



شبكة المعلومات الجامعية
التوثيق الإلكتروني والميكرو فيلم

بسم الله الرحمن الرحيم



MONA MAGHRABY



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التوثيق الإلكتروني والميكرو فيلم



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جامعة عين شمس

التوثيق الإلكتروني والميكروفيلم

قسم

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MONA MAGHRABY



PREDICTION OF URBAN GROWTH BASED ON ACCESSIBILITY USING GIS \ CA INTEGRATED APPROACH

By

Ahmed Rabie Mohamed Hamed

A Thesis Submitted to the
Faculty of Engineering at Cairo University
in Partial Fulfillment of the
Requirements for the Degree of
MASTER OF SCIENCE
in
Architectural Engineering

FACULTY OF ENGINEERING , CAIRO UNIVERSITY
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Title of Thesis:

Prediction Of Urban Growth Based On Accessibility Using GIS \ CA
Integrated Approach

Key Words:

Urban Growth; Urban Simulation; Roads/Transportation Network; Geographic
Information Systems (*GIS*); Cellular Automata (*CA*).

Summary:

Recently, less developed countries (*LDCs*) witnessed unprecedented rapid spontaneous urban growth rate coupled with fast population growth, leading to: distort the national strategic plans, more fiscal burden, inadequate urban planning intervenes, irrelevant urban policies, threaten the state-strategic crops, pollution, traffic congestion, informality notion, high population densities...etc.

Although, developed countries (*DCs*) face similar issues but handle differently, as modern technologies of computing are heavily integrated into urban planning process. Thus, the thesis suggests integrated approach using *IDRISI: Land Change Modeler (LCM)* with *Geographic Information System (GIS)* to simulate the current urban growth status and hence predict its future growth (2050) with emphases on accessibility to existing urban areas and/or accessibility to roads network as two driving variables of urban growth in the case study.

Disclaimer

I hereby declare that this thesis is my own original work and that no part of it has been submitted for a degree qualification at any other university or institute.

I further declare that I have appropriately acknowledged all sources used and have cited them in the references section.

Name:

Date: / /

Signature:

Dedication

Dedicate more than 7500 hours (= about 313 days distributed over five years) of continued dedicated hard work in preparing this thesis to every science seeker, to all my family members particularly to my mother "*Ragaa Mahrán*" and the two older siblings "*Mohamed*" and "*Asmaa*", these persons who believed in me, and always supports my back since the childhood so far, beside my beloved sister "*Hoda*" and my father.

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Table of Contents

| | |
|---|------------|
| List of Tables | ii |
| List of Figures | iii |
| Acknowledgements | iv |
| Dedication | v |
| Abstract | vi |
| 1 Thesis Introduction | 1 |
| 1.1 Introduction | 1 |
| 1.2 Thesis Objectives | 9 |
| 1.3 Thesis Questions | 10 |
| 1.4 Thesis Methodology | 10 |
| 1.5 Thesis Structure | 11 |
| 2 Review Historical Spatial Allocation Theories Based On Accessibility | 15 |
| 2.1 Urban Growth Based On Accessibility To Urban | 15 |
| 2.1.1 Spatial Cycle Theory (SCT)[85], [84] | 16 |
| 2.1.2 Core-Periphery Theory[83] | 17 |
| 2.2 Urban Growth Based On Accessibility To Roads | 19 |
| 2.2.1 Christaller Central Place Theory[8],[78] | 19 |
| 2.2.2 Von Thunen Model[57] | 25 |
| 2.2.3 Multiple Nuclei Model[78] | 29 |
| 2.3 Complexity Theory Approach[98] | 31 |
| 2.3.1 Theory Of Complexity-Economics | 35 |

