

Effects of Traveller Information Systems on the Behaviour of the Users

Kurzfassung der Vertieferarbeit von Axel Wolferrmann

Traveller information systems (TIS) play an increasingly important role in the improvement of transport systems, and, hence, are an important part of them. This importance can be seen in an influence of travellers through information systems. The attractiveness of a transport mode depends apparently among other factors on the traveller information on this mode.

The importance of traveller information in understanding travel behaviour has been recognised already. Particularly the ways through which the information exerts its influence and the quantitative and qualitative impacts of it has, however, not yet been researched comprehensively. One reason can be found in the complexity of the topic, another in the high costs for a sound data collection.

The British Department for Transport develops a multimodal traveller information system for Great Britain under the name of "*Transport Direct*". As a preparation research has been initiated and financed. This thesis deals with parts of the research topics identified as being important for the development of *Transport Direct*. The focus is drawn on multimodal traveller information particularly for public transport and the role of information on the end-leg of trips concerning the mode choice for the main leg.

The first three sections describe the findings of a literature review on traveller information systems and travel behaviour. To introduce into the broad topic of traveller information systems and their impacts, in the first of them the different kinds of existing systems, possible user groups, probable future development, and aims of the systems are described.

The second section deals with travel behaviour in general and the possible ways of influencing it. The important factors are described and models to explain decision making processes are presented. The development in the recent years from simple linear models using explanatory variables towards more complex socio-psychological theories is shown.

With the important terms and the basics of traveller information systems explained and user behaviour described, the available evidence in the literature for influences of multimodal traveller information on the user behaviour is analysed in the third section. It can be seen that most research lacks sufficient longitudinal data and deals either with specific projects or unspecific fundamentals. Many results indicate a potential for traveller information to influence the users, but few quantitative and detailed data can be found. The main role seem to play changed attitudes.

Most of the research is funded by governments and the European Union. The attention of this research is drawn particularly on mobility centres, which try to fill the gaps resulting from transport operator oriented information. One important problem occurring is the difference between expected information (user) and presented information (to provide integrated multimodal information). Other potential problems are inundation with information and personalised information. The role of traveller information systems and its effects in the context of other measures (e.g. campaigns, regional integration, politics) is described. Moreover, it can be seen that traveller information systems have also undesired impacts (e.g. social exclusion, reducing natural variation, enhancing existing attitudes).

With the background of this literature review a research area is chosen which still offers substantial possibilities for further analysis, while it is important for the understanding of traveller information and its effects on the user behaviour (especially in the context of *Transport Direct*): the field of information on the end--legs of multi leg trips. In this thesis the focus is drawn particularly on walking as the transport mode for the end--leg.

As the basis for a survey four hypotheses are phrased, which try to catch in four steps as only a small part of possible effects the influence of end--legs on the transport mode for the main leg, the role of information for the main leg, a correlation of walking and the usage of public transport, and the influence of information in increasing the attractiveness of walking. Through more detailed objectives aiming in the first place at proving or refuting the hypotheses a survey is developed.

The way of developing the survey including survey sample, sample frame, survey instrument, questionnaire, and used material is described. The survey was planned and realised as a streetside interview in the city centre of Southampton (Hampshire). Changes made after piloting the survey due to problems like length of interviews, misleading questions and unsuitable material (e.g. maps) are explained.

The results of the survey cannot dependably proof the hypotheses, but give several indications of important aspects concerning traveller information at its effects. Simple maps appear to be most useful for travellers as opposed to written descriptions or comprehensive maps with a high degree of detail and additional information. The results of questions on probable behavioural changes show the importance of information in decision making on transport modes.

The role of user groups is shown for basic categories like '*frequent public transport user*', '*old traveller*', or '*(fe)male traveller*'. It appears that some attitudes and perceptions are correlated considerably to user groups (e.g. perceiving the distance of end--legs, seeking information, perception of stages of public transport trips, importance of coloured maps), while others seem to be quite homogenous concerning user groups (e.g. considering the distance of end--legs, impediments to walking).

However, the realisation of the survey revealed not only important research areas for detailed future examinations, but showed also some problems of conducting surveys like this. Therefore a number of potential improvements are presented. A suitable survey instrument and sample size in achieving more representative and reliable results is important. Some questions could be extended upon and more objectives should be included in a bigger survey.