Chapter 17
Behavioral Changes in Migration Associated with Jobs, Residences, and Family Life

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Abstract This chapter first explores migration-related urban issues and then illustrates migration dynamics. It further points out the limitations of existing migration theories. To overcome the shortcomings of existing theories, this chapter presents a new analysis framework for migration, where multiple life choices, including migration, are simultaneously incorporated by expanding the theory of planned behavior. To empirically confirm the applicability of the new framework, a web-based questionnaire survey about migration associated with employment, dwellings and child rearing was implemented in Japan in 2015. This is the first study to reveal such interrelated behavioral changes in multiple life domains from the perspective of decision-making process. Such a theoretical reformulation could provide more scientific insights into cross-sectoral policies of migration than existing theories.

Keywords Migration dynamics · Microlevel theory · Life course · Mobility biographies · Behavioral changes · Behavioral interdependencies · Theory of planned behavior · Japan

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17.1 Migration-Related Urban Issues

Migration has always been a fundamental component of human history (Lee 1966; Kniveton et al. 2011) and has been studied in various disciplines such as regional economics, demography, sociology, and geography (Chi and Voss 2005). People migrate for various reasons (e.g., work, study, and marriage) from village to village, from village to city, from city to city, and from country to country, while the outcomes of migration may be either prosperity or misery for people and/or for society. An examination of global urban development practices suggests that cities with various population sizes can be economically prosperous. However, cities of different sizes may need to achieve sustainable development in different ways, and migration is clearly a major factor in determining city size. In reality, various optimal/ideal city sizes may be possible depending on how the notion of "optimal" or "ideal" is defined. This book describes people's life choices at the individual/household level. Migration that is optimal or ideal for an individual or a household is not necessarily so for society. As stated in Chi and Voss (2005), "migration is a large concern for policy makers because flows of population can significantly affect local political, social, economic, and ecological structures for both sending and receiving areas (p. 11)."

According to Globalization101.org (2013), flows of goods and capital across countries have driven globalization, which has stimulated international migration. Currently, international migrants account for about 3 % of the world's population and would form a country with the world's fifth largest population if they all lived in the same place. The main motivation for international migration is economic factors, and other motivations come from civil strife, war, and political and religious persecution as well as environmental problems (e.g., natural disasters). At the national level, overconcentration of populations in many megacities across the world (e.g., Tokyo, Jakarta, Manila, Seoul, Shanghai, Karachi, Beijing, New York, Mexico City, Mumbai, and New Delhi) has caused various urban development and social issues. In Japan, as an Asian model of a prosperous country, the majority of young people have continued to migrate for work and residence from small cities to the three metropolitan areas (Tokyo, Osaka and Nagoya regions), where around half of the nation's population is now concentrated. As a result, many small cities in Japan now face serious population issues, for example, an ever-increasing proportion of elderly people, difficulties in ensuring mobility for elderly people, and insufficient support for child rearing and women's labor participation. It is predicted that many of these small cities will disappear in future if their current situations cannot be improved.

Similar issues to those caused by migration in Japan can be observed in other developed countries. Smith and Sage (2014) found that the long-distance movement of young adults is a leading cause of demographic and population changes in England and Wales. Muilu and Rusanen (2003) showed empirically that without the support of the young population, small areas, especially remote rural areas, cannot remain viable or maintain their economic functions in the long term. Thissen et al. (2010) argued that "together with the ageing of the European

