ASSESSMENT OF GOVERNING FACTOR FOR TRAFFIC CONGESTION IN MIX LANDUSE PATTERN BY SAMPLING METHOD-A CASE STUDY OF SURAT CITY

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Abstract - *Transportation and land use are two sides of same coin. Land use and transportation are inextricably linked. Land use involves building and roads, which affect traffic flow and transportation demand through distribution trip. Thus the relation between land use and transportation is very complex.*
The effort of this research is to develop a linear programming methodology for estimating O-D trip tables based on observed link volumes.

*Key Words***: Governing factor**, **Land use, Sampling method, O-D survey, Traffic congestion**

1. INTRODUCTION

In a transportation study, it is often necessary to know the exact origin and destination of the trips. It is not only necessary to know how many trips are made, but also group these trips with reference of the zones of their origin and destination. Transportation in urban areas is highly complex because of the modes involved, the multitude of origins and destinations, the amount and variety of traffic. Traditionally, the focus of urban transportation has been on passengers as cities were viewed as locations of utmost human interactions with intricate traffic patterns linked to commuting, commercial transactions and leisure/cultural activities. Land use refers to the pattern of land usage in an area; including the location, type and design of infrastructure such as roads and building which affects the transportation demand and traffic flow through unauthorized vehicle parking on the road and many more activities which direct and indirectly affect the vehicle flow.

2. LITERETURE REVIEW

2.1 CONGESTION

There is no single, broadly accepted definition of traffic congestion. One of the principal reasons for this lack of consensus is that congestion is both:

> **Effects Of Increased Traffic Congestion:**

Regardless of whether it is defined physically or relatively, the effects of increased Congestion are typically characterised by:

- Slower speeds
- Longer journey times
- Increased queuing at junctions or bottlenecks
- Increased stopping and starting
- More time spent stationary
- Less predictable journey times

It was realized quite early that traffic is a function of land use and various activities on land, generates different amounts of trips. The number of trips generated forms the basis of the entire transportation planning process. The important stages in transportation planning process are as follows:

- Survey and analysis of existing conditions.
- Forecast analysis of future conditions.
- Evaluation.
- Programmed adoption and implementation.
- Continuing study.

Surveys are prerequisite to the planning process. They are Carried- to collect data on various factors that influence the travel behavior. These include inventory of existing travel pattern, that If existing transportation facilities and land use-economic activities.

3. ORIGIN AND DESTINATION SURVEY:

The origin and destination study is carried out mainly to know the origin and destination of various vehicles. In this study, the data collected are, number of vehicles, their origin and destination, number of passengers in each vehicle, route etc.

3.1 SURVEY ROUTE

We have select three road network for the project work as these route having traffic congestion problem during peak hours.

Fig-1: Survey route

The route selected are listed below:

1) Anand Mahal road

2) City Light road

3.2 DATA OF SURVEY ROUTE

Table-1: Details Of Survey Route

Serial No.	Route	Road Width	Distance (km)	Number of survey form
1.	Anand mahal Road	24 m	2.0 km	150
2.	Citylight Road	24 m	2.1 km	150

3.3 DATA ANALYSIS

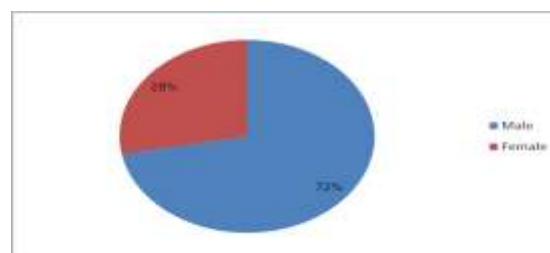**1. Anand Mahal Road**

1. Gender

Chart- 1: Gender for Ananad mahal road

This pie chart shows that the 72% male and 28% uses this route for travel.
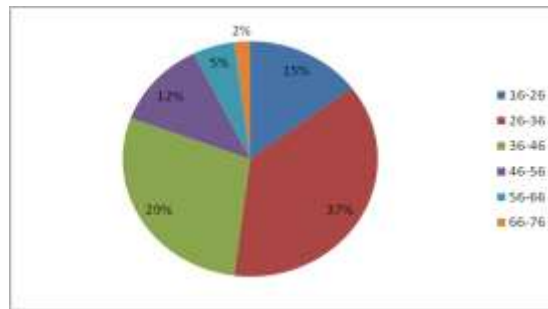
2. Age:

