

GeoJournal Library 100

Yuji Murayama · Rajesh B. Thapa *Editors*

Spatial Analysis and Modeling in Geographical Transformation Process

GIS-based Applications

Interest in spatial science with GIS has tremendously grown in recent years in multi-dimensions. Researchers from a variety of academic disciplines are employing geographical thinking and GIS tools to develop spatially-explicit models to understand the real world phenomena. Currently, spatial science is becoming more important than ever because enormous volumes of spatial data are available from different sources, such as GPS, Remote Sensing, and others.

This book deals with spatial analysis and modelling. It provides a comprehensive discussion of spatial analysis, methods, and approaches related to human settlements and associated environment. Full overview of the topic including a range of geographic and thematic applications and synthesis of recent research progress on the theory and practice is covered. Empirical case studies from different regions in Asia are collected to show the usefulness of GIS. These studies examine the geographical transformation process using spatial autocorrelation, fuzzy, neighbourhood analysis, voronoi, cellular automata, analytic hierarchy process, artificial neural network, spatial metrics, regression, and remote sensing mapping techniques. Techniques of population estimation in case of emergency preparedness are also discussed. Furthermore, the readers will enjoy the geographic visualization of the different results and experience by fully functional Web-GIS system. The core value of this book is a wide variety of methods with state of the art discussion in order to understand the drastically changing environment on the earth.

This volume provides a milestone reference to students, researchers, planners, and other practitioners dealing the spatial problems on urban and regional issues.

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