population, youth migration related to the transition from secondary to higher education is increasingly responsible for the declining numbers of young people in rural areas (p. 435)." Using 1970–2000 US Census data, Chen and Rosenthal (2008) revealed that young and highly educated households, especially highly educated couples, are more likely to move to cities with higher quality business environments. Thissen et al. (2010) found that local attachments appear to be the most important factor explaining youths' migration intentions. Other factors include their social background, migration history, and perceptions of employment opportunities, even though there are obvious regional differences caused by the structure, culture, and landscape of the regions. Ek et al. (2008) reported that if living conditions (educational and vocational opportunities) could not be improved and psychosocial resources (lack of social support, passive coping strategies, and greater pessimism) of young adults in rural and remote areas of Northern Finland could not be enhanced, young adults would continue to out-migrate to cities. Interestingly, Vilhelmson and Thulin (2013) found that most young adults in Sweden have integrated the Internet into their migration decision-making processes—from the formation of vague plans and thoughts, to more active plans and actual moves. The Internet reinforces many recent movers' migration motives and intentions, and facilitates their decisions to move and choices of destinations. On the other hand, the counter-urbanization phenomenon has been observed in some European countries. Bijker et al. (2012) found that people in the north of the Netherlands who migrated to less popular rural areas were mainly young; many of them were employed and highly educated, most of them had simply returned to their original rural areas, and only a small percentage had moved from urban areas. Bijker et al. concluded that the migrants in their study were most similar to the migrants to the fringe areas of Denmark.

Out-migration by young people to cities is also common in developing countries. Childs et al. (2014) revealed that communities that had thrived for centuries in Nepal's rugged mountain environments are facing rapid population declines caused by the out-migration of youth, and this posed a potential long-term threat to agricultural production, the family-based care system for the elderly, socioeconomic inequalities, and human capital. In China, the total number of young adults moving from rural to urban areas reached 153 million in 2010, and accounted for about 30 % of total rural labor.[1] Furthermore, the accelerated rural depopulation driven by the vast and increasing out-migration of young labor has imposed huge obstacles to improving land use efficiency and coordinating urban–rural development in China, such as low efficiency in rural residential land use, and the lateral expansion of rural dwellings at the expense of farmland loss, decrease in the ability of rural development, and deterioration of rural residential environments (Liu and Liu 2010; Li et al. 2014). Jiang et al. (2015) found that under China's Urbanization Plan 2014–2020,

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[1]Ministry of Human Resources and Social Security (2011) Human Resources and Social Security Undertakings Statistical Bulletin of 2010 (in Chinese; http://w1.mohrss.gov.cn/gb/zwxx/2011-05/24/content_391125.htm).

under which the uniquely Chinese household registration (*hukou*[2]) system will be gradually abolished, about 40 % of rural migrant workers stated that they would choose to live in a city. If this were the case, a dramatic increase in energy consumption by rural migrants could be expected, especially if their social security and housing issues could be properly resolved through the *hukou* reforms. About 60 % of the respondents in the study by Jiang et al. were young workers from rural areas, and more focused insights into those young workers could be derived from that study. Crivello (2015) examined young Peruvians' aspirations and the role of migration in their imagined futures and concluded that aspirations are about much more than abstract "futures;" aspirations determine young Peruvians' actions in the present and to a large extent can explain their current realities. Nugin (2014) argued that young people's out-migration from the rural areas in Estonia should be depicted as moving "forward" rather than "away;" however, this does not necessarily mean that they would never go back home, considering the constantly changing rural context in post-socialist Estonia. Nugin concluded that one of the additional options for rural areas to survive is to attract young people from other areas with the appeal of change and self-realization in a small community.

17.2 Migration Dynamics

17.2.1 General Descriptions

Various theories have been proposed for and applied to migration in various disciplines, including macrolevel, mesolevel, and microlevel theories. As summarized well by Hagen-Zanker (2008), major macrolevel theories include neoclassical macromigration theory, dual labor market theory, and world systems theory. Mesolevel theories include social capital theory, institutional theory, network theory, and the new economics of labor migration. Microlevel theories include Lee's push–pull theory, neoclassical micromigration theory, behavioral models, and the theory of social systems. Macrolevel theories emphasize the role of macrolevel economic and social factors in migration (e.g., Massey et al. 1993; Groenewold et al. 2012). As long as a behavior changes over time, it is desirable to understand it in a dynamic fashion. Migration is not invariant over time (Kennan and Walker 2013). For example, at the macrolevel, Castles (2010) proposed to capture migration within the wider phenomena of social change and social transformation, arguing that migration is also part of national and global social change. However, previous studies revealed that economic and social factors cannot fully explain why

