

Japanese Urban System

by

YUJI MURAYAMA

*Institute of Geoscience,
University of Tsukuba, Japan*

with collaborations by

Takashi Inoue

*College of Economics,
Aoyama Gakuin University, Japan*

and

Yuichi Hashimoto

*Faculty of Letters,
Hokkaido University, Japan*



KLUWER ACADEMIC PUBLISHERS
DORDRECHT / BOSTON / LONDON

CONTENTS

Preface	v
List of figures	xiii
List of tables	xvii
List of photos	xix

PART I INTRODUCTION

Overview	3
Chapter 1 Study of Urban Systems: Outcomes and Issues	9
<i>Yuji Murayama</i>	
1.1. Introduction	9
1.2. Research Emphasizing the Spatial Order of Nodes	10
1.2.1. Distribution Patterns	10
1.2.2. Distribution of City Size	11
1.2.3. The Urban Dimension	13
1.3. Research Incorporating Linkages (Interurban Relationships)	15
1.3.1. Interurban Flow and Nodal Functional Structures	15
1.3.2. Interurban Linkages from the Perspective of Business Activities	16
1.3.3. Interurban Diffusion of Innovation	18
1.3.4. Interurban Spread of Economic Fluctuation	20
1.4. Research on International and Global Urban System	20
1.4.1. Background of Development	20
1.4.2. World Cities as System Elements: Characteristics and Functions	21
1.4.3. Classification of World Cities	22
1.4.4. Interurban Relationships	23
1.5. Problems Associated with Analytical Operations in Research	24
1.6. Topics for Future Research	25

PART II INTERNATIONAL URBAN SYSTEM

Chapter 2 Diffusion of Innovation	37
--	-----------

Yuji Murayama

2.1. Introduction	37
2.2. Index of Analysis	38
2.3. The Process of Spatial Diffusion of Lions Clubs	40
2.3.1. International Urban System	40
2.3.2. National Urban System	44
2.3.3. Regional Urban System	52
2.4. Conclusion	55

Chapter 3 Development Process of the East Asian Urban System 59

Yuji Murayama

3.1. Introduction	59
3.2. Changes in Nodes	61
3.2.1. Growth of the East Asian Mega-Cities	61
3.2.2. Intensification of Primacy	66
3.3. Changes in Linkages	67
3.3.1. Inter-Nation Level	67
3.3.2. Interurban Level	71
3.4. Driving Forces of Urban System Change	81
3.4.1. The Activities of Multinational Corporations	81
3.4.2. Domestic and International Migration	83
3.5. Development Process of the East Asian Urban System	91
3.6. Conclusion	95

PART III NATIONAL URBAN SYSTEM

Chapter 4 Regional Structure of the Information Flow 101

Yuji Murayama

4.1. Introduction	101
4.2. Data and Methods	101
4.3. Spatial Flow Patterns	102
4.3.1. Ratio of Calls within a Region	102
4.3.2. Greatest Flow of Telephone Communications	104
4.3.3. Second Greatest Flow of Telephone Communications	108
4.4. The Hierarchical Structure of Telephone Message Areas	110
4.5. Conclusion	112

Chapter 5 Regional Structure of the Commodity Flow 115

Yuji Murayama

5.1. Introduction	115
5.2. The Structure of Regional Commodity Flow Patterns	119
5.3. Regional Socio-Economic Structure	124
5.4. Relationship between Regional Commodity Flow Patterns and Regional Characteristics (Socio-Economic Attributes and Proximity)	128
5.5. Conclusion	131

Chapter 6 Accessibility Change in the Japanese Urban System 135

Yuji Murayama

6.1. Introduction	135
6.2. Development of Japanese Rail Transportation	135
6.3. Methodology	137
6.4. Expansion of the Railway Network and the Reduction of Travel Time	137
6.5. Change in the Accessibility Space	142
6.6. Changes in Japanese Urban System	146
6.7. Conclusion	151

