

Contemporary Research in Urban Planning



Mariana Mohamed Osman
Alias Abdullah
Azila Ahmad Sarkawi
Rustam Khairi Zahari



IIUM PRESS

INTERNATIONAL ISLAMIC UNIVERSITY MALAYSIA

Contemporary Research in Urban Planning

Mariana Mohamed Osman
Alias Abdullah
Azila Ahmad Sarkawi
Rustam Khairi Zahari



IIUM Press

Published by:
IIUM Press
International Islamic University Malaysia

First Edition, 2011
© IIUM Press, IIUM

Individual contributors copyright © Prof. Dato' Dr. Mansor Ibrahim, Prof. Dato' Dr. Alias Abdullah, Prof. Dr. Mohammad Abdul Mohit, Assoc. Prof. Dr. Abdul Azecz Kadar Hamsa, Asst. Prof. Dr. Rustam Khairi Zahari, Asst. Prof. Dr. Mariana Mohamed Osman, Br. Samsuddin Jaafar, Asst. Prof. Dr. Lukman Hakim Mahamod, Asst. Prof. Dr. M. Zainora Asmawi, Asst. Prof. Dr. Azila Ahmad Sarkawi, Asst. Prof. Dr. Syafiee Shuid, Asst. Prof. Dr. Norzailawati Mohd Nor.

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted, in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise, without any prior written permission of the publisher.

Mariana Mohamed Osman
Contemporary Research in Urban Planning
Mariana Mohamed Osman

ISBN: 978-967-418-036-2

Printed by:
IIUM PRINTING SDN.BHD.
No. 1, Jalan Industri Batu Caves 1/3
Taman Perindustrian Batu Caves
Batu Caves Centre Point
68100 Batu Caves
Selangor Darul Ehsan

CONTENTS

	<u>Page No.</u>
Contents	v
List of Tables	vii
List of Figures	viii
Foreword	ix
Preface	x
Contributors	xii
CHAPTER 1: A SURVEY METHODOLOGY ON THE MEASUREMENT OF TRAFFIC NOISE <i>Abdul Azeez Kadar Hamsa , Masao Miura, Shuhei Inokuma and Yosuke Nishimura</i>	1
CHAPTER 2: WELFARE STATE REGIMES AND LOW COST HOUSING PROVISION IN MALAYSIA <i>Syafiee Shuid</i>	8
CHAPTER 3: PREFERRED FENCE DESIGN: A CASE STUDY OF SELECTED COMMUNITIES IN THE KLANG VALLEY <i>Alias Abdullah, Rosmizawati Mohamed Salleh and Muhammad Faris Abdullah</i>	19
CHAPTER 4: ASSESSING THE LEVEL OF SERVICE OF POLICE STATIONS IN URBAN AREAS USING CATCHMENT AREA ANALYSIS: A CASE STUDY OF WANGSA MAJU, KUALA LUMPUR <i>Samsuddin Jaafar and Zul Aiman Md. Salleh</i>	30
CHAPTER 5: THE CONCEPTUAL FRAMEWORK OF REGIONAL DEVELOPMENT IN MALAYSIA <i>Mariana Mohammed Osman , Syahrifah Bachok & Noor Suzilawati Rabe</i>	39
CHAPTER 6: TRADITIONAL ISLAMIC CITIES: LESSONS LEARNT <i>Azila Ahmad Sarkawi & Sharifah Fadilawaty</i>	46
CHAPTER 7: THEORY AND RESEARCH IN URBAN AND REGIONAL PLANNING: EVOVLING NATURE AND FUTURE CHALLENGES <i>Mohammad Abdul Mohit</i>	56

CHAPTER 8:	THE AGREEABLE CALIBRATION OF CELLULAR AUTOMATA MODEL IN URBAN LAND USE SPRAWL SIMULATION: A REVIEW AND ANALYSIS	66
	<i>Norzailawati Mohd Noor and Mazlan Hashim</i>	
CHAPTER 9:	AN AUTOMATED LAND USE MAPPING USING REMOTELY SENSED DATA FOR TOWN PLANNING PURPOSES: REVIEW OF PROPOSAL	75
	<i>Norzailawati Mohd Noor</i>	
CHAPTER 10:	COMMUNITY DEVELOPMENT PROGRAMMES IN KUALA LUMPUR	82
	<i>Raja Noriza Raja Ariffin, Rustam Khairi Zahari & Mohd Idham Mohd Yusof</i>	

CHAPTER 8

THE AGREEABLE CALIBRATION OF CELLULAR AUTOMATA MODEL IN URBAN LAND USE SPRAWL SIMULATION: A REVIEW AND ANALYSIS

Norzailawati Mohd Noor¹ & Mazlan Hashim

INTRODUCTION

Realistic high-resolution Cellular automata (CA) based models of urban and regional systems raise significant problems of calibration and validation. This paper examines the major philosophical and methodological issues involved in the validation of models that produce as output patterns that are complex but non-deterministic due to stochasticity and bifurcations. Cellular automata (CA) models for urban sprawl simulation have been increasingly used owing to their simplicity, flexibility and intuitiveness and particular because of their ability to incorporate the spatial and temporal dimensions of the processes. However, methods to determine a precision of calibration of CA have yet to be not fully established. Various empirical methods have been developed to overcome these drawbacks in aspect to achieve the reliable simulation particularly on dealing a factor of cell type or the stochastic components. Therefore, this work demonstrates empirical calibration of urban land use sprawl to acquire a new level of assesment to enable the reliability in CA simulations.

SPRAWL CHARACTERISTIC AND MODELING APPROACHES

Urban systems are evolving and emerging in suprising ways. This is particularly true in Malaysia recently, as its urban geography has essentially been re-drawn over the last fifty years. The phenomenon of urban land use sprawl is the poster-child for these kinds of transformation. Sprawl is a relatively new form of urbanization, falling somewhere between Ebenezer Howard's ideas for Garden Cities and Le Corbusier's notion of ubiquitous urban form, yet altogether different- a geography nowhere as referred by Kunstler (1993). In regards to simulation as essential to the study of sprawl, this review shows that modeling and simulation may serve as generative science which further will gain the understanding of phenomenon of sprawl, and the factors that combine to produce it by piecing elements of sprawling systems together in simulation, and studying the ways in which they interact to form system dynamics.

¹ Assistant professor at the Urban and Regional planning department of International Islamic University Malaysia.(Contact.No: +603-6196624 fax:+603- 6196 4864 Email: norzailawati@iiu.edu.my)