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[2]The traditional *hukou* system means that city residents' rights to public services depend on whether or not they have a *hukou*. As most rural migrants do not have a city *hukou*, they receive unequal access to urban public services, consequently discouraging them from permanently residing in cities.

people migrate, and they have consequently emphasized the importance of considering microlevel factors such as individual expectations, values, beliefs, and personality traits (e.g., Boneva and Frieze 2001; Tabor and Milfont 2011; Van Dalen and Henkens 2012, 2013). Kennan and Walker (2013) formulated a dynamic programming-based migration behavior model, which represents decisions of migration locations over time by defining transition probabilities from one location to another. They estimated a model using the National Longitudinal Study of Youth in the USA, and found that expected income and home location are important determinants of migration decisions. Mesolevel theories are developed to incorporate the influence of collectives and social networks on migration at the household or community level. Related to this, another dynamic feature of migration is reflected in the phenomenon of chain migration, which consists of three stages: (1) pioneer migration, (2) labor migration, and (3) family migration (MacDonald and MacDonald 1964). As stated by Haug (2012), pioneer migration usually involves quick decisions on the migration destination and job hunting, with exceptionally high costs and risks. Once pioneer migrants have settled, more workers from home may be attracted because of the transfer of social capital (i.e., labor migration). After that, family reunification becomes feasible in the third stage. Such chain migration can be modeled as a diffusion process (i.e., an S-shaped curve) and it is maintained on the basis of social networks. As for the connections across the three levels, Haug (2012) on the basis of a literature review stated that "the migration decision-making of individual actors (microlevel) is embedded in social contexts (mesolevel) and is based on underlying macro-structural conditions."

As argued by King (2012), "migration is not always, by any means, a one-off event which ends in settlement, but an ongoing process that is reevaluated several times over the life-course." Thus, even though a life course perspective is crucial for migration decisions, limited studies of young adults' decisions can be found in the literature. Chatterjee and Scheiner (2015) presented an excellent review of the application of life-course approaches to travel behavior (often labelled "mobility biographies"), including migration in general. Scheiner's research group conducted a retrospective survey about residential biographies, travel behavior, and holiday trips, and employment biographies with respect to students (954 people) of TU Dortmund University, and their parents (1787 people) and grandparents (1294 people) (Albrecht et al. 2015; Doering et al. 2015). The survey was conducted every term from 2007 to 2012. Albrecht et al. (2015) and Doering et al. (2015) made an initial attempt to reveal intergenerational socialization effects with respect to migration and work trip mobility.

17.2.2 A Case Study Based on the Life-Course Approach

Using data from a life history survey (1400 people) conducted in Japan in 2010 (Zhang et al. 2014), as explained in Chap. 2 of this book, we extracted 1770 samples from young adults (number of people * times migrated) for this case study.

"Young adults" in Japan refers to the population aged from 15 to 34 years old.[3] There were 393, 671, and 706 young adults in the 1980s, 1990s, and 2000s, respectively, who moved from their original places of residence to new ones. It is found[4] that while the proportion of total migrants going to large cities in Japan rose from 28 % in the 1980s to 32 % in 2000s, migration to medium-sized cities remained almost unchanged; however, migration into small cities dropped from 35 % in the 1980s to 30 % in the 2000s.

Based on the above 1770 samples, Xiong et al. (2016) revealed more complicated migration patterns.

As for the overall sample, there were more young adult females who migrated to small cities: 5.99 % from large cities (males: 4.49 %), 5.88 % from medium-sized cities (males: 2.99 %), and 26.53 % from small cities (males: 22.21 %). As for adult males, more migration within large cities (22.90 %) and within medium-sized cities (24.97 %) was observed. It is further shown that 10.65 % of females moved from small to large cities, which is about four percentage points higher than the figure for adult males. In total, more adult males preferred relocation to medium or large cities (4.03 % points higher in large cities and 4.69 % points higher in medium-sized cities than the figure for females), but more females moved to small cities (about 8.71 % points more than males).