Chart- 2: Age for Anand mahal road

The origin and destination survey conducted the 26-36 age people use this road very much. They use 37% of the total age of the people.
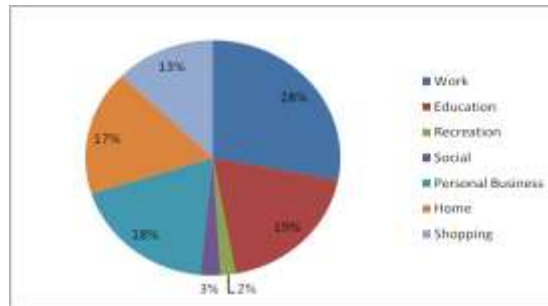
3. Purpose of the trip

Chart- 3: Purpose of the trip for anand mahal road

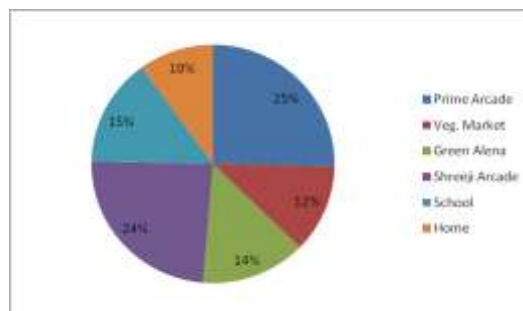This pie chart shows that the most user of the road have their home, personal businesses from our survey.

4. Destination of the trip:

Chart- 4.: Destination of the trip for anand mahal road

This pie chart shows that the most user of the road are going to Prime arcade Shreeji arcade respectively.
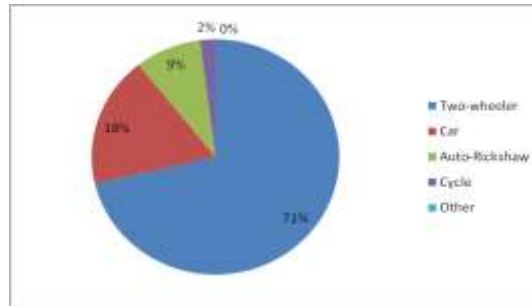
5. Mode of the trip:

Chart-5: Mode of the trip for anand mahal road

The pie chart shows that the people are using two-wheeler more than any any other mode from our survey.
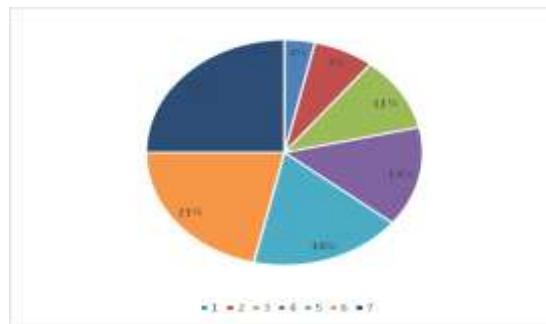
6. No. of days of trip

Chart-6: No. of days of trip for Anand mahal road

The pie chart shows that the people are using this road for 5-6 days per week From our survey.
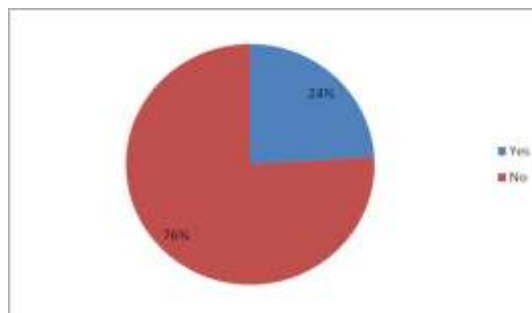
7. Requirement of alternative Road:

Chart- 7: Requirement for alternative road for Anand mahal Road

This pie chart shows that the people don't want alternative road at anand mahal road from our survey.
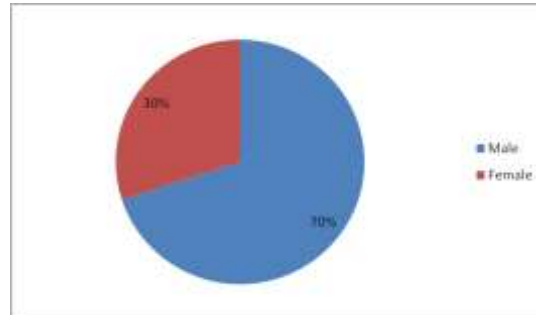
2. Citylight road

