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## “OPTIMIZATION OF PUBLIC TRANSPORT SERVICES FOR AMRAVATI CITY”

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**Abstract:** - In most of the developing cities like India public transportation system is the primary mode of transportation. However, in most of Indian cities quality of service of transport system is rapidly deteriorating because of the increasing travel demand and poor supporting public transport facilities. There are various problems associated with public transport system such as overcrowding, traffic congestion, higher level of pollution, frequent stopping & starting, frequency of service & schedule is not strictly adhered. Therefore, there is an urgent need to evaluate the performance of public transport routes to improve quality of service. This study also develops a hierarchical structure to identify performance indicators for evaluation of quality of service of public transport routes. This can help to find solutions to the current problems such as increasing traffic congestion, and adjusting travel time values to reflect comfort and convenience and can increase the efficiencies as well as support for alternative modes of public transport, making them more acceptable by the people & achieving their equity objectives.

**Keywords:** Public transport system, quality of service, traffic, travel time, comfort

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## INTRODUCTION

All the million plus cities in India facing a serious urban transport problems, due to the increases in population in urban areas as a result of both - the natural increase and migration from rural areas and smaller towns. The rapid population growth urbanization, coupled with increasing activities and opportunities in cities result in rapidly growing travel demand, both for private as well as public transport. A flexible, safe, comfortable, economic, easily available and reliable bus service may encourage shift from private vehicles to public transport.

This study is concerned of assessment of public transport demand for Amravati and identifies the major factors for performance evaluation of public transport routes based on the identified performance indicators. In this study, a methodology is proposes develops a hierarchical structure to identify performance indicators for evaluation of quality of service of public transport routes. The rout is taken as 1) Amravati University to Badnera Railway Station 2) V.M.V To Moti nagar 3) Badnera Railway Station To Amravati Bus Stand. The data collected from user perspectives of public transport service like comfort level, safety level, travel cost, travel time, accessibility, user facility etc. these data were analysed by formulating a graphical form which give the information about public demand related to travel cost, travel time, comfort , safety , accessibility , user facility.

### **Data Collection for Identified Public Transit Routes in Amravati City**

The data is collected for all five routes selected for analysis. Five routes have been selected for service connecting different important areas of city. The data has been collected by survey conducted during peak hours. The Data should be collected by note down the waiting time, boarding and alighting time, and also note down the number of passengers boarding and alighting at each bus stop also the no of curve and speedbreaker. The data related to safety level, comfort level, service level and Facility is collected by giving profarma to the people using the Public services and the information about number of trips per day, travel cost is collected by conductors.

### **Route 1: Amravati University to Badnera Railway Station**

The route starts from Amravati University to Badnera Railway Station connecting important locations. Table shows list of bus stops on routes. The route has total number of stoppage from Amravati University to Badnera Railway Station



**Details of Collected Data**

Sr. No.	Description of Particulars	Details
1	Number of Bus Stop	15
2	Number of Stoppages	17
3	Number of Intersections with signal	4
4	Number of Curves	13
5	Number of Speed Breakers	15
6	Total Travel Time	60-65min
7	Average journey speed	40-45
8	Total Route Length (origin to destination)	15.3Km
9	Travel Cost	18

### Rout 2: V.M.V To Moti nagar

The route starts from V.M.V To Moti nagar

Connecting important locations. Table shows list of bus stops on routes. The route has total six number of stoppage from V.M.V To Moti nagar