The 1990s generation preferred relocation within small cities (26.68 %), but not relocation within medium-sized cities (19.82 %), compared with the 1980s and 2000s generations. Relocation to large cities grew over time (27.47 % in the 1980s, 29.21 % in the 1990s, and 32.01 % in the 2000s). In contrast, relocation to small cities saw a peak in the 1990s (35.36 % in the 1980s, 37.71 % in the 1990s, and 30.03 % in the 2000s), but the drop from the 1990s to the 2000s was much more remarkable than the increase from the 1980s to the 1990s. Conversely, we observed a dip of relocation to medium-sized cities in the 1990s, but this recovered almost to the same level as the 1980s.

Furthermore, young adults' residential relocation choices differ in response to life events such as changes in household structure, workplace, and car ownership within the previous five-year period, or in anticipation of such events in the subsequent five-year period. Specifically, this occurs if household structure changes during the previous or subsequent five years are associated with a preference among older young adults to live in large cities instead of medium-sized and small cities. When they had changed their place of employment within the previous five years or planned to do so in the subsequent five years, younger adults relocated to large cities. However, if they changed their car ownership status within that period, they had a lower probability of relocating to large cities.

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[3]Statistics Bureau of Japan: http://www.stat.go.jp/english/data/nenkan/1431-02.htm.

[4]Here, Tokyo, Yokohama, Osaka, and Nagoya are treated as large cities (each has a population of more than 2.0 million). Sapporo, Sendai, Saitama, Kawasaki, Kyoto, Kobe, Hiroshima, and Fukuoka cities are grouped into medium-sized cities (each has a population of over 1.0 million). The remaining cities (170 cities were included in the survey) are classified as small cities.

By incorporating the effects of life events, changes in quality of life-oriented living environment (including residential environment) characteristics at the city level, as well as household attributes and sociodemographics of young adults in Japan, Xiong et al. (2016) estimated a residential relocation choice model without the property of independence of irrelevant alternatives. Their model confirmed that there were clear differences in relocation decisions across generations of young male and female adults, diverse influences of a variety of living environment attributes, and varied influences of state dependence and future expectations of different types of cities. Choice of residential location and/or workplace is a matter for an individual and/or a household. It may be associated with factors such as marriage and child rearing, or use of free time. It is true that having a job is to make a living. However, without a better environment in which to enjoy life, policies that focus only on employment will eventually fail. With such considerations, the above migration behavior analysis should be improved by incorporating the influence of other aspects of life.

17.3 Behavioral Changes Across Life Domains: A New Way of Thinking

Most of the above migration theories and models deal with migration decisions by referring to behavioral outcomes that supposedly reveal people's preferences; however, the internal processes underlying behavioral outcomes are ignored. For this purpose, methodologies that examine behavioral changes are useful, including behavioral change stage models (Prochaska and DiClemente 1983; Prochaska and Velicer 1997), the theory of planned behavior (TIB) (Triandis 1977). Prochaska and DiClemente (1983) and Prochaska and Velicer (1997) argue that health behavior change involves progress through six stages of change: (1) precontemplation (no intention to take action within the next six months), (2) contemplation (the intention to take action within the next six months), (3) preparation (intention to take action within the next 30 days, and some behavioral steps have been taken in this direction), (4) action (changed overt behavior for less than six months), (5) maintenance (changed overt behavior for six months or more), and (6) termination (no temptation to relapse and 100 % confidence). Both the theory of planned behavior and the theory of interpersonal behavior emphasize the importance of attitudes, social norms, and intentions, while the latter further argues that habits cannot be ignored. Studies based on the above theories/models have been conducted to investigate various forms of behavior, such as energy consumption (e.g., Nachreiner et al. 2015; Chen 2016), environmental behavior (e.g., Botetzagias et al. 2015; De Leeuw et al. 2015), travel (e.g., Bamberg 2013; Rowe et al. 2016), purchase of green products (e.g., Yazdanpanah and Forouzani 2015; Paul et al. 2016), behavior concerning fertility (e.g., Mencarini et al. 2015), child rearing (e.g., Guo et al. 2016), and tourism (e.g., Han 2015).

