

Mass Transportation System : A Case Study of Ahmedabad-Mehsana SH-41

Chaudhari Dron, Prof N. D Hajjani

(1)student M.Ecivil(transportation), (2)associate prof.L.D.college of engineering

Abstract - Transportation occupies a high place in modern life. Advancement in all spheres of life has been to a large extent influenced by transportation. Proper planning of transport mode become a more useful and advantageous for users. Traffic congestion occurs due to various modes of vehicle. Lack of Mass Transportation System, road user uses the personal vehicle or other alternatives for transportation. This study deals with the improvement of Mass Transportation planning between two regions. There are many road user uses a personal vehicle, which produced adversely affect total transportation cost and environment. Traffic congestion also increases day by day between these regions. Proper planning regarding to Mass Transportation System must be necessary. Public transport problems include: an overall lack of capacity, lack of quality and choice, severe traffic congestions and insufficient fund to renew and repair vehicles. Sustainable Mass Transportation System planning must be needed for real meaning of transportation. Origin and Destination survey carried out for data collection. After analysis of these data conclude the origin and destination of road user, which helpful to decide the proper frequencies of mass transport vehicle between specific time intervals. Also improve the facilities of mass transport vehicle.

Index Terms: mass transportation , planning , transit system,

1. INTRODUCTION

Transportation is the backbone to the development of areas. It enables functioning of urban as well as rural areas efficiently by providing access and mobility. Passenger transport has an overriding influence on the functioning of the city or region. With growth, the mobility needs increase. People's personal choices and freedom get expressed in increased ownership and use of personalized vehicles. The public agencies operating public transport systems often fail to restructure service types to meet with the changing demand pattern. As a result public transport becomes financially less viable, speeds reduce, and congestion levels increase and the transportation becomes a source of environmental problem.

According to a study (World Bank, 1996), 70% of the world's urban population breathes unsafe air. It is also estimated that more than one billion people live in cities with unhealthy levels of suspended particulate matter. Every year millions of people die or suffer serious health effects from air pollution. As per a WHO study (2000), an estimated 3 million people die each year because of air pollution; this figure represents about 5% of the total 55 million deaths that occur annually in the world. Vehicles are

major sources of urban air pollution and greenhouse gas emissions. The advantages of modified bitumen can include one or more of the following for road works.

Public transportation services are vital for civic life. Recently, many countries have turned their attention towards developing and improving their public transport systems. This study is a public needs assessment and opinion of people. The study is innovative from both an approach and implementation perspective and will help policy makers think about long-term strategies of transportation.

Public transport is a shared passenger transportation service which is available for use by the general public, as distinct from modes such as taxicab and car pooling which are not shared by strangers without private arrangement.

Mass (Bus) transportation between Ahmedabad to Mehsana is being continued with some

defects. Identify and study regarding these matter include in this topic.

- An overall lack of capacity.
- Lack of quality and choice.
- Severe traffic congestions and insufficient attraction to renew and repair vehicles.
- Curtailment of routes at the will of crew to avoid some areas.
- Overcrowding of buses.

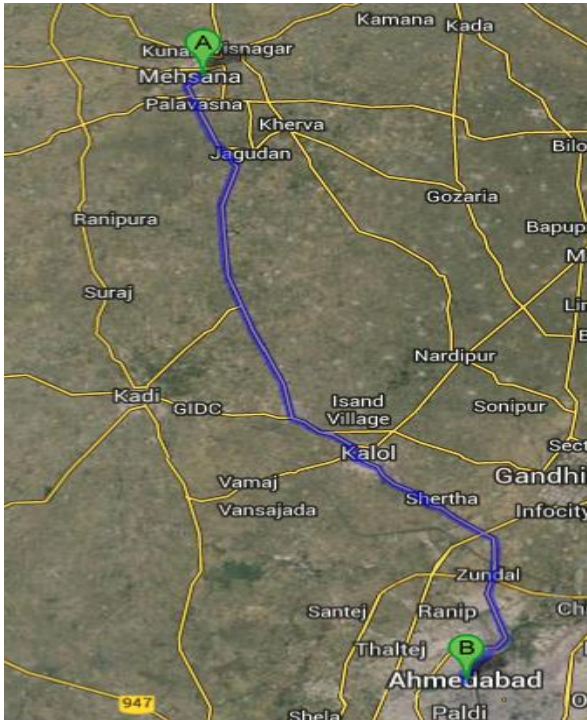
2. OBJECTIVE

- To find out requirement of mass transportation users.
- To identify the issues related to efficient working of Mass transportation system.
- To suggest the frequencies of bus.
- To find out defects in existing bus transportation system..

