



Choice of departure station by railway users

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Abstract

This paper applies a multinomial logit model to the choice of a departure railway station by Dutch railway passengers. This is a relevant theme since about 50% of Dutch railway passengers do not travel via the nearest railway station. The passengers' choices for departure stations are aggregated at the four digit postal code area level. We applied three functional forms for the underlying systematic utility of a station, namely a linear effect of attributes, cross effect of distance and frequency of service, and a translog formulation on distance and frequency of train services. With 3,498 post code areas and 360 railway stations our analysis found consistent effect sizes for distance, frequency of service, intercity status of the station and the presence of park-and-ride facility on the choice of departure station. The effect of distance on the choice of a departure station declines smoothly. The effect of frequency of service is relatively small compared to the effect of distance. A frequency of service increase by a hundred trains per day is equivalent to being 600 m closer to the station. The Intercity status of the station plays the biggest role in the choice of departure station. It has an equivalent effect of a change in 2 km distance or about a frequency of service of 300 trains per day. In addition, the presence of park-and-ride facility in the station poses a sizable effect in the departure station choice. In most cases its effect reaches about 35% of the intercity status effect.

Keywords: Railway station choice; Logit model.

1. Introduction

Railway transport constitutes a sizable share of the daily travel made by the Dutch travellers. The figures from the central bureau of statistics (CBS) in 2002 reveal that railway transportation accounts for about 8% of the over all passenger kilometres. This figure is among the highest shares of railway transport in Europe and the world. In the US the overall public transit share (which includes railway and bus services) is about 2% (bureau of transportation statistics 2005). The modal split of passenger kilometres shares for the fifteen members of the European Union are given also in Table 1. Following Austria and France, the Netherlands has the third highest market share for

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