
6:00-7:00
6:30-7:30
7:00-8:00
7:30-8:30
8:00-9:00
Time interval


Churain to Galimpur: Friday
Volume
350
300
250
200
150
100
50
0
6:00-7:00
6:30-7:30
7:00-8:00
7:30-8:30
8:00-9:00
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5:00-6:00
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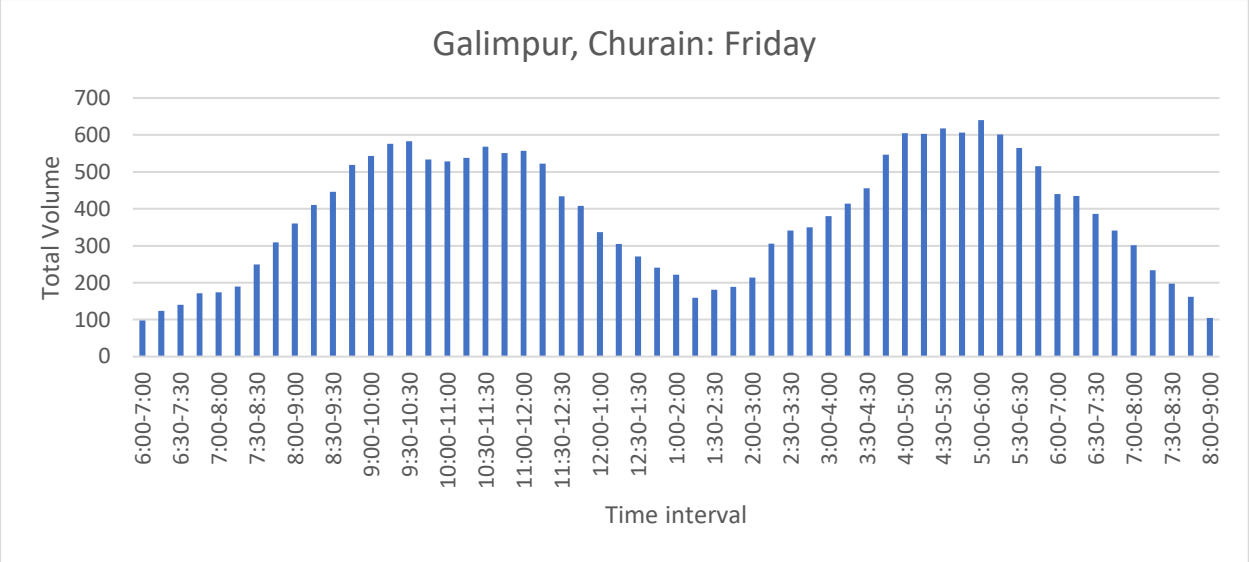
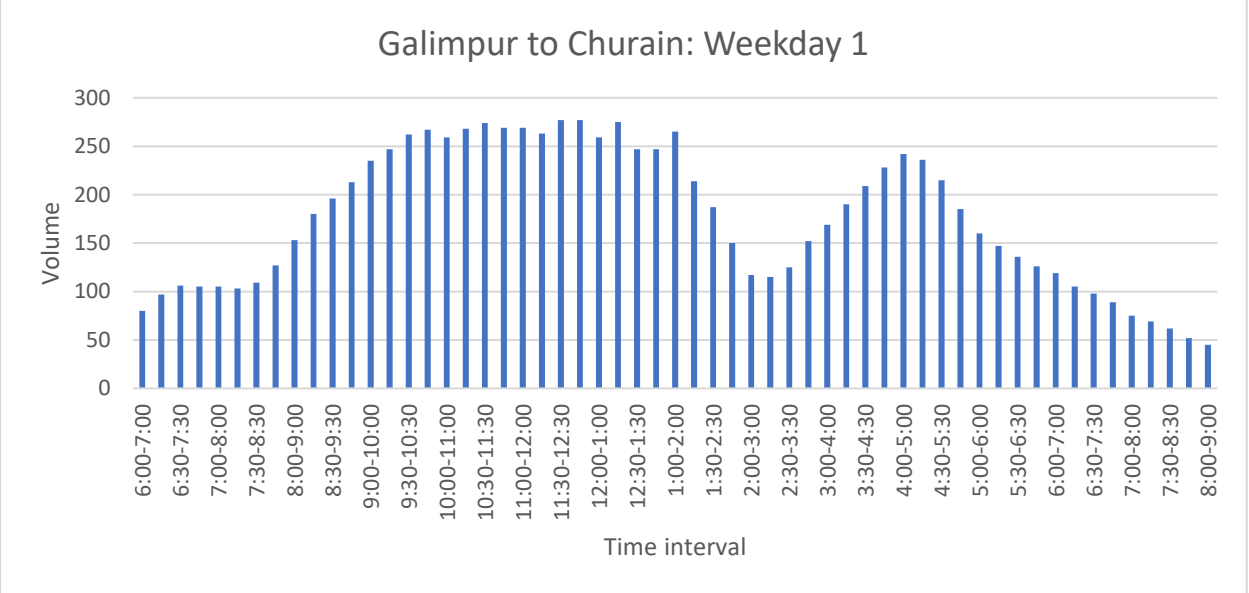
