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Internal Migration in the Countries of Asia

A Cross-national Comparison

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ISBN 978-3-030-44009-1 ISBN 978-3-030-44010-7 (eBook)
<https://doi.org/10.1007/978-3-030-44010-7>

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The registered company address is: Gewerbestrasse 11, 6330 Cham, Switzerland

Foreword

This edited book examines the spatial patterns of internal migration across 15 countries in Asia. Why is this important? Rather little has been written about internal migration in Asia outside of the countries of East Asia (China, Japan and Korea). It is important to broaden the evidence base for describing internal migration across the world's most populous continent. Analyses of internal migration to date, although they may be excellent, are very difficult to compare because of varying definitions, measures and spatial and temporal extents. What is needed is a common framework of theory about the processes of internal migration and its measurement using indicators that can be compared. This book supplies those theories and comparable measures of internal migration. As an edited book with chapters by experts on the internal migration history of their countries, the key role of the national context and various shocks to national systems can also be distinguished.

The book is the product of the editors' grand ambition: to ensure that internal migration can be measured and reported in a robust way. Achievement of this aim will enable internal migration to join, alongside mortality, fertility and international migration, the collections of demographic statistics that are so influential in understanding global challenges. Internal migration has long been the "Cinderella"¹ among the demographic components of change. This book is a major step in taking internal migration to the demographic "ball".

Why has it taken so long for this kind of rigorous comparison of internal migration to come to fruition? Demographers had long been aware that the spatial systems used to capture internal migration produce measures that are dependent on the number, size and shape of the territorial units. This has been termed the *modifiable areal unit problem* (MAUP) investigated thoroughly by Stan Openshaw in his 1983 monograph. The lead editor, Martin Bell, saw that methods were needed to correct internal migration for the effect of the MAUP. Collaborating with an international team in a succession of projects since the late 1990s, Martin and his colleagues

¹The Cinderella narrative is a global story with Greek and Chinese origins and versions in many different cultures (Wikipedia 2019: <https://en.wikipedia.org/wiki/Cinderella>).

developed the methods to confront the MAUP and develop indicators that treated most of its symptoms. Initial collaborations with Philip Rees, John Stillwell and Paul Boyle (all British researchers) in comparisons of internal migration between Australia and the UK led to the foundation paper (Bell et al. 2002) that developed a framework for measuring internal migration. The opportunity to operationalise this framework came via an Australian Research Council grant to implement the project Internal Migration Around the Globe (<https://imageproject.com.au>). This project involved each of the book editors, together with Polish colleagues Marek Kupiszewski and Dorota Kupiszewska, John Stillwell and Kostas Daras (UK-based) and Philipp Ueffing in Brisbane. Kostas Daras, working with John Stillwell, Philip Ueffing and Martin Bell, wrote the sophisticated software (IMAGE Studio) that enabled the team to compute indices systematically at different spatial scales and for any one scale to compute indices for numerous different areal configurations. Kostas Daras studied at Newcastle for his doctorate on zone design with Serafeim Alvanides, whose dissertation had been supervised by Stan Openshaw, thus linking the problem to its solution.

Edited books come in all sizes and shapes. Usually, they bring together insights from a team of authors on a topic, but the editors struggle to find the common or contradictory messages in the work because the analyses are not standardised. This book adopts the model of persuading authors to follow an agreed agenda so that results are comparable but to add their own understanding of specific country factors. So, you will find comparable tables, charts and migration flow plots in each of the book's country studies. In the last chapter of the book, the editors learn from the country authors what special factors have, from time to time, driven their country off the "belt and road" of the editors' specification of internal migration theory set out in Chap. 2.

Of course, the journey to global batteries of internal migration indicators in published international statistical collections continues. The challenge of solving the *modifiable temporal unit problem* (MTUP) remains. This problem is how to convert data sources which use different time frames (e.g. 1 year, 5 years, lifetime) in census and survey questions to a common metric. The IMAGE-Asia team may find the solution to this MTUP challenge, perhaps working with Daniel Courgeau, as they did in developing a measure of intensity that overcomes the MAUP problem. In the meantime, enjoy reading and learning about internal migration in Asian countries while Cinderella (internal migration) is at the ball.

