Introduction

During a series of lectures and seminars on recent advances in activity-based models of travel demand and uncertainty in complex model systems in Asia and Europe, we frequently were asked to what extent the shift from four-step models to activity-based models of travel demand requires different data and whether new technology would stimulate the development of new modeling approaches. These visits to different universities made us aware of the fragmented nature of research on the development of new technology for collecting data on activity-travel behavior. Research is fragmented across disciplines and regions. Relevant research is conducted not only in the travel behavior and travel survey professional and academic communities but also in geo-computing, artificial intelligence, and geography. The lack of substantial cross-references in papers suggested the existence of quite distinct research communities. Moreover, we realized that researchers are often only aware of part of the relevant literature, typically related to their own discipline and region.

Returning to the office from one of these trips, we received a general invitation from IGI Global to submit proposals for new books on technology. Although we were slightly hesitant, knowing of recent review articles and other similar books on their way, after checking the interest in the volume among peers, the mostly positive responses from leading experts in the field made us decide to give the project a try. To give sufficient credit to the main motivation of bringing different networks and disciplines together, we explicitly invited different groups from across the world and from different disciplines that had recently been active on the topic of interest. The selection of groups is somewhat arbitrary; it reflects our knowledge of what we thought were interesting projects. We must admit that during the project we encountered several other relevant projects. It shows the importance of the topic area.

This is the result of our effort, a collection of 21 chapters on the use of modern technology to collect activity travel data. Chapters differ in terms of their focus, ranging from descriptions of experiences with the application of new technology in data collection via improved methodologies to extract activity-travel data from GPS traces to interesting substantive chapters based on the latest technology. All chapters were peer-reviewed. We would like to express our sincere thanks to authors and reviewers. The process went smoothly, and in fact, we completed the project before the planned deadline.

We trust that the book offers interesting new material for its readership. Enjoy the reading.

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