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Nota di contenuto	Cover; Modeling Urban Dynamics; Title Page; Copyright Page; Table of Contents; Introduction; Chapter 1. The Role of Mobility in the Building of Metropolitan Polycentrism; 1.1. Introduction; 1.2. Identification of centers and sub-centers; 1.2.1. A most widespread morphological approach; 1.2.2. Identification of kernel units; 1.2.3. Building multi-commune clusters; 1.2.4. Aggregation criteria; 1.2.5. Aggregation of kernel units into clusters: a three-step approach; 1.3. Polycentric functioning in two metropolitan contexts; 1.3.1. Morphological evolutions 1.3.2. Evolving mobility: from local to metropolitan integration1.3.3. Pace of metropolitan integration; 1.4. Conclusion; 1.5. Acknowledgements; 1.6. Bibliography; Chapter 2. Commuting and Gender: Two Cities, One Reality?; 2.1. Commuting, gender and urban dynamics; 2.1.1. Commuting and gender: state of the art; 2.1.2. Some methodological issues; 2.2. Commuting and gender in Belgium; 2.2.1.

Spatial data; 2.2.2. Assessing distance decay with survey data; 2.2.3. A model for Brussels based on the 1991 census; 2.2.4. Trips to Brussels according to the 2001 census

2.3. Commuting and gender in Quebec City 2.3.1. Evolution of transport modes, trip durations and distances; 2.3.2. Evolution of activity areas; 2.3.3. Evolution of mobility determinants; 2.4. Quebec City and Brussels: two cities, one reality?; 2.5. Acknowledgements; 2.6. Bibliography;

Chapter 3. Spatiotemporal Modeling of Destination Choices for Consumption Purposes: Market Areas Delineation and Market Share Estimation; 3.1. Introduction; 3.2. Main approaches to the spatial analysis of retail activity; 3.2.1. Traditional approaches; 3.2.2. Modeling consumer behavior choices

3.2.3. Microsimulation of trip duration and distance within a GIS 3.2.4. GIS contribution to the spatial analysis of retail activity; 3.3. Modeling market areas and consumer destination choices; 3.3.1. Spatial distribution of retail supply and definition of retail structures; 3.3.2. Market area delineation: analytical approach; 3.3.3. Modeling consumer behavior; 3.4. Conclusion; 3.5. Acknowledgements; 3.6. Bibliography;

Chapter 4. Generation of Potential Fields and Route Simulation Based on the Household Travel Survey; 4.1. Introduction; 4.2. Rebuilding the virtual city

4.2.1. A systematically disaggregated model 4.2.2. Structuring data through space and over time; 4.2.3. Generating a potential field for spatial assignment of a population; 4.3. From the city in motion to individual trajectories; 4.3.1. Revealing the city in motion; 4.3.2. Rebuilding individual trajectories; 4.4. Conclusion; 4.5. Bibliography;

Chapter 5. Impacts of Road Networks on Urban Mobility; 5.1. Introduction; 5.2. The urban road network: a major determinant of pedestrian flow; 5.2.1. The effect of the road network on the space syntax

5.2.2. Applying space syntax to pedestrian flows as observed in Lille

Sommario/riassunto

The field of Urban Dynamics itself is based on the systems engineering concept that all complex systems (and cities and urban areas are no exception) are comprised of independent and often smaller, more understandable sub-components with relationships to one another. This allows for the system as a whole to be modeled, using knowledge of the individual subsystems and their behaviors. In this instance, urban dynamics allows for the modeling and understanding of land use, the attractiveness of space to residents, and how the ageing and obsolescence of buildings affects planning and economic development, as well as population movements, with the urban landscape. The book adopts a trans-disciplinary approach that looks at the way residential mobility, commuting patterns, and travel behavior affect the urban form. It addresses a series of issues dealing with the accessibility of urban amenities, quality of life, and assessment of landscape residential choices, as well as measurement of external factors in the urban environment and their impact on property values.