| | | |
|----------|---|-----------|
| 2.3 | Summary | 37 |
| 3 | Evaluate The Existing Urban Models | 39 |
| 3.1 | Aggregate Cellular Automation Models (<i>CA</i>) | 41 |
| 3.1.1 | IDRISI: Land Change Modeler (<i>LCM</i>) | 42 |
| 3.1.2 | IDRISI: <i>GeoMod</i> | 58 |
| 3.2 | Disaggregate Agent-Based Model (<i>ABM</i>) | 68 |
| 3.2.1 | <i>Agent</i> Notion | 69 |
| 3.2.2 | <i>Agent</i> Rules, Behaviour, Relationships And Environments | 71 |
| 3.2.3 | Construct An <i>Agent-Based Model</i> | 72 |
| 3.2.4 | Applications Of <i>Agent-Based Models</i> | 74 |
| 3.2.4.1 | SWARM | 74 |
| 3.2.4.2 | MASON\GEOMASON | 78 |
| 3.3 | Microsimulation Models (<i>MSM</i>) | 84 |
| 3.4 | Common Satellites Resources | 87 |
| 3.5 | Summary | 88 |
| 4 | Comparative Analysis For Domestic, Regional And Global Experiments | 89 |
| 4.1 | Greater Cairo Metropolitan Area, Egypt[32] | 89 |
| 4.1.1 | Methods And Tools In-use | 91 |
| 4.1.2 | Deducting Driving Factors | 94 |
| 4.2 | Qazvin Province, Iran[12] | 95 |
| 4.2.1 | Methods And Tools In-use | 96 |
| 4.2.2 | Deducting Driving Factors | 96 |
| 4.3 | Hang-Jia-Hu Plain, Zhengjiang Province, China[93] | 98 |
| 4.3.1 | Methods And Tools In-use | 99 |
| 4.3.2 | Deducting Driving Factors | 104 |
| 4.4 | Summary | 108 |

| | | |
|----------|---|------------|
| 5 | Prepare The Fundamental Databases For <i>The Proposed Workflow</i> | 109 |
| 5.1 | <i>The Proposed Workflow</i> Data Preparation | 109 |
| 5.1.1 | Description Of The Case Study | 109 |
| 5.1.2 | The Importance Of The Selected Case Study | 113 |
| 5.1.3 | LandSat Images Preparation | 115 |
| 5.1.4 | Landsat Images Conversion (Vector To Raster Maps) | 122 |
| 5.1.5 | Prepare Input Maps For <i>IDRISI</i> | 125 |
| 5.2 | <i>The proposed workflow</i> Calibration Process | 129 |
| 5.2.1 | <i>The Proposed workflow</i> Calibration Results | 131 |
| 5.2.1.1 | Change Analysis Results | 131 |
| 5.2.1.2 | Modelling Transition Potential Sub-models Results | 134 |
| 5.2.1.3 | <i>The Proposed workflow</i> Optimization To Adopt <i>Egyptian</i> Context | 137 |
| 5.3 | <i>The Proposed Workflow</i> Validation Process | 144 |
| 5.3.1 | Data Preparation To Predict Urban Growth Scenarios | 144 |
| 5.3.2 | <i>IDRISI: LCM</i> Outputs Validation | 151 |
| 5.3.2.1 | Validation Based On Visual Interpretation | 151 |
| 5.3.2.2 | Validation Based On Areas Comparison | 156 |
| 5.3.2.3 | Validation Based On <i>IDRISI</i> | 156 |
| 5.3.2.4 | Validation Based On <i>IDRISI</i> Relative Operation Characteristic (ROC) Module | 159 |
| 5.4 | Summary | 161 |
| 6 | Run The <i>Proposed Workflow</i> To Predict The Year 2050 | 163 |
| 6.1 | Apply <i>The proposed workflow</i> To Predict 2050 | 163 |
| 6.1.1 | Prepare The Required Inputs To Predict 2050 | 163 |
| 6.1.2 | Reveal Urban Growth Prediction For The Year 2050 | 165 |
| 6.1.3 | Discussion On The Prediction Of The Year 2050 | 171 |