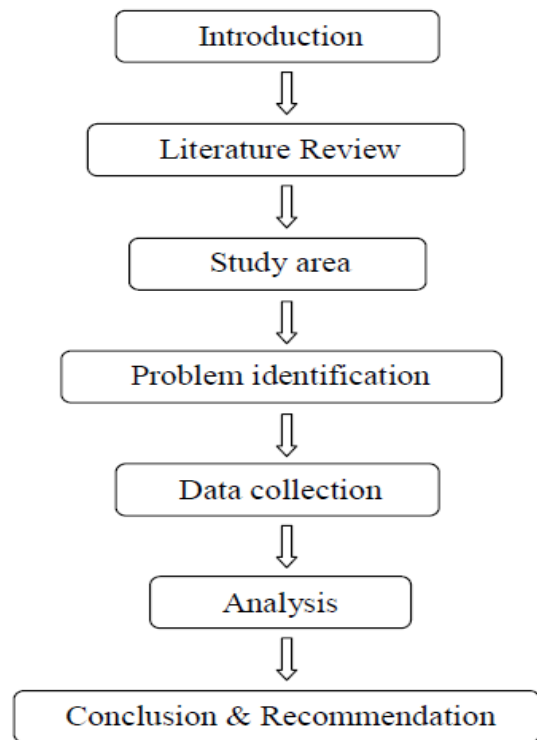
3. STUDY AREA

- Study area is of about 69 km in between Mehsana to Ahmedabad city.

- Including many cities like kalol, Nandasan, kadi,etc.
- Having many industries on highway like ifcco, appolo, ratnamani,etc.
- Main reason for using this transportation by people on large scale
- is for jobs, Schools, colleges, industries at Ahmedabad.
- Study Area containing SH41 highway.
- This was constructed in the starting of 2003.
- Road is having four lane highway and in very good condition for transportation.



4. METHODOLOGY



5. DATA COLLECTION

Origin and destination study determines the pattern of journey that people make. It is the basic study which provides the information for planning of a transportation facility or system particularly the location, design and programming of a new or improved highway public transport and parking facility. Data for Trip Generation, Trip Distribution, Model Split and Route Assignment Analysis, becomes the part of this study. It is often called travel survey – a fundamental to all transportation studies and consists basically of determining:

- Where travelers are coming from (origins of trip)
- Where trip markers are going to (destination of trip)
- Why people are making trip (purpose of trip)
- By which mode do different types of people travel (mode of travel)
- At what time of the day do they travel (time of trip)
- What is the normal length of trip.
- Other socio-economic data of the trip maker.

O-D study may range from a relatively simple survey to collect data for locating a bypass in the town comprehensive transportation study for planning and design of the transportation system of a large metropolitan city.

Roadside Interview Method

Drivers are stopped and interviewed at roadside and data is recorded on prepared forms. The usual information required is:

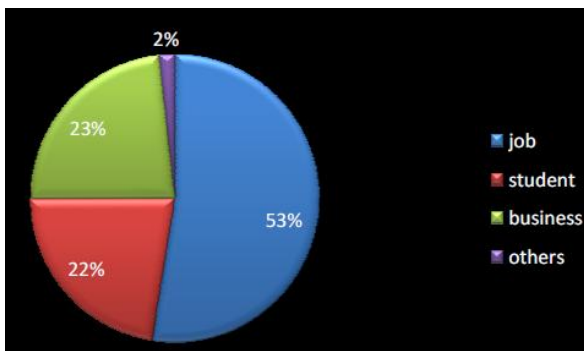
- (a) Type of vehicle

- (b) Number of persons in vehicle
- (c) Origin and destination of trip
- (d) Purpose of trip
- (e) Parking location
- (f) Intermediate stops
- (g) Routes travelled

Result And Discution

Number of different users using mass transportation system is

Occupation	Percentage
Job	53%
Student	22%
Business	23%
Others	2%



Pie chart Showing types of users in percentage.

Time	Mehsana to Ahmedabad	Mehsana to kalol	Kalol to Mehsana	Kalol to Ahmedabad	Ahmedabad to Mehsana	Ahmedabad to Kalol
8.00 to 10.00	135	54	40	121	108	51
10 to 12.30	197	99	49	121	94	45
4 to 5.30	75	54	67	68	129	61
5.30 to 7.00	60	46	75	61	225	90

TABLE SHOWS: No. of trips during different time intervals at various locations

- Gloves.

Conclusion and Recommendation

Because of the growth of urbanization and industrialization Ahmedabad to Mehsana is one of the busiest routes among North Gujarat, India. Much more daily trips occurred between these routes. Many types of vehicles pass through this route. For daily users like students and professionals requirement of mass transportation is necessary. Gujarat State Road Transport Corporation (GSRTC) operates bus as a mass transportation system. Some defects are existing in service of GSRTC. Because of these, many daily road users use a personal vehicle for transportation.

Results showing that, at morning pick hours, flow of bus users is in the direction of Ahmedabad (from Mehsana and Kalol). Same way at evening pick hour, flow of bus users is in the direction of Mehsana. It concludes that, frequency of bus users are more from Mehsana to Ahmedabad at the morning pick hours. And during evening pick hours, frequency of bus users are more from Ahmedabad to Mehsana. That's why these both times required more number of buses for bus users. There are 53% of bus users are professionals, whose use the bus regularly for transportation from Ahmedabad to Mehsana and Mehsana to Ahmedabad. There are frequencies of buses must be continued in the intervals of 10 minutes in morning as well as evening pick hours. During the interview method of O-D survey, opinion of bus users is noted down as a part of study. Many passengers have number of complaints regarding irregularities of buses, condition of buses, parking problems at bus stop, condition of bus stop and bus station, ticket rates etc. Need of modification required in all these areas which are closely related to bus as a mass transportation system between this busy route.

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