METADATA

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Abstract

The book is addressed to students of Civil Engineering departments of universities offering a complete guide in one of the most important scientific fields of transport planning, and transport demand forecasting. The book provides an overview and classification of all methods and models, which are widely used in all steps of the 4-step transport model (Trip generation, Trip distribution, Modal split, and Traffic assignment), and presents numerous applications and examples of the methods and models. The book has been structured and organized in such a way that follows the teaching process and content of the courses related to and especially the course 'Transport Planning', which is one of the basic courses of the transportation direction of the Civil Engineering departments. First, the theoretical background is provided to familiarize the students with transport planning, its role, and the stages of its implementation; transport demand forecasting, its four steps, necessity, and basic notions; and demand (elasticity) and its characteristics. Then, the data used by the forecasting methods are presented, along with the types of surveys used for their collection. The main part of the book follows, which includes a detailed description of the methods and models mostly used for forecasting transport demand. The book ends with the presentation of applications of the methods for each step of the transport model and an integrated application covering all four steps. Moreover, the book offers additional knowledge for a better understanding of every step of the transport model, such as factors affecting commuters' choices, network theory, use of big data, as well as guidelines for the use of Excel in the application of one of the most important methods, the linear regression.

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