



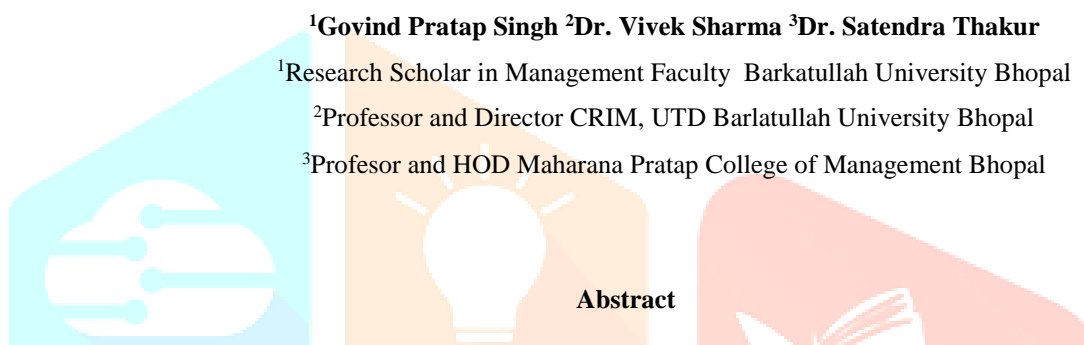
## A Critical Evaluation of Road Transport Management System in India with Special Reference to Madhya Pradesh

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### Abstract

Transportation is very important for all economic activities. Transport system is one of the tools of economic development. Transportation system provides mobility of people, freight which is just like the blood of the economy. Effective transportation systems reduce cost in many economic activities. The transport system should be safe, effective, and economical for travel of passengers and transportation of goods. It can be achieved only by effective management of the transport system as a whole. Modern transportation system is a management of road and another transport system. The freight and passenger movement are shared by all transport modes however road transport are the dominant modes in India. In the transport management system, the service quality and passenger satisfaction are very important concepts that transport companies must understand. Passenger satisfaction does have a positive effect on organization profitability. The aim of this study is to critically evaluate the service quality in the field of road transport management in India with special reference to Madhya Pradesh.

Present Study Dealt with evaluation of Road Transport management system in India with special reference to Madhya Pradesh. In order to examine user's satisfaction towards Madhya Pradesh Road Transport management system certain dimensions selected and discussed such as Comfort, Time and Safety This study is based on primary as well as secondary data. Primary data has been collected through questionnaire method. In this process 21 set of questionnaire distributed among those peoples who have used road transport for moving from one place to another. The MS excel and Statistical Package for Social Sector (SPSS) version 22.0 have been used to analysis primary data as well as testing of hypothesis of the study.

### Keywords

Road transport system, comfort, time, safety, satisfaction level

## INTRODUCTION

Transport system is a multidisciplinary field where engineering, management, economics, sociology, law and many other disciplines come together and there must be a smooth flow of goods and passengers in the system. Effective, efficient transport management systems are the backbone of modern global village. Transport system is closely linked with urban development. Transport management system is the transfusion of transport system with management for reduced carbon print. Here managerial approach is for management of a system which must be eco-friendly and suitable for sustainable development. Transport Management System is for a visionary concept for a low carbon future because reduction of greenhouse gas emission is must for sustainable development. Transport management system should be conceptualized for each and every one, for every segment, for every sector like tourism, business, goods flow, supply chain management, process industry, and industrial usage. In order to study management of MP transport system we have selected major transport service such as Road. In the present study various dimensions of Road transport management systems are explored. Comfort, time and safety are variables identified with the help of reviews and various users of Road Transport.

### Transport Management System

A system theory of management treats an organization as a system. System can be either an open or closed system. An organization is a system in which different distinct parts such as assets, employees, resources, information, interact with each other and form a complex system. In an open management system management of an organization interacts with the environment by way of inputs, through ports and output. Different sets of distinct parts interact with each other in different processes to form a system. Universe is an example of a system in which different planets interact with each other. A Closed system has a visible boundary. Environment does not affect the functioning of a closed system. Open system is affected by the environment. Road transport system is a system in which different distinct parts such as truck, bus, Lorry, car, jeep, two wheelers, driver, passenger, road user interact with each other and form a very complex system for transportation.