17.3.1 Limitations of Existing Theories

As described in Sect. 17.2.1, previous studies have developed various methodologies to examine migration at the macro-, meso-, and microlevels, in which various factors are assumed to affect migration decisions. The factors assumed to exist in these theories may all work to explain migration decisions; however, we argue that migration decisions are, after all, a matter for an individual or a household. Especially in policymaking, it is necessary to understand not only the results of migration (e.g., where people actually moved), but also the process of migration decisions. For example, in Japan, the central government has sought to encourage more people to migrate into local cities from the three megacities (Tokyo, Nagoya, and Osaka) by adopting various policies. However, the resistance to migrating to local cities is remarkable. Therefore, it is important to understand how to encourage people's behavioral changes in migration.

In line with the above considerations, Hoppe and Fujishiro (2015) applied the theory of planned behavior to predict migration decisions by making use of potential migrants' expectations and attitudes toward migration and careers (i.e., the anticipated job benefits of migration, and career aspirations) as well as beliefs. The decision-making was conceptualized as having three phases: the predecisional, preactional, and actional phases. The predecisional phase corresponds with intentions, the preactional phase starts with exploring options for migrating by gathering information, and the actional phase involves definite actions for the move (e.g., making logistical arrangements). Such phases follow the basic idea of Prochaska and DiClemente (1983), Prochaska and Velicer (1997). Hoppe and Fujishiro (2015) found that respondents are motivated to migrate, not only by the expectation of finding a job, but also by the opportunity to advance their careers. However, they could not find any interaction between the anticipated job benefits (of migration) and career aspirations. The study by Hoppe and Fujishiro (2015) concluded that it is necessary to combine the theory of planned behavior with the behavioral change stage model for a better understanding of migration. Using the National Longitudinal Study of Youth in the USA, Liu et al. (2010), based on a dynamic econometric model with self-selection, found that children's educational outcomes are affected by migration and maternal employment after controlling for the possible endogeneity of relevant decisions. In the context of international migration, Groenewold et al. (2012) revealed a significant influence of perceptions (threat to living conditions, benefits of and barriers to migration), cues to action, and self-efficacy on migration intentions. Interestingly, Kniveton et al. (2011) integrated the insights of the theory of planned behavior into an agent-based model to quantify the numbers of migrants generated by changes in climate. Such efforts of cleverly utilizing agent-based models created a new way to apply the theory of planned behavior in practice.

As for theories of behavioral changes, we point out that there are serious drawbacks, considering the fact that all existing studies, to the best of our knowledge, have focused on only a single form of behavior, such as environmental behavior,

travel, or fertility behavior. If a change in a behavior is constrained by other behaviors, how can existing theories of behavioral changes be applied? For example, environmental attitudes and relevant social norms may not only influence the intention to change from commuting by car to using mass transit systems, but may also affect intentions to introduce energy-saving electronic appliances at home. If people enjoy the use of a car and various domestic electronic appliances as part of a comfortable modern lifestyle, then the habits of driving and using appliances cannot be treated separately. Because car use and other life choices may be interrelated, whether and how many old habits could be broken partially depends on how strongly the two behaviors are interrelated. In addition, the timing and duration of change also differ according to life choices. Applying similar sociopsychological approaches may not work well to unfreeze the two habits at the same time. A delay in reforming one form of behavior may lead to a failure to change another, and as a result, neither of the two types of behaviors may eventually change. The above arguments are probably equally applicable to intentions.

In summary, it seems that existing theories of behavioral change need to be modified to reflect the potential interdependencies across life choices. In the following case study, we provide empirical evidence based on data collected in Japan in 2015.

