

MATHEMATICAL MODELLING OF TRANSPORTATION SYSTEM AND ITS RELATED PROBLEMS: ANALYTICAL STUDY

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Transport is a necessary ingredient of infrastructure that plays a main role in uplifting the quality of human life in economic, social and cultural development. It is a prerequisite for exploring the natural resources maximally to achieve higher productivity in the path of economy to increase the standard of living of the people. The speed of economic development depends upon the efficiency of the transportation system. The socio-political and economic vigour of any society invariably depends on how good transportation creates mobility for goods, people, services etc. This contends that the transports pervasive role of mobility facilitates the achievement of the different objectives of the society. Transportation infrastructure has emerged over centuries as the basic socio-economic & political need of the society. The exclusive demand of transportation is derived from the need of society and can be bifurcated in "freight traffic demand and the passenger traffic demand". The first one is related to levels of economic activity and the second arises out of the need for making journeys to work, education, shopping and other purposes. Apart from goods transportation, passenger transportation is a key socio-economic factor as it serves the basic travel needs of the people in the society. This need had touched alarming peak because the city of Delhi, like other cities most rapidly growing cities in developing countries face the problem of inadequate road network capacity. The vehicle use for transportation are local trains. Government buses, private buses, limited buses auto rickshaws etc. The issue of effectiveness of different types of transports is still to be discussed in detail. How many these numbers of conveyance are effective in present situation. To see the effectiveness of the mode of transportation in the city of Delhi. The study was undertaken how much and what types of transports are effective and should be retained in the present situation.

Thus the major basis problems of Delhi are overcrowding parking facilities, air pollution, noise pollution and other pollution causing due to ply of automobile vehicular traffic. Moreover, Delhi has multiple forms of transportation both new and old Delhi which hampering smooth flow of traffic too. This in turn not only wasting the resources (Human and financial) but also causing a lot of problem for the people in general.

To find out the amicable solution to the alarming traffic problem this was designed entitled "Mathematical Modelling of Transportation System and its Problem: Analytical

study". The investigator intended to examine the impact of introduction of metro system as an alternative mode of transport to check the traffic problem and the problem associated with this.

For this purpose the opinion of people is general from different corner of the city has sought about the introduction of Metro railways in Delhi. 400 cases were taken from the five different parts of Delhi were selected randomly as sample of the study.

Altogether thesis of the study was divided into seven chapters, i.e. Introduction, Profile of the City: Delhi, Air Pollution, Noise Pollution, Overcrowding Transportation System, Parking Problem and its Remedies, Pedestrian Town, Combine Fare system etc.

The obtained data were analyzed keeping in view purpose and objective of the study. The data were obtained on the basis of two questionnaire one each meant for the public opinion about the transport system and the other for the to see the effectiveness of the introduction of mini taxis and shuttle services in Delhi. The results were analysed for each of the two questionnaire separately using Pearson 'r' and Regression equation for all the purpose.

The analysis was done using SPSS package. On the whole, it was found that the introduction of Metro system will cause many convenience to the public life, air pollution, overcrowding, molestation etc. But at the same time the success of Metro can be ensured by providing parking facilities, link services and shuttle services along with the provision of seasonal tickets.

It was also found that introduction of shuttle services and Metro will help in overcoming the transport problem in the walled city and Connaught Circus. Moreover, it will be seen helpful to the elderly people and children. The entire problem of pedestrian of the walled city was basically due to faulty transport system.

At the end it can be summarized as the transport system provided bases for the healthy and prosperous life and faulty transport system are bane for the people. Thus introduction of Metro system can be boon for the people in general and the people of walled city in particular.