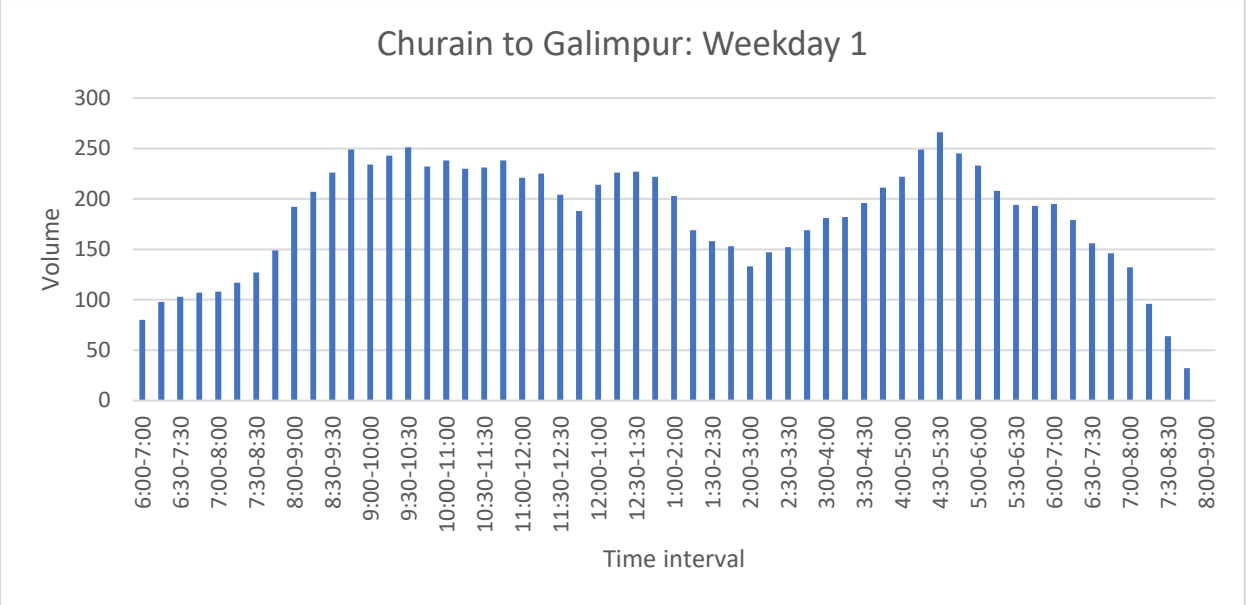
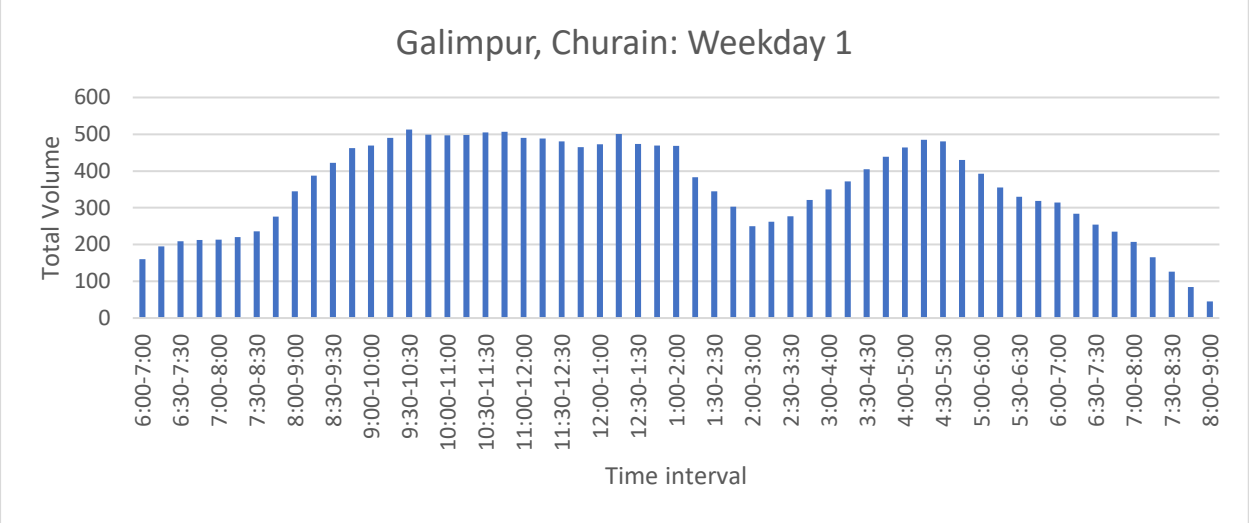
7:00-8:00
7:30-8:30
8:00-9:00
Time interval



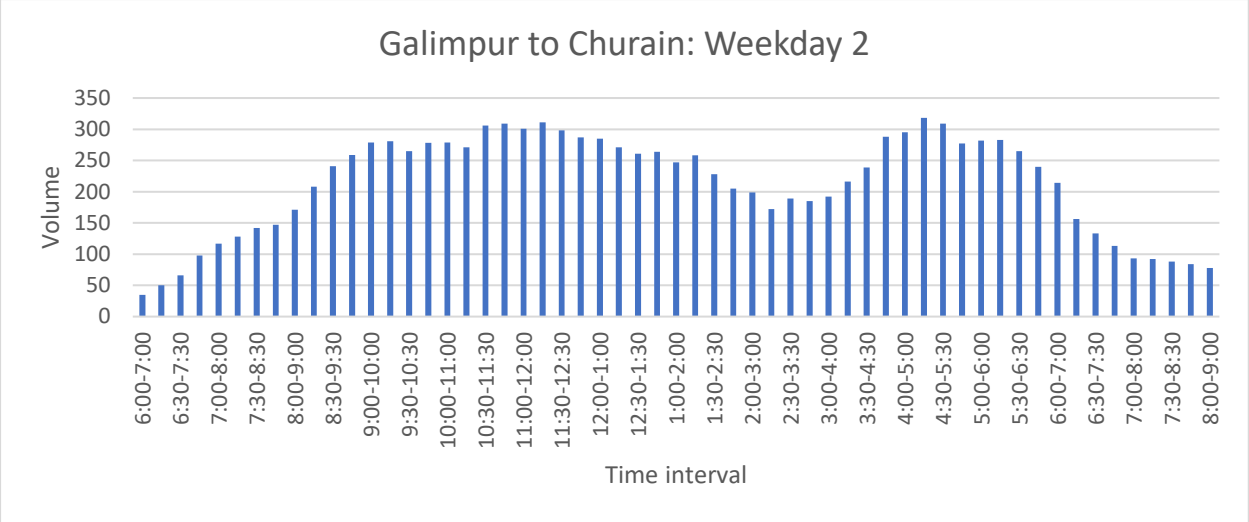
Point 15: Weekday 1







Point 15: Weekday 2


Galimpur to Churain: Weekday 2
Volume
350
300
250
200
150
100
50
0
6:00-7:00
6:30-7:30
7:00-8:00
7:30-8:30
8:00-9:00
8:30-9:30
