Research stay at the Institute for Choice, University of South Australia: Modelling the impacts of lifestyle variables and space/time constraints on departure time decisions

Project background

One of the largest challenges facing modern society is increasing congestion and traffic jams in cities. This comes with both economic and environmental consequences. The economic losses related to congestion in the Greater Copenhagen area alone is estimated at six billion DKK a year. Looking forward, it is important to be able to address these challenges in a sensible manner. A vital tool in this process is transport modelling, which is used for projecting traffic effects. The ability to accurately project traffic development is essential to evaluating future infrastructure projects and transport policies such as the Fehmarn Belt Link and road pricing charges.

Purpose

The primary purpose of the research stay at the Institute for Choice is to achieve in-depth knowledge about mathematic modelling in transport research. More specifically, the primary focus will be *discrete choice modelling* to gain a deeper understanding of and insight into the choices individuals make regarding day-to-day transport, including means of transportation, destination, travel time, route etc. The research stay will deal with the choice of travel time for commutes, but will not be limited to this field exclusively, since many choices are often made as part of a greater whole – e.g., there is often a link between means of transportation and travel time. A priority focal point will be to understand how these choices are made in line with fundamental values and structures such as daily activity patterns and – more generally – life style.

Yield and societal relevance of the research stay

The research stay provides a unique opportunity for interdisciplinary cooperation with some of the world's leading experts in choice modelling, thus benefitting future research and the recipient's personal development, while contributing to the expertise of the Technical University of Denmark (DTU) and thereby transport research and modelling in Denmark. In addition, the secondment will have the positive effect of promoting cooperation across research institutions, which could generate considerable knowhow in the long term. Furthermore, a large number of Danish stakeholders, including the Danish government, would benefit from a better understanding of how to reduce congestion. Finally, reducing congestion will benefit society, the environment and, not least, individual citizens thanks to less time wasted and less pollution from car emissions.