

Contents

1	Introduction	1
1.1	Law of Diminishing Returns	1
1.2	Intensive Land Use	4
1.3	Intensive Growth	5
1.4	The IV Proposal	7
	References	9
2	The IV Theory	11
2.1	IV	11
2.2	Models of IV Theory	12
2.3	IV Hypotheses	15
2.4	Intensive IV Functions	16
2.5	IV Curve	17
	References	20
3	IV Methodology	21
3.1	Parameter Estimation for IV Function	21
3.2	Resource Condition Suitability Assessment	24
3.3	Technological Advance Intensity Estimation	27
3.4	Resource Structure and Distribution Optimization Parameter Calculation	30
3.4.1	Resource Structure Parameter Calculation	30
3.4.2	Distribution Optimization Parameter Calculation	31
3.4.3	Time Change Parameter Calculation	32
	References	33
4	Computing Tools	35
4.1	Excel-Based IV Computing Tool	35
4.2	GIS-Based IV Computing Tool	36
4.2.1	Introduction	36
4.2.2	Design	36
4.2.3	Features	37
	References	42

5 Intensive Evaluation of Regional Land Use 43

5.1 Data and Pre-processing 43

5.2 Evaluation Units and Indicator Selection 44

5.3 Indicator Calculation 45

5.3.1 Resource Condition Suitability Assessment 45

5.3.2 Technological Advances 48

5.3.3 Other Indicators used in the Model 48

5.4 IV Model Fitting 52

5.5 IV Analysis 53

5.6 Summary 61

Reference 62

6 Intensive Evaluation of Urban Land Use. 63

6.1 Data and Pre-processing 63

6.2 Evaluation Unit and Indicator Selection 64

6.3 Indicator Calculation 64

6.3.1 Resource Condition Suitability Assessment 64

6.3.2 Technological Advances 66

6.3.3 Other Relevant Indicators. 67

6.4 IV Model Fitting 68

6.5 IV Analysis 69

6.6 Summary 71

7 Conclusion and Outlook 73

7.1 Conclusion 73

7.2 Outlook 75

References 77

About the Author 79