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9:30-10:30
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1:00-2:00
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5:00-6:00
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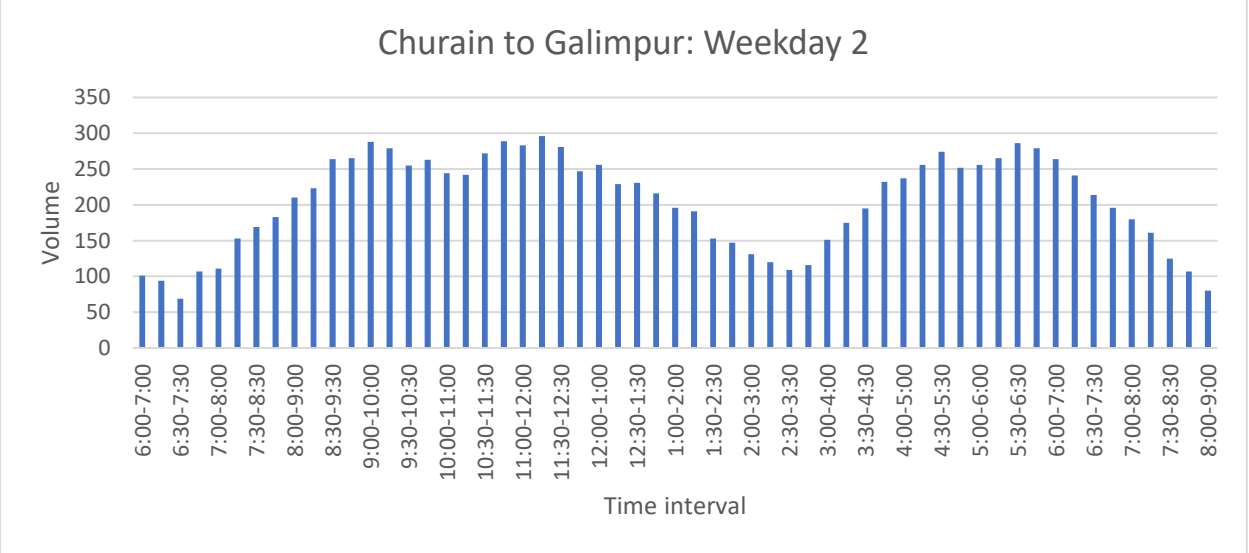
7:00-8:00
7:30-8:30
8:00-9:00
Time interval


Churain to Galimpur: Weekday 2
