

**CONGESTION, ROAD PRICING AND TRAFFIC ANALYSIS IN
ANANTNAG CITY**

A DISSERTATION-I REPORT

SUBMITTED BY

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In partial fulfillment for the award of the degree of

MASTERS OF TECHNOLOGY

IN

TRANSPORTATION ENGINEERING



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DECLARATION

I hereby declare that the dissertation report titled “Congestion Road Pricing and Traffic Analysis in Anantnag City” is an authentic record of my own research work carried out as a requirement for the preparation of M-Tech dissertation for the award of Masters of Technology Degree in Transportation Engineering from Lovely Professional University, Phagwara, Punjab, under the guidance of Mr. Waseem Bhat. All the information furnished in this report is based upon my intensive work and is completely genuine to the best of my knowledge. And no part of this report has ever been published before in any journal or presented for the award of any degree, diploma or honour.

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ABSTRACT

This paper looks at the estimation of using dynamic, income amplifying, clog evaluating on a secretly worked tolled course, when the main option is a very congested, open, free access course. Three strategies are determined by which income can be expanded through the determination of a settled percent of clients to set the toll cost for, through the choice of a settled level of administration on the toll street, and using a nonlinear improvement show. These strategies are tried on a contextual investigation including a profoundly congested passageway. In recreation, the hallway's stream rates are watched following the posting of a toll, the toll is refreshed, and the new stream saw until the point when an ensuing round of income amplifying is connected to the new conditions. It was inferred that in an exceptionally congested passage a dynamic, income boosting toll can fund the development of new limit without debasing social welfare reacting to the present need, this paper introduces an assessment system that may control the assessment endeavors for these exhibit ventures. We planned a three dimensional assessment scientific categorization: street valuing methodologies, affected gatherings, and effects. We at that point utilized the scientific categorization as a system to ponder the writing to feature best in class assessment approaches and accessible demonstrating apparatuses and in addition to recognize those lacking. Regardless of the expansive assortment of work distributed around there, it gives the idea that a noteworthy exertion is expected to streamline and, at times, align existing models so they might be utilized for assessment purposes.

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Chapter.1

INTRODUCTION

Transportation framework incorporates of a meeting of sports and materials speaking with every other to accomplish the purpose of transporting people or products starting with one place then onto the following. Henceforth, the framework desires to satisfy the obvious social and temperate wishes of the clients. as the ones necessities trade, the transportation framework itself develops and troubles show up as it sooner or later finally ends up especially poor to serve humans in widespread intrigue. One of the poor outcomes of any transportation framework is interest blockage. Activity blockage occurs wherever request surpasses the limit of the transportation framework. this deal with gives a diagram of the way blockage is created, how it may be measured or evaluated; and furthermore the one of a kind countermeasures to be taken preserving in mind the prevent intention to balance clog. Sufficient execution measures are required keeping in mind the forestall aim to assess blockage in a transportation framework. Nature of management measures demonstrates the extent of explorer success with framework execution and that is secured beneath voyager discernment. a few measures had been thinking about a specific quit intention to check clog. They're essentially ordered into loose marketplace pastime measures. an define of every this kind of elements of clog is managed in this deal with. Movement clog is a situation on transport arranges that takes location as make use of increments, and is described via slower speeds, longer trek times, and extended vehicular queuing. The most significantly identified illustration is the bodily utilization of streets through automobiles. on the element while hobby request is satisfactorily exceptional that the verbal exchange among cars moderates the price of the motion flow, this consequences in a few blockage as request strategies the limit of a street (or of the convergences alongside the road), outrageous hobby clog units in. at the factor whilst automobiles are completely halted for timeframes, this is casually called a congested street or pastime growl up. motion blockage can prompt drivers attending to be it appears that evidently dissatisfied and participating in road seethe mathematically, clog is generally taken a gander at as the amount of vehicles that undergo a factor in a window of time, or a flow. clog move suits requirements of liquid go with the flow. The move diagram in fig. 1 shows how movement clog is produced in a transportation framework. With the advancement of society, economic system and innovation, the own family unit attributes and in addition the transportation framework gets

encouraged. The adjustment in transport framework causes an adjustment in transport behavior and locational example of the framework. The adjustment in own family unit attributes, transport behavior, locational design, and other development affects result in the improvement of motion. be that as it is able to, the change or exchange in road restrict is just due to the fact the result of development inside the transportation framework and henceforth at lengthy very last a circumstance emerges wherein the movement request is extra outstanding than the restrict of the roadway. this condition is referred to as traffic congestion.

