



Parking Demand Model for CBD Area

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Abstract

Parking facilities are an important component of the transport system. Estimation of Parking Generation of a proposed development is essential to the provision of adequate parking facilities and to minimizing traffic impacts in the vicinity of the development. In this article, different Demand Models, theories and approaches that are used in Parking Demand Modeling will be introduced.

Keywords: Discrete Choice Model, ITE Parking Generation, Multinomial Logit Model, Parking Demand Model

1. INTRODUCTION

One of the most important factors in the success of a central business district is the availability of accessible parking. Patrons must be able to park easily and inexpensively in parking spaces that allow enough time for shopping or work. These needs must be balanced against the possibility of these spaces being used by people with other purposes. In order to determine adequate parking for the area businesses while limiting the number of other users who occupy these spaces, many municipalities perform intensive studies on their parking situation.

Parking demand problems have been studied for many years and got much progress on approach. The conclusion can be divided into two types [1]:

- 1-The economic analysis models and
- 2-Parking behavior statistics models.

The first one, such as Young (1985) gave the center business district (CBD) area of Cincinnati was used as a case study. Because of the geographical location, the CBD has limited alternatives to cope with major traffic demands. Gruss (1995) provided an overview of traffic management during the USA World Cup tournament in 1994. Tsukaguchi and Jung (1989) studied and developed a parking assignment model for the High-tech Business District of Osaka City, Japan.

The second one is parking behavior statistics analysis, some major parking demand analysis formula are like parking choice model, Parking Generation rate, the relation of parking demand with building size etc..

2. Parking Demand Studies

Parking studies include financial feasibility, functional design, structural design, and demand studies. There are three major types of parking demand studies: comprehensive, limited, and site specific [2]:

➤ **Comprehensive studies:** cover an entire area, such as the central business district (CBD). In comprehensive studies the future parking demand is estimated with the use of forecasting models, which include population growth, demographic, social and economic trends, as well as trends of the local economy and use of transportation modes. Analytic and comprehensive inventories of on- and off-street parking are gathered along with detailed information on utilization pattern.