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Philip Rees

Preface

This book explores the way in which internal migration, the propensity to change residence within national borders, varies among the countries of Asia. Such movements are of rising importance in the modern world. They are the primary mechanism shaping patterns of human settlement, an essential process adjusting labour supply to demand, and key to enabling individuals to achieve their goals and aspirations. As such, migration has relevance across a wide range of public policy. Despite this, much less attention has been given to understanding mobility within countries than has been accorded to international migration, especially in a comparative context. While there is a long-standing tradition of scholarship into population mobility in parts of Asia dating back to the 1970s, what has been lacking is a systematic approach that enables robust comparisons to be made between countries using reliable statistical measures. This book aims to achieve that goal by harnessing the repository of migration data, the analytical techniques and the statistical indicators developed as part of the IMAGE (Internal Migration Around the GloBE – <https://imageproject.com.au>) project. Key findings from the IMAGE project have been published in a series of methodological, thematic and regional papers. The unique contribution of this book lies in coupling the IMAGE metrics with local contextual knowledge in a systematic, structured approach to better understand the forces that shape mobility in individual country settings across the length and breadth of Asia.

The book had its genesis in a proposal outlined at the Asian Demographic Research Institute (ADRI) in mid-2017, which envisaged a collaborative project extending the IMAGE project across the Asian region. The proposal had two key objectives: first, to draw on the knowledge of individual country experts to better interpret the IMAGE measures of migration and, second, to enhance training across the region in the quantitative analysis of internal migration data. Potential participants from some 20 countries were invited to collaborate and provided with a framework paper and relevant IMAGE migration metrics for their country. As a key step in the project, they were then invited to a 2-day workshop in Shanghai in mid-2018, funded by ADRI, to coincide with the 4th Conference of the Asian Population Association. Draft papers presented at the Shanghai workshop were

subsequently revised and refined, in close consultation with the editors, to deliver the 15 country-specific chapters now included in this book.

A project of this magnitude does not come to fruition without significant contributions from a wide range of sources. The editors are particularly grateful to the Asian Demographic Research Institute, which provided sustained encouragement and considerable financial support for contributors to attend the 2018 workshop and for travel to related meetings by the editors themselves. It is equally important to acknowledge funding support from the Australian Research Council under Discovery Project DP 110101363, through which the IMAGE project was undertaken over the period 2011–2015. Data used in the project were drawn from a range of sources, particularly the publications and datasets of national statistical agencies, but the editors are also pleased to acknowledge the contribution of the University of Minnesota IPUMS data repository, an invaluable resource for cross-national comparisons of this type. The IMAGE metrics themselves, which form the foundation for the work reported here, reflect the combined intellectual output of a number of redoubtable scholars. Of more immediate note have been the contributions of Dr. Chen Chen of ADRI who assisted with data preparation and analysis, Rosabella Borsellino who took care of graphic design and Michelle Burgess who copy-edited the manuscript. Finally, the editors would like to thank the authors who contributed the 15 country chapters, many of whom had limited prior experience in the analysis of population mobility.

Brisbane, QLD, Australia

Martin Bell

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Part I

The Framework

This book is framed around the models and measures of migration devised and developed in the IMAGE Project (Internal Migration Around the Globe). The three chapters that form this part of the book set out the aims, origins and key features of that project. This, in turn, provides the essential background needed to understand the approach adopted in the empirical analyses of migration in individual countries that are presented in Part II. Key elements encompassed in these three chapters include the dimensions of migration, the nature of migration data, theoretical concepts, and the indicators or metrics we employ to measure migration.