Chapter 7 Spatial Dynamics of Migration in the Japanese Urban System 155

Yuji Murayama

7.1. Introduction	155
7.2. Transition of Migration Patterns in Japan	155
7.3. Change in the Spatial Migration Pattern	159
7.4. Change in the Spatial Net-Migration Pattern	163
7.4.1. The First Period: 1957	165
7.4.2. The Second Period: 1969	165
7.4.3. The Third Period: 1979	168
7.4.4. The Fourth Period: 1985	168
7.5. Conclusion	168

PART IV REGIONAL URBAN SYSTEM

Chapter 8 Population Movement 173

Yuji Murayama and Yuichi Hashimoto

8.1. Introduction	173
8.2. Study Area and Method	173
8.2.1. Materials and Description of the Region	173
8.2.2. In- and Out-Migration Patterns by to Gender and Age Groups	177
8.3. Population Movement by Age and Gender	183

8.3.1. Factoring the Destination Zones	184
8.3.2. Factoring the Origination Zones	186
8.3.3. Population Movement Patterns by Age and Gender	186
8.4. Basic Structure of Population Movement in the Nagoya Metropolitan Area	189
8.5. Conclusion	192

PART V INTRA-URBAN SYSTEM

Chapter 9 Commercial Activities in a Small City	199
--	------------

Yuji Murayama

9.1. Introduction	199
9.2. Motorization and Changes in Urban Structure	200
9.3. The Decline of CCDs and Development of Exurban Retail Areas	203
9.4. A Case Study of Hitachiota City	204
9.5. Conclusion: Toward the Sustainable Development of Central Commercial Districts	206

Chapter 10 Migration Chain in a Medium City	209
--	------------

Yuji Murayama, Takashi Inoue, and Yuichi Hashimoto

10.1. Introduction	209
10.1.1. Previous Research and Purpose	209
10.1.2. Study Area and Materials	210
10.2. Methodology	211
10.2.1. Unit Regions	211
10.2.2. Migration Chain Units	214
10.2.3. Creation of a Geographical Matrix	215
10.2.4. Standardizing the Matrix	216
10.2.5. Calculating Factor Loadings	217
10.3. Results of the Analysis	218
10.3.1. Factor I	218
10.3.2. Factor II	221
10.3.3. Factor III	222
10.3.4. Factor IV	222
10.3.5. Factors V and VI	222
10.4. Discussion: Life-Course Patterns	223
10.5. Conclusion	224

Chapter 11 Land Use Change in Tokyo 227*Yuji Murayama*

- 11.1. Introduction 227
- 11.2. Changes in Land Use Patterns from 1974 to 1984 228
- 11.3. Estimation of 1994 Land Use Patterns Using Markov Chain Model 229
- 11.4. Land Use Patterns by Distance-Zone 234

Chapter 12 Tokyo and Paris: Comparison of Urban Spatial Structure 237*Yuji Murayama*

- 12.1. Introduction 237
- 12.2. Framework of Analysis and Study Areas 237
- 12.3. Spatial Distribution of Population Characteristics 239
 - 12.3.1. Population Density 240
 - 12.3.2. Ratio of Daytime to Nighttime Population (15 Years Old and Over) 240
 - 12.3.3. Residential Characteristics 243
- 12.4. Changes in Spatial Patterns per Distance-Zone 246
 - 12.4.1. Population Change 246
 - 12.4.2. Ratio of Infant-Toddler Population 247
 - 12.4.3. Ratio of Elderly Population 247
 - 12.4.4. Ratio of Foreign Population 250
 - 12.4.5. Employment Ratio 250
 - 12.4.6. Unemployment Rate 251
 - 12.4.7. Number of Persons per Household 252
 - 12.4.8. Ratio of Single-Person Households 254
- 12.5. Changes in Urban Spatial Structure 254
- 12.6. Conclusion 256

PART VI CONCLUSION**Chapter 13 Changing Japanese Urban System** 263*Yuji Murayama*

- 13.1. Development of the Japanese Urban System 263
- 13.2. Characteristics of the Japanese Urban System and Future Trends 265
- 13.3. Characteristics of the Japanese Intra-Urban System 266

INDEX