Volume
350
300
250
200
150
100
50
0
6:00-7:00
6:30-7:30
7:00-8:00
7:30-8:30
8:00-9:00
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5:00-6:00
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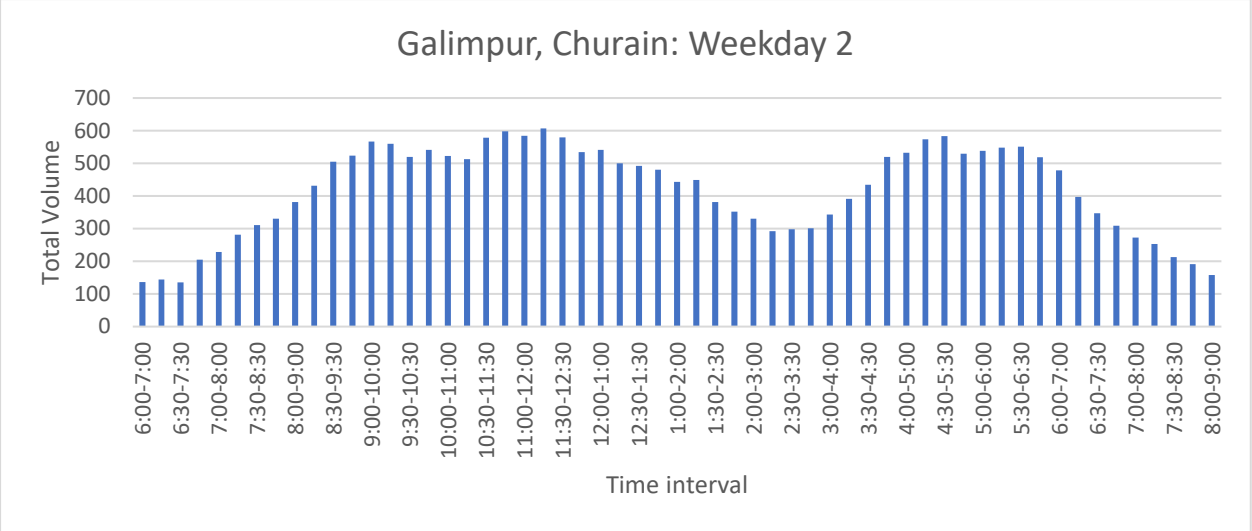
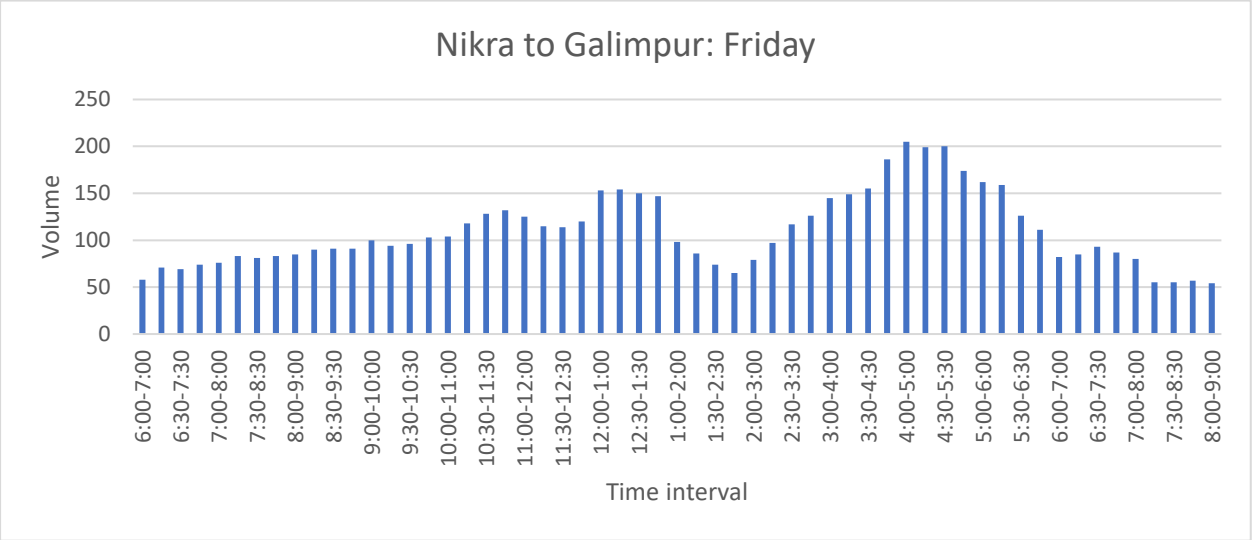
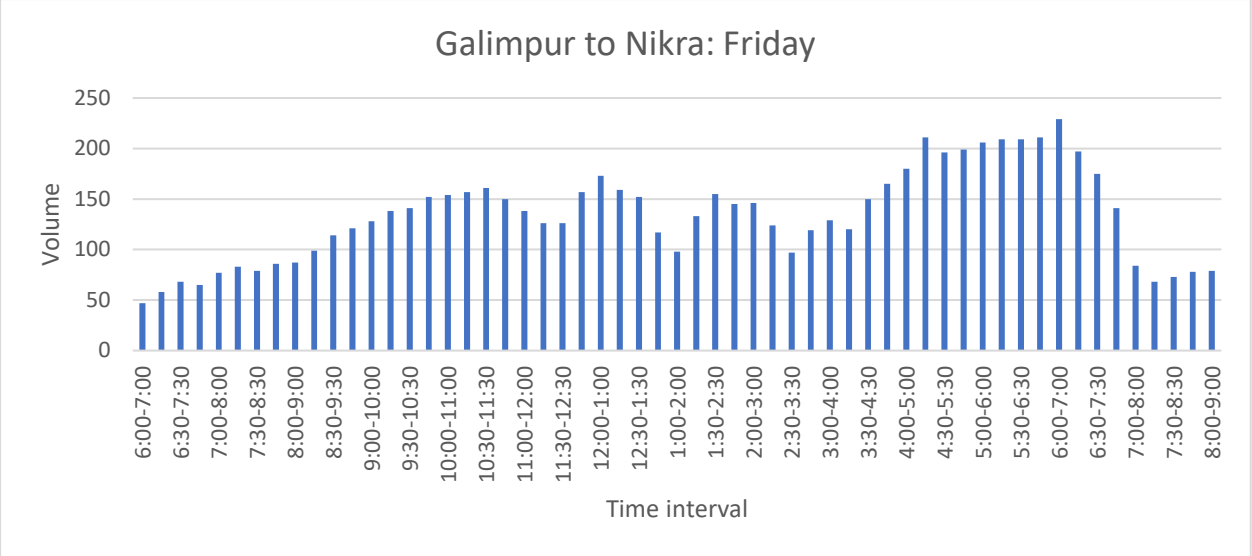
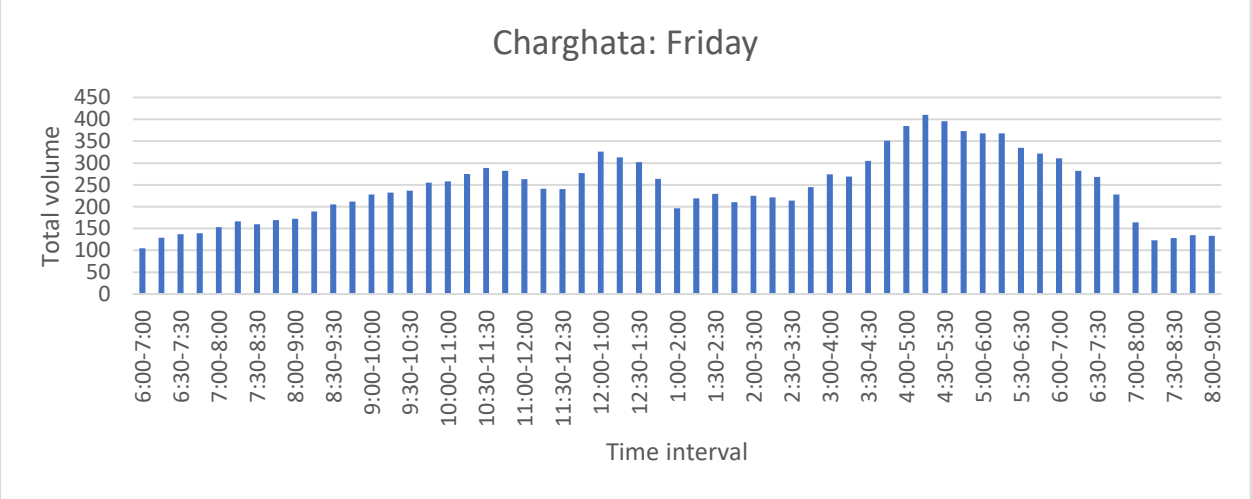