Chapter 1

IMAGE-Asia: An Introduction



Elin Charles-Edwards, Martin Bell, Aude Bernard, and Yu Zhu

1.1 Introduction

Migration is singular among demographic processes in its ability to transform the size, distribution and composition of national populations. The impact of migration on national settlement systems is likely to grow as more countries complete the demographic transition and migration becomes the principal agent of regional demographic change. Despite its significance, analysis of migration lags behind equivalent scholarship in fertility and mortality, particularly with respect to cross-national comparisons. Comparative analysis of demographic processes is important for several reasons: it reveals commonalities and highlights unusual trends; it enhances methodological rigour; it aids theorisation; it also provides a firm foundation for the formulation of urban and regional policy (Bell et al. 2002). Within the field of migration studies, internal migration, that is, the propensity to change residence within national borders, has been accorded less attention than international migration, especially in a comparative context. This dearth of analysis is surprising since movements within countries outnumber international movements by a factor of four to one. This edited book analyses the way in which internal migration varies between the countries of Asia drawing on a common analytic framework developed as part of the IMAGE Project (Comparing Internal Migration Around the

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GlobE – <https://imageproject.com.au>). By situating individual country analyses within a global setting, this book provides the first thorough understanding of how and why internal migration varies across the major regions of Asia.

With a total population of 4.5 billion, Asia is the largest and most populous continent in the world, home to more than three-fifths of the human population, hosting seven out of the 13 countries that have total populations over 100 million. In recent decades Asia has experienced rapid population growth and tremendous social and economic development; it is the largest continental economy by Gross Domestic Product (GDP) in Purchasing Power Parity (PPP) terms. Some of the longest economic booms in the world since the 1950s (notably those in Japan, the four Asian tigers of South Korea, Singapore, Hong Kong and Taiwan, and more recently in Mainland China) have taken place here, leading to profound socioeconomic transformations of societies, with internal migration an integral part of this process. However, economic development and social transformation have been very uneven and have been unfolding differently in individual ethnic, cultural and geographical settings, underpinned by considerable diversity in trends and patterns of internal migration. Clearly, the vast size of Asia in terms of both area and population, the enormous scale of recent socioeconomic changes, and its diversity in levels of development and contextual settings, make Asia an ideal and important setting for advancing research on internal migration. Given that large-scale internal migration is a more recent phenomenon in Asia, and that research on it is much less developed compared to that in other parts of the world, internal migration in the countries of Asia deserves concentrated attention.

While there is a long tradition of research on various forms of population mobility in Asia, evidence remains fragmented, reflecting a diversity of traditions in migration research with literature emanating from different disciplinary perspectives, and often focussed on particular issues or spatial settings. Comparative studies of internal migration are relatively few, but there have been a number of important contributions. Pryor (1979) undertook one of the earliest statistical comparisons of internal migration in Asia, examining moves within five countries: Thailand, Malaysia, Singapore, Indonesia and the Philippines. Among other things, the study underscored the primacy of the major metropolitan regions as migrant destinations, but also the role of state-sponsored development projects in channelling migration to the periphery of national settlement systems. Migration propensities were demonstrated to vary by age and other characteristics, with migrants typically younger and better educated than non-movers. While this work underscored the value of cross-national comparisons in identifying common patterns, it also highlighted the contingency of internal migration processes to different national settings, and the impact of data collection practices on findings. Pryor noted that migration patterns are ‘... essentially a reflection of their specific cultural and historical settings, their stage of modernisation and economic development, and the constraints and peculiarities of their census enumeration and processing procedures’ (Pryor 1979 p. 322). This work was followed in the early 1980s by a series of country monographs led by the United Nations Economic and Social Commission for Asia and the Pacific (ESCAP 1982). This programme of work explored the links between urbanisation and internal migration in a number of countries including Indonesia,

Malaysia, Pakistan, Philippines, Republic of Korea, Sri Lanka and Thailand. Findings confirmed the dominance of rural-to-urban migration throughout the countries of East and Southeast Asia, and variations in migrant selectivity by sex according to distance and purpose of move. In contrast, Skeldon's (1985) overview of internal migration in the countries of South Asia (Bangladesh, India, Nepal, Pakistan and Sri Lanka) identified rural-to-rural migration as the most significant migration stream, with short-distance moves most common and marriage a primary motivator. Skeldon also highlighted the importance of circular or temporary migration as a substitute for permanent flows, with 'bilocality' an important feature of the South Asian migration system.