1. Gender

Chart- 8: Gender for Citylight road

This pie chart shows that the 70% male and 30% uses this route for travel.
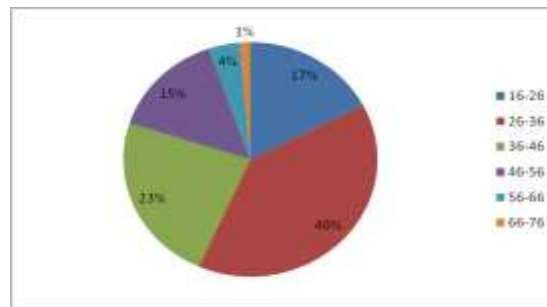
2. Age

Chart- 9: Age for Citylight road

The origin and destination survey conducted the 26-36 age people use this road very much. They use 40% of the total age of the people.
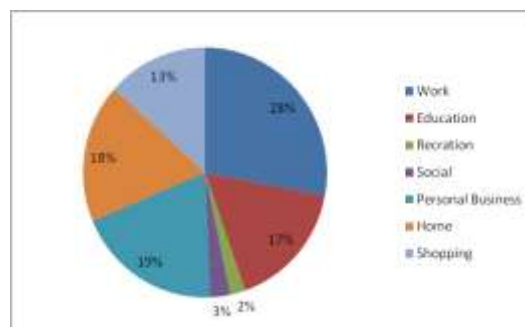
3. Purpose of the trip

Chart-10: Purpose of the trip for citylight road

This pie chart shows that the most user of the road have their home, personal businesses from our survey.
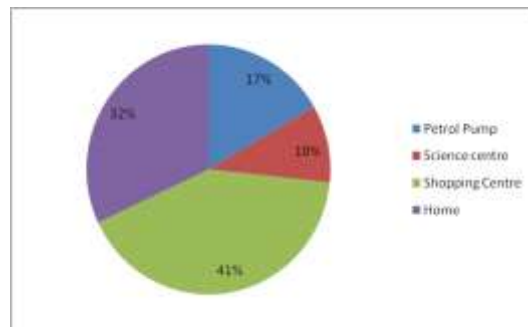
4. Destination of the trip:

Chart-11: Destination of the trip for citylight road

This pie chart shows that the most user of the road are going to shopping from our survey.
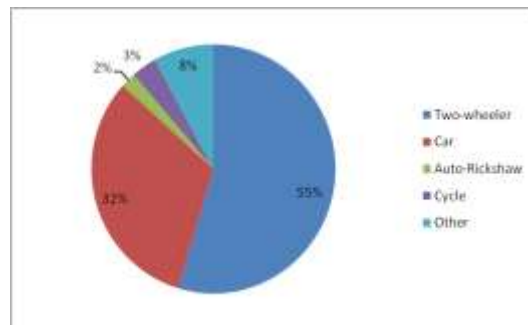
5. Mode of the trip:

Chart-12: Mode of the trip for Citylight road

The pie chart shows that the people are using two-wheeler more than any any other mode From our survey.
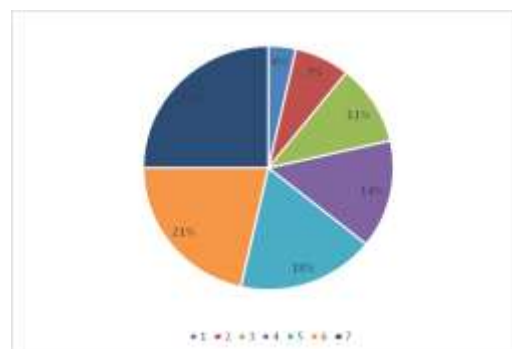
6. No. of days of trip

Chart-13: No. of days of trip for Citylight road

The pie chart shows that the people are using this road for 6-7 days. It means this road is very busy road.
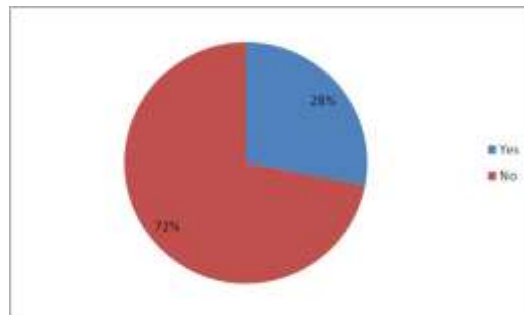
7. Requirement of alternative Road:

Chart-14: Requirement for alternative road for Citylight road

This pie chart shows that the people don't want alternative road at citylight road From our survey.

4. CONCLUSION

After doing assessment on both road, it shows that both road has governing factor of work by young age group coming by two wheeler. In addition both road highly require alternative route instead of this route.

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