17.3.2 A Survey in Japan

We conducted an Internet questionnaire survey with the working population of the Tokyo Capital Area, including the Tokyo Metropolitan Area, Kanagawa, Chiba, Saitama, Ibaragi, Tochigi, Gunma, and Yamanashi Prefectures in December 2015. The survey includes items about migration, employment, child rearing, and dwellings, focusing especially on young people. Specific items mainly concern (1) migration history and reasons for previous migration as well as the influences of other people; (2) type of current job, location of workplace, duration of tenure, and mode of commuting; (3) current residential location, current and ideal residential environment (in terms of distance to daily facilities), and car ownership; (4) household structure (including the presence of children, members' residential location, and their coresidence with a parent); (5) items based on the theory of planned behavior (mainly attitudes, social norms, and intentions) with respect to migration, jobs, child rearing, and dwellings; (6) intended migration destinations in future and the conditions for future migration; and (7) information about discretional activities in daily life. The purpose of the above survey is to clarify the extent to which the working population of the Tokyo Capital Area would like to migrate to local cities and to encourage more people to work/live there. We conducted the survey with the assistance of a major Internet survey company in Japan, and collected valid data from 1000 workers aged 20–40 (Table 17.1), which is a representative sample of the working population in the Tokyo Capital Area.

Table 17.1 Distributions of age and gender of the working respondents by prefecture

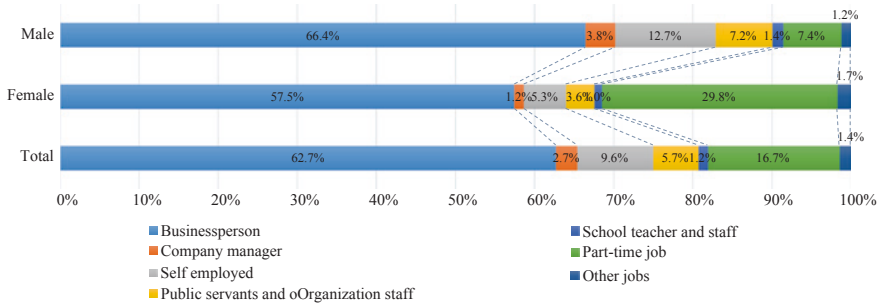| Attribute	Prefecture								
	Tokyo (23 wards) (%)	Kanagawa (%)	Chiba (%)	Saitama (%)	Ibaragi (%)	Tochigi (%)	Gunma (%)	Yamanashi (%)	Subtotal (%)
Male: 20 s	1.6	3.6	2.4	2.8	1.4	1.0	1.0	0.4	14.2
Male: 30 s	2.4	5.8	3.4	4.4	2.2	1.6	1.6	0.6	22.0
Male: 40 s	2.4	5.6	3.2	4.0	2.0	1.4	1.4	0.6	20.6
Female: 20 s	1.4	3.0	2.0	2.2	1.0	1.0	0.8	0.4	11.8
Female: 30 s	1.8	3.8	2.6	3.0	1.4	1.0	1.0	0.4	15.0
Female: 40 s	1.8	4.2	2.8	3.4	1.6	1.0	1.2	0.4	16.4
Subtotal	11.4	26.0	16.4	19.8	9.6	7.0	7.0	2.8	100.0

Fig. 17.1   Distribution of jobs by type

Table 17.2   Life stages by workplace

| Workplace	Life stages					
	Single (%)	Married without child (%)	Married with one child (%)	Married with two or more children (%)	Single parent (%)	Total (%)
Tokyo: 23 wards	54.4	16.3	12.8	14.9	1.7	100.0
Other areas of Tokyo	49.4	14.2	13.7	19.4	3.3	100.0

   As for types of jobs (Fig. 17.1), more than 60 % of the working respondents are businesspeople, and about 30 % of the female respondents are part-time workers, a proportion that is more than four times higher than that of male respondents. There are more single people and married couples without children in the 23 wards of Tokyo than respondents in other life stages, compared with other areas (Table 17.2). As Fig. 17.2 shows, the parents of 66.4 % of the respondents were living in the Kanto region (which has a large overlap with the Tokyo Capital Area).