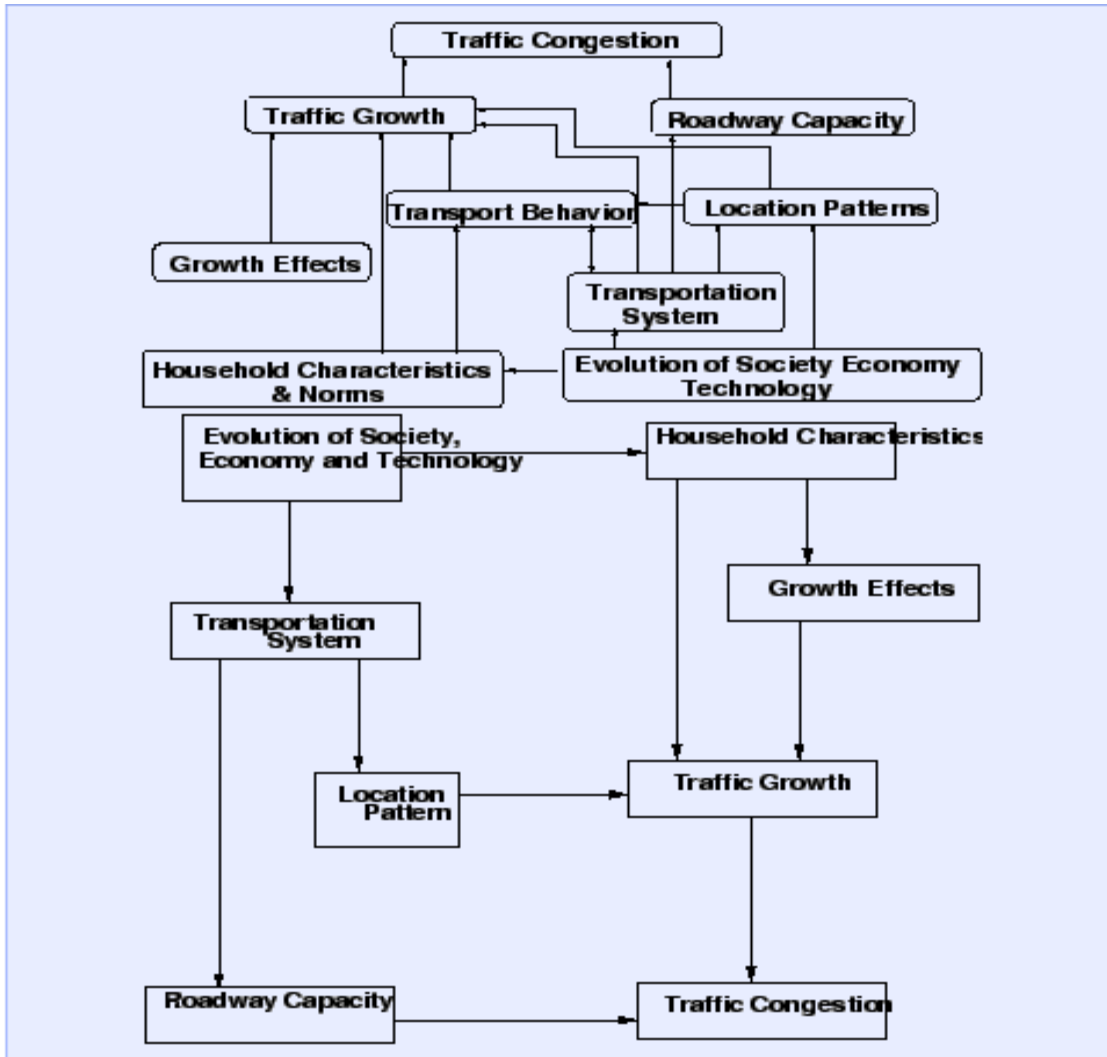


Fig.1 Generation of traffic congestion

Road pricing (moreover street person expenses) are straight fees implemented for the people which are using road, together with avenue tolls, distance or time dependent fully costs, congestion fares and fees planned to determines use of vehicle, gas belongings or vehicles

