The impact of time on the relationship between travel behaviour and the built environment

Keywords: Built environment, Travel Behaviour, Attitudes, Dynamics, Longitudinal

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Area of Research: Urban Transport Studies

Research Summary: In recent decades, much attention has been given to the potential of spatial planning principles to influence travel behaviour by manipulating the built environment. Planning concepts were developed to prevent urban sprawl, by preserving cohesive urban regions, by aiming for compact cities (Europe, in particular the Netherlands) and by promoting transit and pedestrian oriented, mixed neighbourhoods, in the US referred to as New Urbanism, Smart Growth and Transit Oriented Design (TOD). The academic literature, however, is equivocal about the causality and magnitude of the link between the built environment and travel behaviour. Discussions mainly revolve around issues of causality, research design and methodology. To date, most empirical studies investigating the this relationship have applied cross-sectional designs which provide limited evidence for causality. In addition, there is discussion about the role of intervening variables, and travel attitudes in particular. The question here is what is the cause and what is the effect, and to what extent? Does the built environment influence travel behaviour directly or is there an indirect influence via attitudes? To answer this question, a longitudinal approach is required. This study represents one of the first attempts to employ such longitudinal design on these relationships. It aims to add to the integration of land use and transport policies by disentangling the relationships between attitudes, travel behaviour and the built environment over time, providing stronger evidence for causality.

Research Methodology: The study used a longitudinal mixed method design. We re-conducted a survey and a GPS survey among respondents of a previous PhD study at OTB (Bohte, 2010). This enables identifying relevant changes in household circumstances, attitudes and travel behaviour between 2005 and 2012, creating stronger evidence for a causal link between changes in the built environment and changes in travel behaviour. In addition we conducted interviews on a sub-sample of the surveyed households to explore causal mechanisms and choice processes that underlie changes in travel behaviour.


Main Question: How and to what extent do households match their travel behavior with the built environment of their residential location, in particular when their individual/household circumstances change over time, and what role do attitudes play in this relationship?

Deliverables: Four articles in peer reviewed journals: one literature review and three empirical articles, two focusing on the quantitative and one on the qualitative study outcomes.