| | | |
|----------|--|------------|
| 6.2 | Evaluation The Results Based On <i>EPA</i> Criteria | 175 |
| 6.2.1 | EPA: Model Relevancy | 177 |
| 6.2.2 | EPA: Model Resources | 177 |
| 6.2.3 | EPA: Model Support | 178 |
| 6.2.4 | EPA: Model Technical Expertise | 179 |
| 6.2.5 | EPA: Model Data Requirements | 180 |
| 6.2.6 | EPA: Model Accuracy | 180 |
| 6.2.7 | EPA: Model Resolution | 181 |
| 6.2.8 | EPA: Model Temporal Capabilities | 181 |
| 6.2.9 | EPA: Model Versatility | 182 |
| 6.2.10 | EPA: Model Linkage Potential | 182 |
| 6.2.11 | EPA: Model Public Accessibility | 182 |
| 6.2.12 | EPA: Model Transferability | 183 |
| 6.3 | Limitations Of The <i>Proposed workflow</i> | 184 |
| 6.3.1 | <i>IDRISI: LCM</i> Limitations As A <i>CA</i> -based Dynamic Model | 184 |
| 6.3.2 | <i>IDRISI: LCM</i> Limitations In The Case Study Context | 184 |
| 6.4 | Summary | 186 |
| 7 | Thesis Conclusion And Further Researches | 187 |
| 7.1 | Thesis Conclusion | 188 |
| 7.2 | Thesis Recommendations | 189 |
| 7.3 | Further Researches | 190 |
| | References | 191 |
| | Appendix A Appendix | 198 |

List of Tables

| | | |
|-----|---|-----|
| 1.1 | Number and area of agricultural land invasions per governorate. Source: <i>Ministry of Agriculture and Land Reclamation</i> , acquisition date between: 25/1/2011 to 2/7/2018 | 6 |
| 3.1 | The training interval for the selected study area ($inkm^2$) from 1992 to 2001. Source: [58] | 55 |
| 3.2 | The transition probability matrix for the selected study area from 1992 to 2001. Source: [58] | 56 |
| 3.3 | Comparative analysis between <i>CA</i> models (<i>IDRISI: LCM, GeoMod</i>) and <i>ABM</i> models (<i>SWARM, MASON\GEOMASON</i>). Source: researcher work | 82 |
| 3.4 | (Continued) comparative analysis between <i>CA</i> models (<i>IDRISI: LCM, GeoMod</i>) and <i>ABM</i> models (<i>SWARM, MASON\GEOMASON</i>). Source: researcher work | 83 |
| 3.5 | Comparative analysis of each urban model <i>advantage</i> according to <i>Michael Batty Classification</i> . Source: researcher work | 85 |
| 3.6 | Comparative analysis of each urban model <i>limitation</i> according to <i>Michael Batty Classification</i> . Source: researcher work | 86 |
| 4.1 | Indicating changes in each buffer zone during the first period (between 1990 to 2003) for the <i>GCMA</i> study area. Source: [32] | 94 |
| 4.2 | Indicating changes in each buffer zone during the second period (between 2003 to 2005) for the <i>GCMA</i> study area. Source: [32] | 94 |
| 4.3 | Changes from <i>Agriculture</i> to <i>Built-up</i> (from 1990 to 2003) in the <i>GCMA</i> study area. Source:[32] | 95 |
| 4.4 | Changes from <i>Agriculture</i> to <i>Built-up</i> (from 2003 to 2005) in the <i>GCMA</i> study area. Source:[32] | 95 |
| 4.5 | Converted areas matrix (<i>hectare</i>) for the <i>Qazvin</i> province between (1990-2010). Source:[12] | 97 |
| 4.6 | The agricultural land use conversion between 1990 and 2010 based on distance from roads network (<i>Pixel</i>). Source:[12] | 97 |
| 4.7 | <i>Landscape Metrics</i> and their ecological characteristics. Source:[93] | 100 |
| 4.8 | Highway density between 1990 and 2010 for the <i>Hang-Jia-Hu Plain</i> . Source:[93] | 101 |