causing greater pollution . These fees can be used broadly speaking for profits technology, usually for avenue infrastructure financing, or as a transportation call for control tool to lessen peak hour tour and the related traffic congestion or different social and environmental horrific externalities related to street travel together with air pollutants, greenhouse gas emissions, seen intrusion, noise and avenue injuries. Many current avenue pricing schemes have proved debatable, with some of high-profile schemes within the US and the UK being cancelled, behind schedule or scaled again in response to opposition and protest. Critics keep that congestion pricing isn't always equitable, locations an financial burden on neighbouring communities, has a terrible effect on retail agencies and on financial interest in popular, and is just any other tax. A 2006 survey of financial literature at the issue, but, reveals that most economists agree that a few form of street pricing to reduce congestion is economically possible despite the fact that there may be battle of words on what form avenue pricing need to take. Economists disagree over how to set tolls, a way to cowl common charges, what to do with any excess sales, whether or now not and the way "losers" from tolling formerly unfastened roads need to be compensated, and whether to denationalise highways.

the primary published reference to 'road pricing' was in all likelihood in 1949 when the rand corporation proposed "use of direct street pricing to make freight trips extra luxurious on congested routes or to steer the time of day at which freight traffic operates". Nobel-laureate William Vickrey then constructed at the ideas of the economist arthur pigou, outlining a theoretical case for avenue pricing in a amazing paintings close to 1955 presenting in 1959 that drivers must be charged thru digital manner to be used of busy city roads. Arthurpigou had previously evolved the idea of financial externalities in a+ publication of 1920 wherein he proposed that what's now called a pigouvian tax identical to the horrible externality ought to be used to carry the very last results inside a market monetary gadget once more to economic performance.

in 1963 vickery published a paper 'pricing in city and suburban shipping' in the american economic review and gabriel joseph roth, john michael thomson of the department of applied economics at the college of cambridge posted a brief paper titled "street pricing, a therapy for congestion? the smeed record 'avenue pricing: the monetary and technical opportunities', which have been commissioned in 1962 by way of the UK ministry of shipping changed into published in 1964 avenue pricing become then advanced via way of maurice allais and gabriel roth in a

paper titled "the economics of street consumer charges" published by means of the arena bank in 1968.

the primary a success implementation of a congestion price became with the singapore region licensing scheme in 1976. the digital road pricing (hong kong) scheme operated as an ordeal amongst 1983 and 1985 however changed into now not persisted completely due to public competition. a wide form of street tolling schemes have been then delivered in norway between 1986 and 1991 in bergen, oslo, and the trondheim toll scheme it became located that the oslo scheme had the unintended effect of lowering traffic by the use of round five%. the singapore scheme turn out to be multiplied in 1995 and converted to use a state-of-the-art digital tolling device in 1998 and renamed electronic street pricing. The primary use of a road toll for access via manner of low-occupancy automobiles to high-occupancy automobile lane grow to be added in the americaon california country route ninety one in 1995. on the grounds that 2000, distinct schemes had been brought, despite the fact that the congestion pricing thought and some of united kingdom proposals have been no longer improved because of public opposition. the essential areas of evaluation consist of the following

1. Planning ,prioritisation and task initiation.
2. Project format.
- 3. Planning renovation.**
4. National delivery facts.
5. Avenue protection measures.
6. Site visitors control.

Traffic waft information is essential in making plans of a selected phase of the street. Roads Department

- To confirm monetary advantages bobbing up from roads enhancements;
- Research of numerous potential and layout issues for each roads and bridges and parking facilities.
- Layout and development of latest/present junctions.
- Assistance in making plans new tendencies which incorporates roads in a modern-day metropolis, subdivisions, land use, which usually consists of buying centres, resorts, commercial

and commercial complexes, provider stations and distinctive website visitors mills sports activities

- Determination of warrants or the want for implementation of site visitors development and visitors control measures, which includes synchronised/coordinated visitors indicators, forestall signs and symptoms, one manner roads, no access.
- To take a look at destiny visitors inclinations and supporting in predicting site traffic flows within the destiny for a given duration .to categorise roads on their practical foundation.
- Assessment of pavement basic overall performance thru site visitors surveys and length monitoring of determined on sections
- Ascertaining suitable/maximum appropriate timings for upkeep interventions and rehabilitation wishes of numerous roads countrywide
- Set up economic and social implications of design and feasibility research of all development initiatives country wide
- Set up using the road network by using cars of various categories, website traffic distribution, and so forth.

