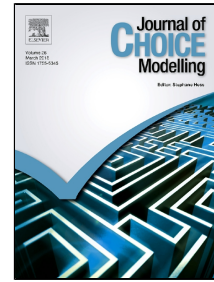


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Value of Travel Time as a Function of Comfort

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Abstract

The value of travel time can theoretically be defined as the opportunity cost of travel minus the direct utility from spending the time during the trip. This paper searches for empirical evidence to support this formulation. We show that travellers who indicate that a shorter trip duration is useful or a longer trip duration is very inconvenient have a higher value of travel time. Furthermore, we show that people who can spend their travel time usefully have a lower value of travel time. Finally, the availability of a computer, laptop etc. during the trip increases the probability of travel time being useful. This study determines the sizes of these effects in a case study for The Netherlands. This is important since the value of travel time is likely to change over time. The outcomes of this paper can be used to estimate the size of the expected reduction in value of travel time as a result of future comfort improvements that increase the possibility to work, read a book, watch a movie and communicate during a trip.

Keywords

Value of travel time; comfort; discrete choice model; cost-benefit analysis

1. Introduction

There is abundant literature on the value of travel time (VTT), which is not surprising given that VTTs are used in many countries as an input for the appraisal of transport projects by means of cost-benefit analysis (CBA).¹ A particular strand of the empirical literature has studied the change of the VTT over time. Some authors (Gunn, 2001, Tapley et al. 2007, Börjesson et al., 2012, Kouwenhoven, 2014b), have already established that over time, the VTT does not increase as much as one would expect on the basis of the income changes alone. They mention that a possible explanation for this finding could be that because of innovations in information and communications technology, travel time can be used more productively and pleasantly than before.

This explanation is also supported by theoretical considerations. The formulation of the VTT as given by De Serpa (1971), Evans (1972), McFadden (1981) and Jara-Diaz (2008) implies that the VTT will decline when travel time can be spend more productively or more comfortably (see also section 2 of this paper).

¹ VTTs are also used as an input into traffic forecasting models, but in this paper we focus on appraisal values.

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