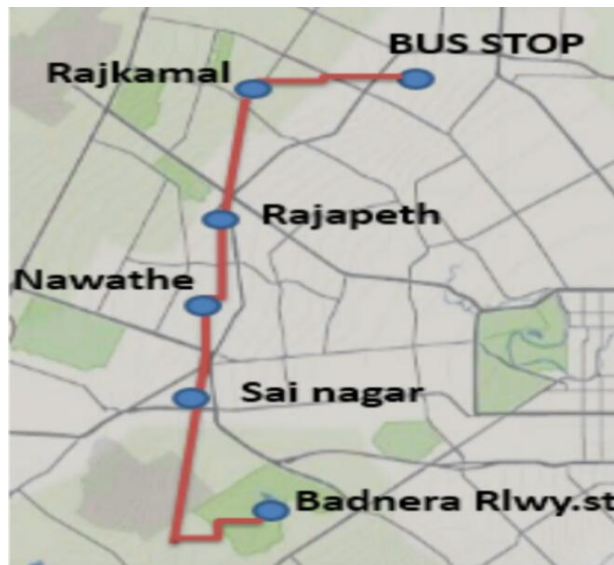


### Details of Collected Data

Sr. No.	Description of Particulars	Details
1	Number of Bus Stop	5
2	Number of Stoppages	8
3	Number of Intersections with signal	1
4	Number of Curves	5
5	Number of Speed Breakers	8
6	Total Travel Time	25-26 min
7	Average journey speed	40 – 45 km/h
8	Total Route Length (origin to destination)	8Km
9	Travel Cost	12 Rs

### Rout 3: Badnera Railway Station to Amravati Depo

The route starts from Badnera Railway Station to Amravati Depo connecting important locations. Table shows list of bus stops on routes. Theroute has total fourteen number of stoppage from Badnera Railway Station to Amravati Depo



#### Details of Collected Data

Sr. No.	Description of Particulars	Details
1	Number of Bus Stop	9
2	Number of Stoppages	14
3	Number of Intersections with signal	2
4	Number of Curves	6
5	Number of Speed Breakers	8
6	Total Travel Time	30 min
7	Average journey speed	40 – 45 km/h
8	Total Route Length (origin to destination)	10Km
9	Travel Cost	13 Rs

**RESULT BASED ON QUESTIONARY SURVEY**

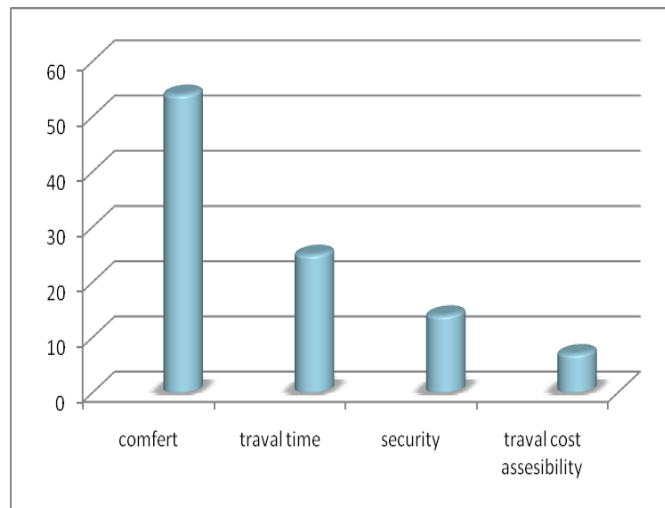


Fig. Row indicate parameters and column indicate no. of people

**Determination of Relative Weight age of Performance Indicator depending upon age criteria**

Age	Comfort	Travel time	Security	Travel Cost	Total
18-35	15	60	10	15	100
35& above	55	15	20	10	100

**CONCLUSION**

The basic objective of this study is to evaluate the quality of service of city bus routes in India. This study also presents hierarchical structure for identification of performance indicator of public transport routes of Amravati city.

A comprehensive hierarchical structure has been developed according to the conditions of the Indian public transport system. The hierarchical structure consists of five main criteria and thirteen sub-criteria. In second stage of the study five indicators for performance evaluation of quality of service of city bus routes are identified i.e. travel time, comfort, safety and security, accessibility, user cost. In third stage the relative weights of the performance indicators are determined using passengers opinion survey and the rating given by them. In last stage quality

of service is evaluated by developing quality service indices for the travel time, travel cost, safety and security, comfort, accessibility of public transport routes.

It is expected that this study will be useful for improving the performance of quality of service of public transport routes in India and also be helpful to improve environment in Indian cities by shifting mobility from private mode of transport towards more efficient environmental friendly and safe public transport system.

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