   In the survey, respondents reported their migration histories (the maximum was five times) and reasons for each migration (see Fig. 17.3: note that each respondent can provide one or more reasons). The average number of migrations reported is 2.4. The most common reason was for employment (32.9 %) (job change: 13.1 %; (voluntarily: 9.8 %); to find a job: 13.0 %; job relocation: 6.2 %; inheritance of family business: 0.6 %). This finding is consistent with traditional migration theories, which emphasize the role of economic factors (e.g., Massey et al. 1993; Groenewold et al. 2012), and other previous studies (e.g., Fahr and Sunde 2006; Kennan and Walker 2010; Huinink et al. 2014). It is also consistent with the observations by the Central Government of Japan.[5] In our previous study using a

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[5]http://www.mlit.go.jp/hakusyo/mlit/h26/hakusho/h27/html/n1211000.html   (accessed   January 30, 2016).

Fig. 17.2 Distribution of the residential location of respondents' parents
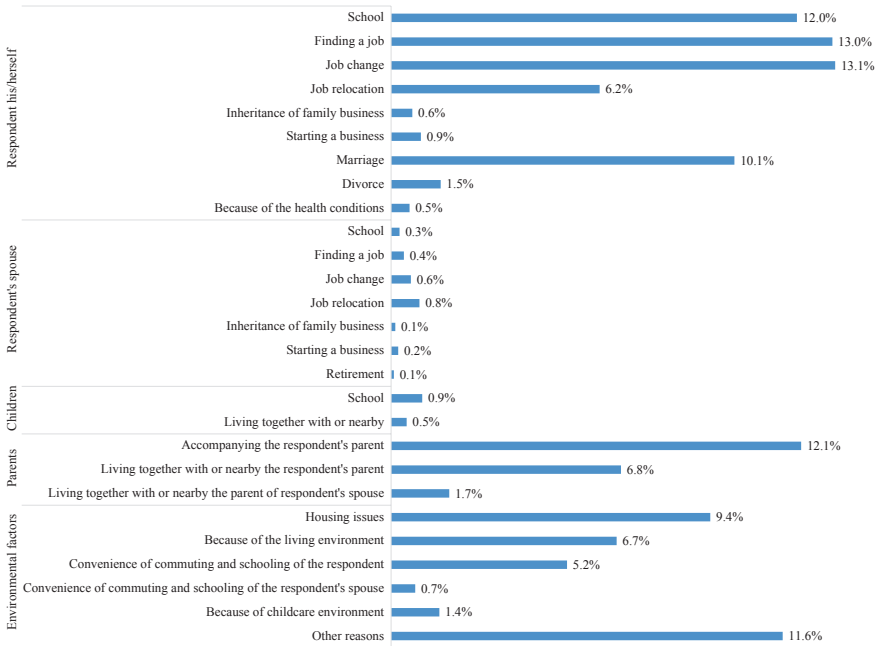
Fig. 17.3 Reasons of migration in the past

life history survey conducted with residents in various Japanese cities in 2010 (Zhang et al. 2014), the peak ages for both job mobility and residential relocation were observed to be between 25 and 30 years old. This also supports the above findings. Interestingly, more than 20 % of respondents reported that their migration was to accompany their parents (the respondent's parent: 12.1 %; the parent of the respondent's spouse: 6.8 %). There are some studies in the literature on the effects of parental migration on their children's lives (e.g., Clifton-Sprigg 2015; Graham et al. 2015); however, no study has clarified how parents affect their children's migration. In this sense, this finding is new. As shown in Fig. 17.2, 66.4 % of respondents live close to their parents (within the same region: Kanto). This suggests that the distance to a parent's residence is also critical in migration decisions. This may be a particular characteristic of Japan and some Asian countries with a strong tradition of caring for parents. It is worth conducting an international comparison to clarify this point. Other strong reasons for migration are going to

Table 17.3 Shares of behavioral change stages with respect to migration from Tokyo, Japan