7:00-8:00
7:30-8:30
8:00-9:00
Time interval



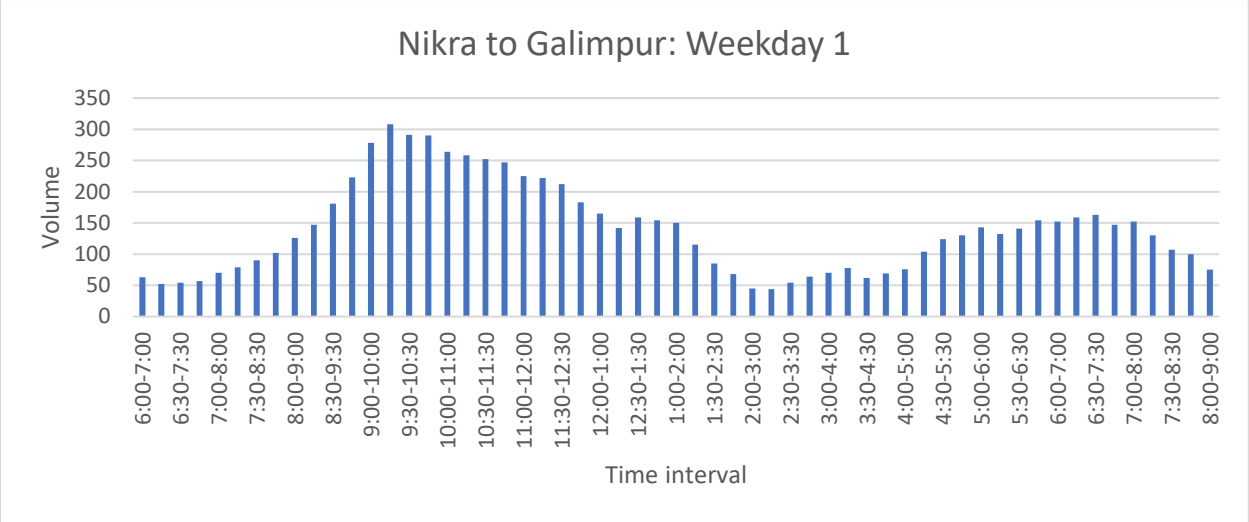
Point 16: Friday







Point 16: Weekday 1


Nikra to Galimpur: Weekday 1
Volume
350
300
250
200
150
100
50
0
6:00-7:00
6:30-7:30
7:00-8:00
7:30-8:30
8:00-9:00
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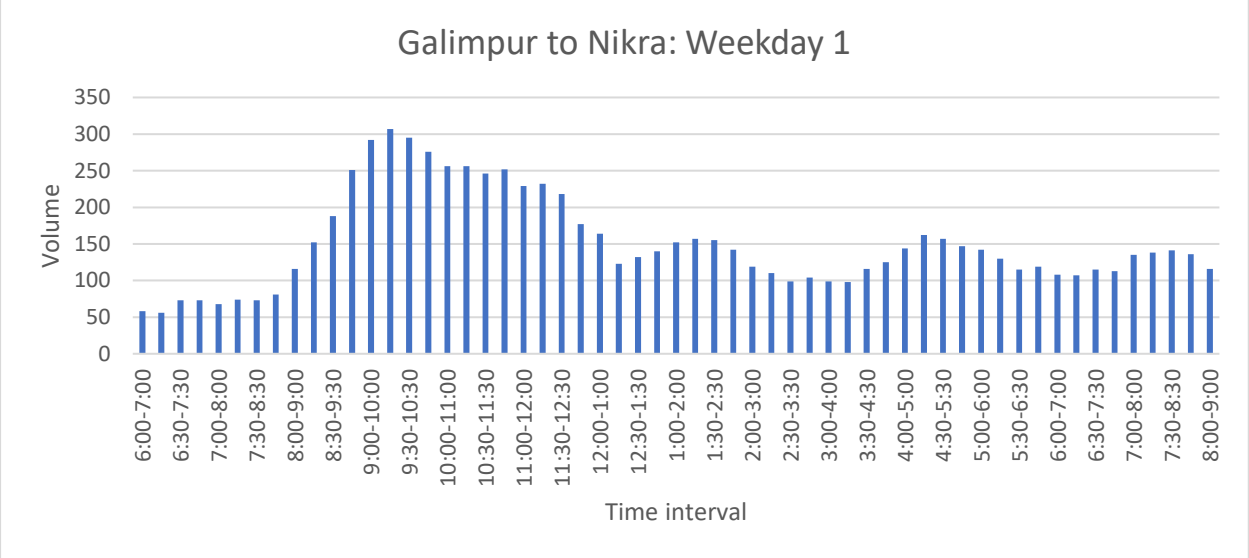
6:00-7:00