The 1990s and 2000s were a relatively low point in comparative studies of internal migration in Asia, with academic attention instead directed towards understanding international flows (Hugo 2005). Since 2010, however, a number of volumes have emerged including the seminal work of Amrith (2011), which traced the historical evolution of Asian migration systems and White's (2016) *International Handbook of Migration and Population Distribution*, which included a contribution on Internal Migration in Asia (Charles-Edwards et al. 2016). An important recent volume by Fielding (2015) synthesised existing research and empirical evidence to explore contemporary migration systems in Northeast, East and Southeast Asia. Fielding revealed marked regional variations across Asia reflecting varying levels of development. Contemporary internal migration in Northeast Asia was found to be characterised by inter-urban and counter-urban flows, characteristic of later stages of development. In contrast, rural-to-urban flows remained the dominant feature of migration systems in East and Southeast Asia, accompanied by migration to frontier regions facilitated by large scale development programmes. Taken together, this body of work highlights considerable regional variation in internal migration patterns and processes across Asia, but significant gaps remain, with a dearth of quantitative analysis in many countries and little known about internal migration in the countries of central and western Asia. This book aims to address these deficits by drawing on the methods and techniques developed as part of the IMAGE project.

1.2 The IMAGE Project and the Dimensions of Migration

The IMAGE Project was a five-year international collaborative programme of research with core funding from the Australian Research Council Discovery Scheme (2010–2015) designed to explore the way internal migration varied between countries around the world. The project was organised around four modules: an *Inventory* of internal migration data collection practices; a *Repository* of internal migration data; a suite of robust *Migration metrics* that could be used to make reliable cross-national comparisons; and *the IMAGE Studio*, a suite of bespoke statistical software designed to implement the comparative measures and address one of the longstanding issues in migration analysis, the modifiable areal unit problem (MAUP).

The work of the IMAGE Project has been published in a series of thematic, methodological and regional papers. In terms of substantive emphasis, the distinctive feature of the Project was its identification of several discrete dimensions of migration, each of which, it was argued, provides a unique but complementary perspective on population movement. These are: migration intensity, which indicates the overall level of migration or propensity to move; age composition, which denotes the selective nature of migration (and emerges as a key factor moderating intensity); spatial impact, which measures the effect exerted by migration in transforming the pattern of human settlement; migration distance, which identifies the frictional effect of space on the propensity to move; and connectivity, which recognises the way in which migration serves to establish functional linkages between different parts of the settlement system. For this book, attention is focussed on the first three of these dimensions — migration intensity, age composition and spatial impact — since these have the greatest utility in understanding the marked differences in human population movement that exist between countries, the most value in building migration theory, and the most relevance to formulation of social and economic policy. It will be helpful to elaborate on the significance of these three dimensions.

1.2.1 Migration Intensity

Migration intensity captures the overall propensity to migrate within a population. It is extremely sensitive to the spatial scale at which migration is recorded, with the probability of moving inversely related to the size of the geographic units across which migration is measured. For this reason, the IMAGE Project adopted a measure of aggregate migration intensity that measures all changes of residential address. Early work by Long (1991) revealed significant variations in the aggregate migration rate across 14 countries, with one-year migration rates ranging from 6% in Ireland to 19% in New Zealand. The IMAGE project adopted new techniques that enabled this to be extended to 96 countries (Bell et al. 2015), underlining the massive variation that exists between countries. One-year migration rates varied from just 1% in Macedonia to 19% in Iceland, while migration rates measured over 5 years ranged from 5% in India to 55% in New Zealand. Comparisons within Asia (Charles-Edwards et al. 2019) have shown similar heterogeneity, with the highest mobility intensities measured over 5 years recorded in South Korea (53%) while the lowest aggregate migration intensity was in India, with just 5% of the population changing address over a five-year period.