## REVIEW OF LITERATURE

**S.A.Mulay et al** Intelligent City Traffic Management and Public Transportation System” This paper focuses on designing and developing data centers which are working without any human intervention. This data center is automatic and autonomous. This automatically eliminates human errors and decreases the risk of application malfunction. As CCTV cameras are being used to detect traffic congestion, there are no blind spots. It is extremely useful to users as he is getting all the information on his daily-used device that is mobile phone. All traffic updates will be obtained based upon the real-time analyzed data hence users can take a decision whether to travel by that route or to opt for some alternative route. Real time bus information will help users in reaching bus stop on-time. And his unnecessary wait at bus stop is avoided. This will improve the efficiency of Bus Transport. Ultimately the pollution and fuel consumption will be controlled. Signal synchronization will indirectly help the user as only short time wait at signals and will help in resolving high traffic density, especially at rush timings. In this way data center will help in controlling congestion, facilitating user with traffic status and bus information

**Sain et al** have written research paper which deals with the specific question of demographic developments in India, which are in many parts reciprocal developments for example compared to Germany. In India the trend of bigger urban areas(urbanization) is a large challenge for transport systems. A contribution of a general development in India, particularly pollution and economic development, are the objectives of the above paper. Furthermore this paper illustrates future urban transport systems under the specific logistics point of view. In this research paper it was concluded that ”Within this paper, the main issue is to address a simple inter linkage between change in demographic structures due to an increase in economic growth and its potential effects on urban transportation system in India and also to recommend some suggestions for improvement. To achieve this existing concepts and

knowledge from German experiences and research results as e.g. within the national excellence cluster 'LogistikRuhr' and the research hub 'Urban Transport Systems' of the University of Duisburg-Essen is used to transfer knowledge and ideas towards the Indian situation. Furthermore, the paper also addressed the concepts of mega cities and logistics concepts for improving urban transportation system of big cities, specifically focusing on India

**P. S. Ramanuj et al** conducted a study to understand the travel pattern in the study area of Gujarat state and in Ahmedabad city. They published that report with the title "Disaggregated Modeling of Mode Choice by Ann - A Case Study of Ahmedabad 3 City in Gujarat State". Traveling is an integral part of today's lifestyle for people across the world. The increased traveling has led to a number of serious problems like congestion, noise pollution, air pollution, greenhouse effect etc. In transportation planning, the choice of a transportation mode is one of the most important parameters and it is difficult to predict the same as it depends on human behaviour which is very complex in nature. By far, most of the Discrete Mode Choice models are based on the principle of "random utility maximization" derived from the Econometric theory. The Artificial Intelligence technique is used for modeling of the Mode choice behaviour. Further, an attempt has been made to predict the mode choice by using neural network technique. The above study is aimed at introducing a new modeling technique Artificial Neural Network abbreviated as ANN. For efficient use of ANN technique it is required to decide types of activation functions, the number of neuron/s in different layers and the amount of data used for the training. The data used for the above study were collected from the household travel survey conducted in the Ahmedabad city of Gujarat state for the Public Transportation System. In the study an attempt has been made to find out the sensitivity of the various parameters in the model. Same data is also analyzed by linear regression method to obtain utility function and finally the output of ANN model is compared with the regression model

## OBJECTIVES OF THE STUDY

The various objectives of the study are as under

1. To Study the relationship between Transport Management system of India (Road transport) and user satisfaction towards the dimensions of Comfort.
2. To see the relationship between Transport Management system of India (Road transport) and user satisfaction towards the dimensions of Time.
3. To find out the relationship between the Transport Management system of India (Road transport) and user satisfaction towards the dimensions of Safety.

## HYPOTHESIS OF THE STUDY

Various hypothesis of the study are as under

$H_{01}$  : There is no significant impact of comfort dimensions on users satisfaction in road public transport system.