6:30-7:30
7:00-8:00
7:30-8:30
8:00-9:00
Time interval


Galimpur to Nikra: Weekday 1
Volume
350
300
250
200
150
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6:00-7:00
6:30-7:30
7:00-8:00
7:30-8:30
8:00-9:00
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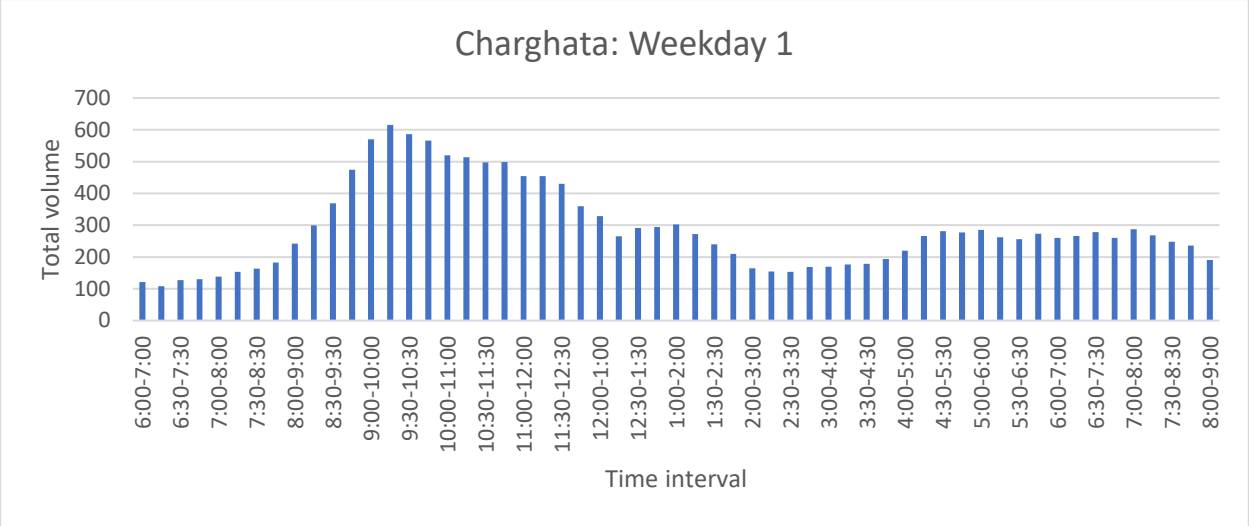
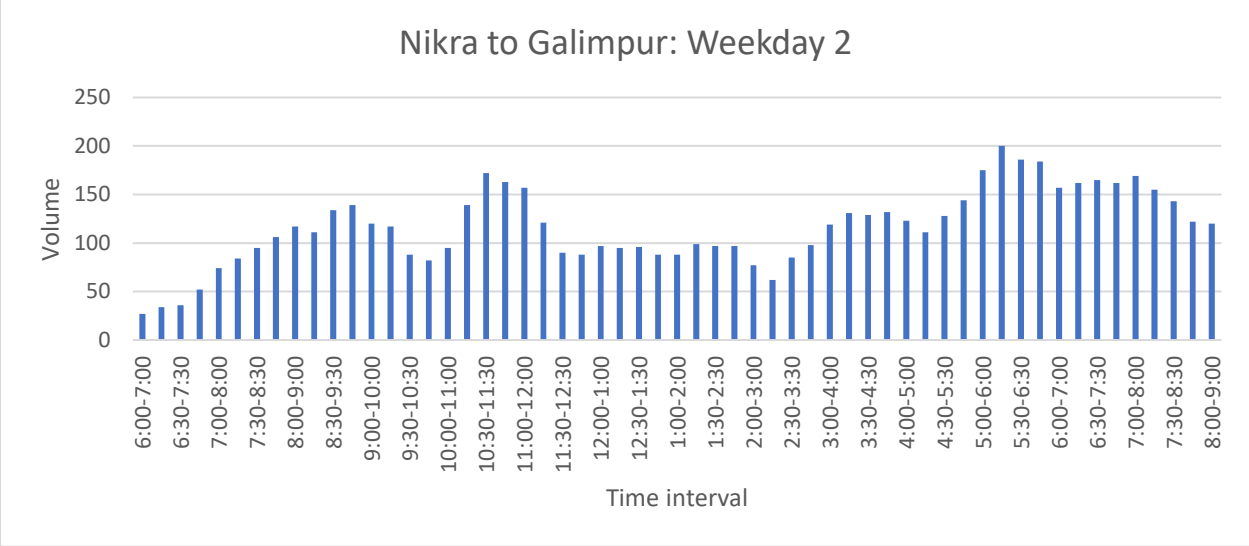
