

Road pricing and its consequences for individual travel patterns - DTU Orbit (08/11/2017)

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While mobility pricing is discussed as a suitable tool for tackling urban traffic problems, its impact on the travel pattern of individuals is largely unexplored. Individual responses to pricing emerge as a number of different changes. As an example, it involves the reduction in actual trip-making, more efficient route-choice decisions, trip chaining, and change of destination choice. The analysis of reliable data seems necessary to gain a deeper insight into the personal motivations of behavioural adjustments to the new monetary constraints. The AKTA Copenhagen study - which was part of the European Union-funded project Pricing Road Use for Greater Responsibility, Efficiency and Sustainability in Cities (PROGRESS) - was a real-life experiment of road pricing in the greater Copenhagen region, which allows one to trace these changes under realistic conditions. During 2001 and 2002, 400 cars were equipped with GPS data-loggers over a period of up to 26 weeks, of which 352 cars had enough observations for further information. In 2003 a third round was carried out with 100 cars, resulting in 91 valid observations. The on-board systems monitored vehicle movement data for each second and were used to simulate road pricing by displaying cost information for every trip driven. The experiment showed significant demand effects with a decrease in daily kilometres travelled between 0 and 40 per cent depending on the location and the pricing scheme; however, the deeper impacts on personal mobility have so far been largely unexplored. One of the appealing features of AKTA is the possibility of examining the different pricing systems applied in their impact on personal mobility. This article explores the question of how road pricing impacts destination choice by a detailed analysis of the rich GPS trip dataset. The panel structure with multiple observations for single cars/drivers allows us to investigate the diversity of individual activity repertoires and related travel patterns in both the control and the pricing periods. In particular, the analysis aims at describing how road pricing affects the choice of destinations and the size and structure of activity spaces (employing measures developed for longitudinal travel data by Schönfelder and Axhausen).

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