$H_{a1}$  : There is a significant impact of comfort dimensions on user satisfaction in road public transport system

$H_{02}$  : There is no significant impact of time dimensions on user satisfaction in road public transport system.

$H_{a2}$  : There is a significant impact of time dimensions on user satisfaction in road public transport system

$H_{03}$  : There is no significant impact of safety dimensions on user satisfaction in road public transport system.

$H_{a3}$  : There is a significant impact of safety dimensions on user satisfaction in road public transport system

## RESEARCH DESIGN

Research Design may be defined as structure of methods and techniques adopted by the researcher to combine various elements of research in the systematic manner to handle research problems efficiently. It also provides a way to conduct research by using appropriate methodology. On the other hand research design is a blueprint of proposed research work, it includes methodology and procedure used to conduct research in a scientific way. Research design of the present study dealt with Methods, Research questions, research hypothesis, data collections, sampling etc. present study based on descriptive and analytical design of the research, both primary and secondary data collected to examine relationship between Transport Management System of India and Users Satisfaction.

## COLLECTIONS OF DATA

Primary data for present study collected through questionnaire method; in this process a set of well prepared questionnaires has been prepared. Total **21** questions included in the questionnaire based on three different dimensions of the Transport Management System in India. Such as **Comfort, Time and Safety**

**Secondary Data:** According to the nature of research, Secondary data for present study collected through various instruments such as published research paper, books, etc

## SAMPLE SIZE AND DESIGN

The populations for present study were selected from peoples of selected cities of India. Random stratified method was adopted to collect the sample among whole populations. To maintain accuracy samples were collected from different demographically and geographically locations of Users of Buses in selected cities.

## DATA ANALYSIS AND HYPOTHESIS TESTING'S

Table 1

Hypothesis	Statement	F Value	P Value	Critical Value
H <sub>01</sub>	Relationship between comfort dimension and Users Satisfaction in the road public transport system	49.477	0.0001	2.100065
H <sub>a1</sub>				
H <sub>02</sub>	Relationship between Time dimension and Users Satisfaction in the road public transport system	8.553	0.0002	2.100065
H <sub>a2</sub>				
H <sub>03</sub>	Relationship between Safety dimension and Users Satisfaction in the road public transport system	21.40	0.0001	2.100065
H <sub>a3</sub>				

## INTERPRETATIONS OF RESULT

1. The above table shows that the calculated value of F is 49.47 which is more than the critical value 2.1 and significant at 0.0001 ( $P < 0.05$ ). On the basis of calculated analysis it can be concluded that the difference in satisfaction level is significant with different dimensions of comfort. Null hypothesis "There is no significant impact of comfort dimensions on user's satisfaction in road public transport system" is **rejected** and alternate hypothesis is **accepted**
2. The above table shows that the calculated value of F is 8.55 which is more than the critical value 2.10 and significant at 0.0002 ( $P < 0.05$ ). On the basis of calculated analysis it can be stated that the difference in satisfaction level is significant with different dimensions of time. Null hypothesis "There is no significant impact of time dimensions on user's satisfaction in road public transport system" is **rejected** and alternate hypothesis is **accepted**.
3. The above table shows that the calculated value of F is 21.40 which is more than the critical value 2.10 and significant at 0.0001 ( $P < 0.05$ ). On the basis of calculated analysis it can be concluded that the difference in satisfaction level is significant with different dimensions of safety. Null hypothesis "There is no significant impact of safety dimensions on user's satisfaction in road public transport system" is **rejected** and alternate hypothesis is **accepted**

## CONCLUSION

In the present context, public road transport at with respect to Comfort, Time and Safety are extremely desirable in MP. Public road transport and metro should be minutely planned in master plans of metropolitan cities. These plans should be executed as per the timeline. There is considerable scope for the improvement of management efficiencies in the public road transport system in Madhya Pradesh. There is a requirement of strategic planning for an integrated transport system with special emphasis on coordination of bus, metro and other public road transport means.

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