

Preface

Understanding Complex Urban Systems is targeted at researchers and students of urban and regional studies. This volume is also targeted at urban strategists and urban planning professionals who have experienced the limits of traditional planning approaches and are now seeking to understand the city as a complex system. The reader is presumed to possess a basic knowledge of complex systems approaches. Although no specific knowledge is required, some insight into one or more complex systems concepts such as, e.g., agent-based modeling, the Viable Systems Model, or organized and disorganized complexity may facilitate the reader's understanding of the papers presented in this volume.

The present volume aims to advance the understanding of cities as complex systems and to support urbanists and urban developers in better understanding characteristics of urban complexity and in dealing with this complexity using appropriate methods. The papers of this volume show how systems and complexity theories can be applied in urban research and urban development. A further aim of this book is to advance the discourse concerning current and in-principle limits of modeling and planning in complex systems by presenting a wide variety of often complementary approaches from evolutionary economics to literary studies, to systemic urban development, and further to agent-based and system dynamics modeling as well as stochastic modeling. The editors and contributors share the conviction that the complexity of the city as an object of studies makes complementary approaches from various disciplines essential to an adequate understanding.

Thus, the focus of this volume lies on different modeling approaches originating in various disciplines. The articles and essays presented provide some insights from the forefront of complex urban systems research, e.g., modeling of human behavior during disaster situations, dealing with unpredictable new qualities, and handling of uncertain future events. The volume thus seeks both to advance theoretical and methodological thinking in research on complex urban systems and to suggest ways of dealing with complexity in practice.

Essen, Bonn, Brussels
August 2013

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Understanding Complex Urban Systems:
Multidisciplinary Approaches to Modeling
Walloth, C.; Gurr, J.M.; Schmidt, J.A. (Eds.)
2014, XI, 158 p. 36 illus., Hardcover
ISBN: 978-3-319-02995-5