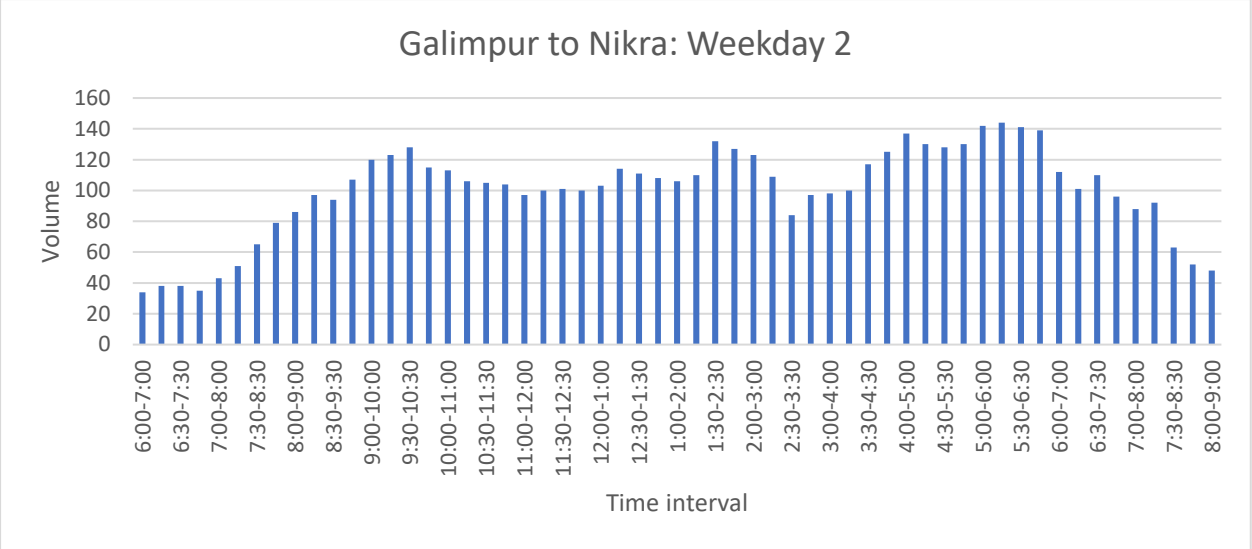
8:00-9:00
Time interval



Point 16: Weekday 2




Galimpur to Nikra: Weekday 2
Volume
160
140
120
100
80
60
40
20
0
6:00-7:00
6:30-7:30
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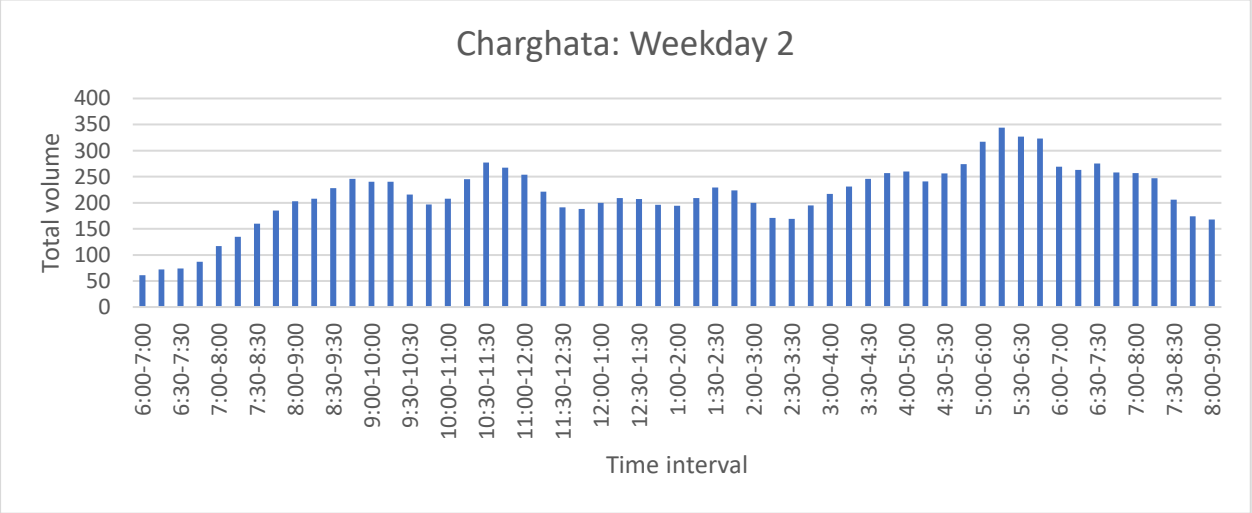
8:00-9:00
Time interval


Charghata: Weekday 2
Total volume
400
350
300
250
200
150
100
50
0
6:00-7:00
6:30-7:30
7:00-8:00
7:30-8:30
8:00-9:00
8:30-9:30
9:00-10:00
9:30-10:30
10:00-11:00
10:30-11:30
11:00-12:00
11:30-12:30
12:00-1:00
12:30-1:30
1:00-2:00
1:30-2:30
2:00-3:00
2:30-3:30
3:00-4:00
3:30-4:30
4:00-5:00
4:30-5:30
5:00-6:00
5:30-6:30
6:00-7:00
6:30-7:30
7:00-8:00
7:30-8:30
8:00-9:00
Time interval

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