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## Car drivers' familiarity with the parking situation around regional shopping centres

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### Abstract

This paper describes a study of car drivers' familiarity with the parking situation in the vicinity of a regional shopping centre. The data used for this study is collected in Veghel, a small city in The Netherlands. The main shopping area of Veghel is surrounded by 13 parking facilities. Residents are asked to indicate if they are familiar with each parking facility. This familiarity is related to various attributes of the resident, the trips they make to the shopping centre and the parking facilities using binary logistic regression analysis. The model analysis show that the probability of being familiar with a parking facility depends on various attributes of the car driver (gender, age, education, and home location), shopping trip (visit frequency and travel mode), and parking facility (chance of free parking space, parking costs, available driving space, walking distance to supermarket).

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### 1. Introduction

Increasing congestion and limitation of space availability in central shopping and business areas forces municipalities to (re)develop transportation plans. The primary aim of these plans is to optimize the use of the urban street network for both motorized and non-motorized traffic. Planners have a variety of measures at their disposal to achieve their goals ranging from car related measures (one way traffic) and public transport related measures (priority at traffic lights) to bike related measures (new bike lanes). A specific group of car related measures concerns parking measures. Examples of parking measures are limitation of the number of spaces available and introduction of paid parking. The measure can be implemented to influence car flows in the CBD

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both in direction (where do cars drive) and in size (where are cars parked). The success of planning measures is strongly related to the familiarity of the traveller with the characteristics of the elements of the transportation system.

When a traveller wants to travel he or she has to make different travel related choices to accomplish the trip such as choice of departure time, travel mode, route, and parking location. To make a deliberate choice, the traveller has to be familiar with the attributes of the available choice alternatives. In the context of travel decisions there is little known concerning travellers' familiarity with the attributes of choice alternatives. This also holds for car drivers' familiarity with the attributes of parking facilities in CBD (e.g., Polak & Axhausen, 1990). For example, Van der Waerden & Borgers (1995) found that car drivers only know a limited number of parking alternatives when visiting a shopping area (see Figure 1). It also appears that car drivers are not familiar with existing parking problems in general (e.g., Ten Heuvelhof, 1990; Stienstra, 1999) and with the levels of different parking attributes in particular (e.g., Van der Waerden *et al.*, 2011).

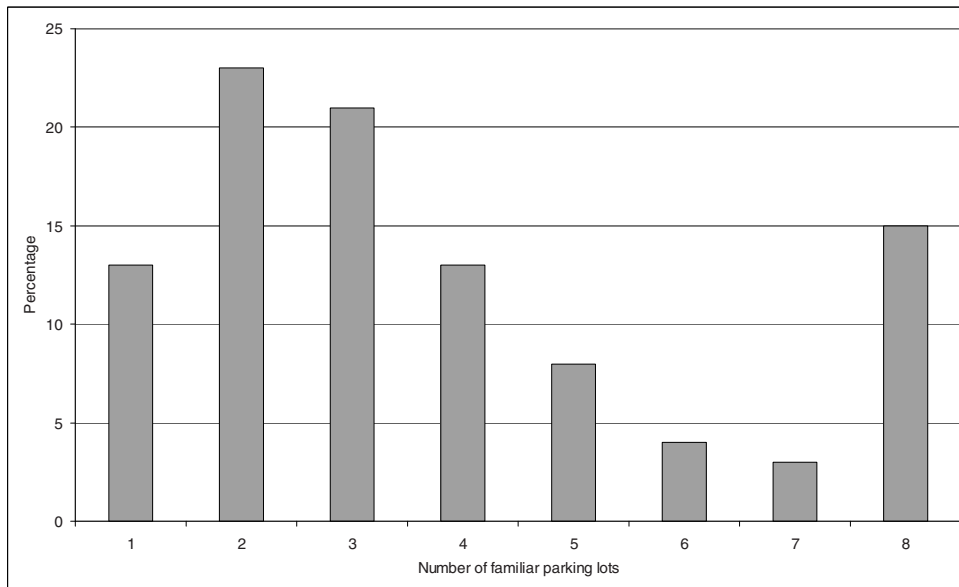


Fig. 1. Car drivers' familiarity with parking facilities, N=438 (van der Waerden & Borgers, 1995)

The aim of the study described in this paper is to contribute to insights into car drivers' familiarity with the parking facilities in the context of shopping trips. The paper focuses on the relationship between attributes of parking facilities and car drivers' familiarity with these facilities. The remainder of the paper is organized as follows. First attention is paid to the issue of familiarity. Next, the adopted research approach is presented. This part is followed by a description of the data collection and the research sample. Next, the analyses are described including an overview of the results. The paper ends with the conclusions.

## 2. Familiarity

A special point of interest related to (parking) choice behaviour concerns the set of available choice alternatives. In general, the individual choice set refers to the set of discrete alternatives considered by an individual in the decision process (Figure 2). Mostly, the individual choice set is a subset of the universal choice set that consists of all alternatives available to the decision maker (e.g., Bovy & Stern, 1990; Pagliara &

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