Chapter 2

OBJECTIVES OF THE STUDY:

- Fulfil mobility needs greater efficient and included use of contemporary and deliberate delivery and land-use infrastructure.
- Lessen visitors boom and congestion with the resource of achieving a method shift from private motorised automobile journeys to a extra inexperienced and sustainable mode of delivery;
- Create an green multimodal public delivery community with a purpose to facilitate the interconnection and interoperability of related delivery networks
- We can also use the cycling due to which the air pollution is in lesser amount. As we know the motorised vehicles are costly and create a lot of pollution, due to which the whole world is having Global warming.
- With the help of cycling we can reduce the congestion and we have to pay lesser amount of money, basically in the town regions. Companies which are collecting road user tax from the road users cannot spend the whole money in the construction or in construction of road.

Chapter 3

SCOPE OF THE STUDY

The study concentrates on Model for Traffic Management at four leg intersection and Pedestrian Crossing. The T-intersection and more than one legged intersections) are outdoor the scope of the examiner. The methods of velocity delivery modes (BRTS, MMTS, Metro, and Light Rail) and their repercussions are outside the purview of this study. More emphasis is hooked up to protection, saving of time and gasoline and publicity to Pollution and as a result enhancing efficiency of site visitors management by using DBMS will now not be blanketed.

Chapter 4

LITERATURE REVIEW

1. **Henrik Andersso**(1943)Noise Charges in Road Traffic: Pricing Schedule Based

This paper is about to check the road and noise pricing which is dependent on the marginal price of trade in web site visitor quantity. To explain the estimation technique and the possibility of the technique, we also study the road charges based on a study which is known as Swedish case observe. In this case we compare the values of traffic which are taken from the records and the values of railway which are already known to us and which are examine. The previous values of noise are used in this case because of the fact about the actual swedish values were proper and up to date moreover. The absolute values of the noise charges are of limited. The proper values of noise fair are of limited price it is because of the fact that there are of single case, but the qualitative effects have essential implication based on the coverage. The case examine suggests that the SRMC: (1) the visitor can have a limited visit in the country. (2) It is linked to the wide Varity of road users and (3) this can be changed in type of which vehicle we are using. At the first stage the policy makers can forget about adjustments in site visitor's extent but the amount of people or the number of road users is accurate when noise charge for a particular street is determined. The latter is mainly applicable for individuals at lower noise stages, considering maximum individuals belong to this group. Basically it wrong to predict the values on the bases of uncovered users, for the small period of time it is, is constant term. With the of help of which we can we can directly determine the tax which a road user has to pay towards the management of roads. The price which is determined is same for all the vehicles so that we can have the emission in lesser amount due to which the noise emission is reduced. As an example, changing to low-noise tires on a truck can decrease the noise emission or we can say that if the tires are changed due to which lesser amount of noise is produced.

2. **John El Khoury**(2015) Value of Dynamic Revenue-Maximizing Congestion Pricing in a Highly Congested Corridor

The congestion pricing can be defined in two OR it is having two types. And these two are as under

- Constant
- Dynamic pricing.

In constant pricing, one value of the money is set fixed for a given time interval and the users adopt the behaviour which is based on the money. In dynamic pricing the various tools are constructed along the road with the help of we can easily collect the tax. These two can help also in generating a Nations economy.

3. **By Hong K. Lo** (1991) TOWARD AN EVALUATION FRAMEWORK FOR ROAD PRICING

Rightly summarized the importance of getting a dependable assessment for early street pricing initiatives: it's going to beautify the discussions with dependable data this end result is theoretically attractive, it is almost now not viable to manipulate refund to highway customers based on various morals of time. In maintaining the ones price range, they'll reinvest the money within the infrastructure. Despite the fact that, because the proposed toll scheme is static, its applicability to the setting examined in this paper is constrained. as some distance as is understood, there are best papers that cope with dynamic street pricing for sales maximization. Hence the whole study concludes that the proper and extensive management will lead to the less congestion as well. The ultimate road pricing depends on the extensive management and use of the road resources and the fully and proper usage of the supportive and leading suggestions.

