

A Review for Trip Generation Model for Commercial Vehicle Trip at vatva GIDC

Mori Vardhman, Siddharth Gupte, Khushbu Bhatt

Transportation Engineering , Parul University, Vadodara, Gujarat, India

ABSTRACT

Goods transportation is very important for the development of any nation. Generally Freight Transportation on roads is carried by Trucks. The aim of this thesis is to developed goods truck trip generation model for Vatva GIDC. The company survey is carried out by individual for data collection purpose. The model has been developed using multiple linear regression analysis and. This establishes relationship between the daily numbers of trucks and factors like total floor area, total production area, totals no lcv/hcv etc.

Keywords : Good Transport, Truck Trip, Goods Truck Trip Generation.

I. INTRODUCTION

India with its vast population and natural resources is a huge market for any product. Global industries are wanting to dump their products in Indian market, against which current policies of the government “make in India” has led to growth and development of industries production centre to cater the need of growing population demand. Goods movements are caused by economic activity of production and consumption. A convenient way of thinking about urban Goods movements problems is to identify the principle economic units in urban area and to develop and understanding of their internal structure and the associated commodity movement demand. Goods transport is largely dependent on motorized road transport. Goods Transportation is a major factor contributing to economic growth and development. It is usually considered that Goods transport proceeds from a complex system. Goods transportation encompasses the movement of a wide variety of products, from raw materials to finished Goods, from comparatively low value-to-weight commodities such

as coal, grain, and gravel to high value-to-weight items such as

Computer parts and pharmaceuticals. It includes transport system, infrastructures and urban planning, firm’s logistic strategies.

The main stakes of urban Goods movement (UGM) can be considered at different topics and scales: reliability of the different logistic chains, local traffic growth, local traffic congestion, urban centre’s economic support, environmental nuisances (noise, pollutant emissions), urban logistic centre’s optimal location, greenhouse gas saving, but also urban spread effects and changes in the consumer behaviour, among others.

II. LITERATURE REVIEW

Vinodkumar R. Patel1 and et.al. (IJST 2016) “Development of Regional Industrial Trip Generation Model”. The aim of this research work is to determine the factors affecting trip generation for the selected groups of industries within the region and to develop trip generation model. In this study, trip generation model is developed using linear regression analysis

from the collected data, in linear regression analysis, as a dependent variable (Y) – total daily one-way industrial trips is considered and as the independent variables (X's) attributes of the firms are considered. Seven industrial estates from the GIDC were used in the analysis. The general trip generation model has reasonable explanatory power with R² value of 0.99, indicating that the explanatory variables entered into the model explain 99% of the variation in the daily trips per industry. The variables that mostly affect the number of daily trips per industry are the travel distance, travel time. Its result is consistent with the findings of previous studies in developing as well as developed countries.

Tomasz kulpa (2014) “studied and developed freight truck trip generation model at region level”. The data needed to be constructed truck trip generation equations are usually gathered at company level using the trip diary survey. Although this approach seems to be most suitable it may not cover to all trips made by goods vehicle in analysed area. On the other hand, response rate may be unsatisfactory. Thus other methods of trip generation should be explored. Developed data sets were used to estimate trip generation equations, applying linear and nonlinear regression as well as artificial neural network (ANN).

Navya S V. And et.al. (ICEE 2013) “Trip generation model for the core area of Thiruvananthapuram city”. The travel demand in Thiruvananthapuram city is continuously growing due to its employment in software sector, higher education and commercial activities. With intense developments in residential use and work centres spread over the city of Thiruvananthapuram there has been steep rise in mobility pattern of the people, putting the transport infrastructure of the city to great stress. Despite these prevailing problems, effort to make an empirical study on the city's urban transportation is significant. This paper attempts to develop a home-based trip generation model to examine the factors influencing

the trip generation rate in the study area. A mathematical model is developed and the results show that trip generation rate is highly dependent on the employment status of the people.

Trip production and attraction models were formulated and validated for the CBD area of Thiruvananthapuram. It has been found that trip production is a function of age group and employment rate while trip attraction is influenced by number of commercial establishments and employment opportunities of the zone. The models developed can be of effective use for a transport planner while formulating long term transportation options strategies for the city.

Minchoul Park and et.al. (IJR 2012) “Estimation of Freight Trip Generation Rates based on Commodity Flow”. In Korea, almost 700 industrial parks are under operation. Generally, industrial parks consist of national industrial parks and local industrial parks which are managed by a central government and by local governments respectively. The developing countries such as Korea, China and Vietnam etc. The result showed that it is desirable to apply freight trip generation rate by the sector of industry to estimate freight trip generations and use the production area of firm as an indicator. Specially, the reliability of the rates through a survey could be made sure because a sample rate based on firms in industrial parks was over 25% and the response rate was over 67%. The sample rate and response rate are very superior as compared surveys conducted in many countries. Due to the results of validation, total absolute difference of results using freight trip generation rate by the type of industrial park is lower than that by sector of industry, and when freight trip generation per production area rather than truck trip generation per employee is used, absolute differences are smaller. Thus, this result shows production area is more effective independent variable than employee for

estimating freight trip generation rates of industrial parks.

Goel.s (2011): "have presented paper on "Inter-zonal trip Distribution from Delhi North-West Zone". The paper distributes the inter zone buses trips from Delhi North-west zone to the other zones of Delhi Urban Area (DUA). The Delhi Urban Area, which was divided into nine namely North-West, West, North-East, South-West, North, Central, South-East, East, and South. For trip distribution for bus, method was done by a Mat lab computational model based on the gravity model.

III. RECOMMENDATION

Goods transportation is important for any developing nation. Goods transportation on highway and major district road is done by truck. Goods transportation for GIDC region is very important for VATVA. VATVA GIDC area is dominated by truck transport since many years. Around more than 1000 trucks of VATVA GIDC region are moving on the important freight corridor NH-47.

This type of transportation movement causes traffic congestion, delay, pollution and risk of accidents and hence affecting on the economy of region. Thus to increase the efficiency and effectiveness of the goods movement the study of the truck trips will be carried out from VATVA GIDC

IV. REFERENCES

- [1]. Vinodkumar R. Patel, H. R. Varia and Gargi Rajpara, "Development of Regional Industrial Trip Generation Model, IJST 2016.
- [2]. Tomasz Kulpa (2014) " Freight truck trip generation modelling at regional level Polotechnika Krakowska, Warszawska 24, 31-155 Krakow. Poland (2014)
- [3]. Navya S.V., s. Sanjay Kumar, Gymmy Joseph Kattoor (2013) "Trip generation model for the core area of Thiruvananthapuram city" International Journal of Innovative Research in Science, Engineering.
- [4]. Minchoul Park, Hongmo Sung* and Sungbong Chung Estimation of Freight Trip Generation Rates based on Commodity Flow Survey in Korea, IJR 2012.
- [5]. Dr. L. R. Kadiyali, "Traffic Engineering and Transport Planning", 8th Edition, 2013.