How does one account for these variations? Explanations have been sought using both macro and micro-level approaches. The most common macro-level theory is found in the migration transition framework proposed by Zelinsky (1971), which suggests that migration intensity undergoes a systematic transition as countries progress in their economic and social development, driven partly by regional differences in economic opportunity. This initially gives rise to large rural-to-urban flows, followed by urban-to-urban flows as the urban transition comes to a close. In

super-advanced societies, migration intensities may start to decline from their peak as regional differences are ameliorated, and transport and communication technologies substitute for geographic mobility. Zelinsky's hypothesis of a mobility transition has been criticised as Eurocentric and time-bound (see e.g., Cadwallader 1993) but empirical work confirms clear associations between migration intensities and various indicators of development (Bell et al. 2015). Structural factors such as age composition (Bell et al. 2015) and the nature of housing markets have also been implicated (see e.g., Caldera-Sanchez and Andrews 2011). Micro-level approaches to comparative analysis of migration intensity have sought explanations by referring to migrant selectivity, housing adjustment and transitions in the life course. Bernard (2017) employed a cohort perspective to explore differences across 14 countries, demonstrating that age at first migration was a key indicator and that migration intensity was lower in countries in which the first move was delayed. The cumulative evidence suggests that cross-national differences are not a simple reflection of either macro or micro-level factors but are shaped by processes at both levels. Explanation for cross-national differences therefore ultimately needs to bridge these modes of explanation. Current thinking, as further discussed in Chap. 2, also underlines the importance of regional and local contexts in understanding the factors that trigger or inhibit migration.

1.2.2 Age at Migration

Age at migration is the second dimension of mobility explored in this volume. The selective nature of migration has long been established (Thomas 1938, 1958). In the 130 years since Ravenstein's seminal papers (Ravenstein 1885, 1889), the search for universal laws of migration has largely been abandoned, but solid empirical evidence points to a positive association between migration and income, education and occupational status, with further differences according to housing tenure and marital status. The most persistent regularities, however, are found in relation to age. Rogers and Castro (1981) showed that the age profile of migration displays a remarkably consistent shape through space, time and across spatial scale, characterised by a peak among young adults, with lower rates of movement at older ages and among teens, rising again among retirees, the elderly and the very young.

More recent work has revealed subtle but significant variations in key aspects of this profile, especially the age at which migration peaks, and the extent to which migratory activity is concentrated around that peak. Bernard et al. (2014a) proposed two measures to facilitate cross-national comparison of migration age profiles – age at peak and intensity of peak – and showed that together these measures capture two-thirds of the variance between countries. Applied to a global sample of 25 countries they revealed a striking regional pattern. Five countries in Asia (Malaysia, Vietnam, China, Nepal and Indonesia) formed a distinct cluster with migration strongly concentrated and peaking at younger ages than in industrialised countries or Latin America. Bernard et al. (2014b) sought to explain these variations by

reference to differences in the life course with key events occurring earlier and in more concentrated form in Asia than in other parts of the world. Is this same pattern replicated in other parts of Asia? As in the case of migration intensity, these findings point to the importance of understanding how contextual factors such as culture, religion and the level of economic development shape migration age profiles. In Chap. 2 we review the life-course framework and the way its proximate determinants, such as educational attainment and age at first marriage, are thought to shape the age profile in countries across the region. Chapter 3 explains the metrics that are used.