4. **Zhang Hui** (2009). Road Traffic Control Information and Traffic Resource Analysis System
- Traffic useful resource evaluation consists of road floor circumstance evaluation, the shortest course evaluation, vehicle direction-finding, and location traffic useful reserve distribution. The direct and least direction looking approach must be the assignment of extra studies to make sure it nicely takes into consideration the numerous applicable elements. It is low priced to anticipate that except signal controls, tour velocity and flip guidelines are the foremost elements upsetting the adventure point of a direction. Inside a short equilibrium, the adventure time of every road is solid. For example, the excursion time of a street does not alternate throughout the push.

5. Road Walter Block (1980)

The vehicles, notwithstanding its shortcomings, is on the peak of the list of what most people need, whoever they are and anywhere they stay. Excessive taxes and restrictive suggestions designed to deter automobile ownership have no longer had lots effect, nor have the inconveniences of city website online visitors. human beings though force under the most unfavourable conditions, or they go with the flow out when situations ultimately grow to be and bearable the ordinary motives for this case, this is vexing transportation planners the world over, are the automobiles blessings mass transit in terms of privateness, bundle-sporting potential (especially for purchasing); seating availability; safety and amenities. Furthermore, the auto is perfect in flexibility-beginning from and going to anywhere the rider goals operated by using the authorities, best part of car traffic is country- managed. it may be no twist of fate that whilst mass or public transportation is type of clearly owned and: the roadbed, hut now not the car. this does now not imply that under private organization motor cars ought to in no way be prohibited or their use in no way restrained.⁵ the distinction is that below personal agency, the marketplace could have a "voice" within the selection- making device, albeit in a roundabout way, for instance, that a street-owner determined to close off his avenue to private motors. If his decision became wrong, his income will decrease. Disenchanted motorists will turn to other street owners, willing and able to pay expanded prices. the street-owner also can, as a give up end result, exchange his coverage. If he does now not, he can be driven closer to monetary ruin, the better to inspire reorganization of the street-ownership, and the substitution of a extra rational coverage. Useless to say, residents have nothing remotely just like this degree of "power" over their govern- mentally positioned transportation officials.

Chapter 5

Research Methodology

From the advance made towards keeping for the congestion pricing, there's moreover plenty to discover from its breakdown to move ahead, predominantly while the impact in teddy situation is placed inside the hassle of the practice with street pricing idea in different fundamental cities. One of the foremost suggestions in transportation system is to be let down by way of manner of a enormously small team of workers of individuals, almost usually whilst it require consent from a couple of legislative our bodies. Whilst metropolis council usual jamming pricing and the kingdom senate could reputedly have accomplished so as nicely, opponents had been prepared to dam the perception within the assembly. And that they did so no matter their moderately small numbers; simplest 5% of hired city residents would have paid the congestion rate as part of their everyday cross from side to side cordon and area pricing proposals have run aground in unique towns as properly in view that of opposition from drivers who would were charged a fee. The oversized power of harmfully affected businesses to dam an offer is simply now not new to street pricing. Given that neighbourhood citizens have been geared up to prevent huge-scale freeway, transit and airport responsibilities, most effective pricing initiatives in the U.S have provided drivers a non-priced roadway alternative.

Chapter 6

CONCLUSION

The study concludes approximately verifying the unfastened fare with the admonition that our elimination of the case in choose of this coverage is most effective relevant to public mass transportation. As far as personal mass transportation is involved, the question is a completely open one. Although the controlling arguments levelled against loose public fares, given private ownership of all way of transportation, it's miles impossible to rule out all such behaviour. With all the survey performed the study found out that a street site visitors manipulate information gadget primarily based on a map information database. It has superior the consistency, digitalization, and transformation of street visitor's in order coping with. The device functioned properly and improved the efficiency of the police office answerable for visitor's management. Regardless of the monetary case for congestion pricing, it has benefitted and regularized the strong social and political competition, and various abysmal and institutional constraints create similarly barriers to implementation. it therefore seems safe to complete with the prediction that coming a long time will witness more and more tries to position into impact congestion pricing, plenty of so that you can fail of their early degrees, but some of so that you can be successful if simplest on a piecemeal basis. Possible desire, therefore that this evaluation can be out of date earlier than too long.

Chapter 7

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