1.2.3 *Spatial Impact*

Spatial Impact is the third dimension of migration explored in this volume and is arguably the most significant aspect of population movement in terms of policy and planning. Spatial movements are of longstanding scholarly interest in Asia, primarily because of their role in the rapid urbanisation, which has accelerated across much of the region since the 1950s (ESCAP 1982; Pryor 1979). In practice, however, comparative studies have been hindered by differences in the classification of urban areas, and in the way migration data are collected, which effectively preclude clear identification of the role of migration in the urbanisation process. Following Rees and Kupiszewski (1999), the IMAGE project adopted an alternative approach to this problem by using regional population density as a proxy for the level of urbanisation and proposed a conceptual model with a trajectory linking migration to population density as development proceeds (Rees et al. 2017). We discuss this model in more detail in Chap. 2, explain its computational basis in Chap. 3, and then test its utility in subsequent chapters.

As Fielding (2015) points out, however, internal migration in the countries of Asia has been driven by a variety of forces including resource development, defence, government policies and natural disasters, not just the attraction wrought by burgeoning primate cities. Moreover, redistribution of population involves a complex web of migration flows and counter-flows. As with other dimensions of population movement, understanding these migratory streams requires close consideration of the socio-political context in which migration occurs. We use maps and circular plots to visualise the impact of these flows, but reliable cross-national comparisons ultimately call for robust metrics that capture the scale and spatial impact of these movements. For this we report the Aggregate Net Migration Rate (*ANMR*) and show how this is ultimately shaped by the interaction between migration intensity and migration effectiveness, the latter capturing the balance between internal migration flows and counter-flows.

The three dimensions of internal migration discussed above form the foundation for the exploration of internal migration in the 15 countries of Asia presented in this book. The IMAGE project made significant advances in development of metrics to facilitate empirical cross-national comparisons across multiple dimensions of migration. Statistical indicators provide the essential framework against which to situate the scale, composition and patterns of migration, but interpretation of the

dynamics, causes and consequences of such movements calls for a nuanced understanding of the context within which this mobility occurs. To echo the views advanced by Pryor (1979), there is a clear and pressing need to view quantitative metrics against the backdrop of each nation's geography and history, having close regard for its economic, socio-cultural and political setting. Only by coupling robust metrics with a well-founded appreciation of the forces that shape migration is it possible to simultaneously understand population movements within a country and to make credible comparisons with those in other nations. This book represents an explicit attempt to achieve this goal by coupling the empirical framework established by the IMAGE Project with the in-depth knowledge supplied by scholars with country-specific expertise. In this way, the objective is to provide systematic new insights into the patterns and drivers of internal migration in the countries of Asia.

1.3 IMAGE-Asia

The programme of research underpinning this book, IMAGE-Asia, began in 2017 with discussions between scholars at the University of Queensland and the Asian Demographic Research Institute (ADRI) at Shanghai University. The aim of the project was to enhance substantive understanding of internal migration across the countries of Asia and generate new insights into internal migration processes. To borrow from the language of Graeme Hugo (1975 p. 25), 'conducting cross-national comparative research is ultimately the art of the possible', and there were a number of obstacles to overcome. Most fundamental was access to internal migration data at the geographic scale needed to generate comparative metrics of intensity, age and spatial impact. Such data are generally accessible in the countries of East, Southeast and South Asia but less readily available moving westward into Central and Western Asia. There is a similar gradient in the depth of expertise and scholarship on internal migration across the continent. Another impediment was the recruitment of scholars with a thorough understanding of both the dynamics and drivers of internal migration in each country, who were also comfortable with the approach laid out by the editors. As discussed further below, this approach involved adopting a clearly defined structure with discrete sections devoted to the national setting, a review of the available data, a summary of prior research and a systematic discussion and interpretation of migration focussing on the three dimensions previously outlined. To assist with this task, authors of each of the country chapters were provided with a series of analytic outputs capturing migration intensity, age at migration and spatial impact, computed centrally at the University of Queensland and at ADRI using the IMAGE Studio. Maps of net migration and circular plots depicting inter-regional flows for each country were also made available. At the same time, contributors were also encouraged to incorporate information from other country-specific sources of migration data such as national surveys. A key phase in the research programme was a two-day workshop held at Shanghai University in July 2018, funded by the ADRI. Scholars from 20 countries were invited to attend and to present first