Age groups	20 s	30 s	40 s	Total
Sample size (persons)	259	380	361	1000
Behavioral change stages				
(1) Migration was already decided, but not because of respondents' own will	7.7 %	4.2 %	3.9 %	5.0 %
(2) Be willing to live in the current residence city	32.8 %	47.6 %	42.9 %	42.1 %
(3) Have not even considered future residence	23.6 %	17.4 %	23.8 %	21.3 %
(4) Have considered future residence, but have hesitated to decide	18.9 %	18.9 %	14.1 %	17.2 %
(5) Intend to move to other places in Japan	9.3 %	7.9 %	9.1 %	8.7 %
(6) Already started to prepare for future migration based on respondent's own will	1.5 %	0.8 %	1.7 %	1.3 %
(7) Already decided to move to other places in Japan	3.1 %	1.1 %	1.1 %	1.6 %
(8) Considering to move to overseas, or preparing for overseas migration, or already decided to move to overseas	3.1 %	2.1 %	3.3 %	2.8 %
Total	100.0 %	100.0 %	100.0 %	100.0 %

school (12.0 %) and getting married (10.1 %), which is consistent with our intuitions. Furthermore, environmental factors cannot be ignored: there are housing issues (9.4 %), the living environment (6.7 %), and the convenience of commuting and schooling of the respondent (5.2 %).

17.3.3 Evidence of Interrelated Behavioral Changes Across Life Domains

As shown in Table 17.3, among all the respondents, 42.1 % are willing to reside in the current city, 21.3 % have not even considered their future residence, 5.0 % of respondents have already decided to migrate, but not voluntarily, and 2.8 % of responses are related to overseas migration. In other words, 71.2 % of these respondents may have ruled out voluntary relocation to other places in Japan. The strongest resistance to migration is expressed by those in their 30s: 47.6 % reported that they were willing to live in the current city of residence. This willingness to remain shows the largest variation across the three age groups (32.8 %–47.6 %). In contrast, variations across age groups with respect to other behavioral changes are unremarkable. In relation to migration to other places in Japan, 17.2 % of respondents have considered their future residence—however, they hesitated to decide; 8.7 % intended to move to other places in Japan; 1.3 % had already begun preparation for future voluntary migration, and just 1.6 % had already decided to move to other places in Japan. The above 28.8 %

of respondents (i.e., 288 people) were asked to report their potential migration places, with the assumption that they had already decided to migrate. As a result, 166 people reported that they would migrate to one of the three megacity regions (Tokyo, Nagoya, or Osaka), i.e., 16.6 % in total. A total of 122 people [30 people aged in their 20s (3.0 % of the total), 44 people aged in their 30s (4.4 %), and 48 people aged in their 40s (4.8 %)] reported that they would migrate to local cities (103 people: 10.3 %) and rural areas (19 people: 1.9 %), i.e., 12.2 % in total. These results are consistent with our intuition; that is to say, most people do not want to move from the Tokyo Capital Area once they have settled there. This suggests a difficulty in resolving the fundamental issues caused by the overconcentration of the Japanese population. Since 2014 in particular, the Japanese government has actively implemented various policies to encourage more people to move to places beyond the three megacity regions, to revitalize local cities and rural areas. However, it remains questionable how large the influence of these percentages—3.0 % in their 20s, 4.4 % in their 30s, 4.8 % in their 40s, and 12.2 % overall—is on the revitalization of local cities and rural areas. A comparison of the three age groups reveals that those in their 20s have the lowest percentage of people who are willing to live in the current city of residence, while this is highest for those in their 30s. The proportions of those intending to move to other places in Japan are similar among the three age groups. The proportion of those in their 20s and 30s that hesitate to move is higher (by 4.8 % points) than those in their 40 s. The proportion of those in their 20s who have already decided to move to other places in Japan is highest (3.1 %); however, the proportions moving to other places in Japan are similar in the three age groups.

Next, the concurrence of behavioral changes in terms of migration and of job, child rearing, and residence are shown in Tables 17.4, 17.5, 17.6. We conducted a χ^2 test to examine whether the behavioral changes between each of the above three pairs of life domains are independent, and rejected the hypotheses of independence in all cases on statistical grounds (as shown at the bottom of each table). Given this interdependence across life domains, even though some young people may intend to migrate to local cities, they may not do so, because behavioral changes in other domains do not support such a change.

Among those who intend to move to other places in Japan (8.7 %), those who either intend to change jobs (35.6 %), those preparing for a voluntary job change (9.2 %), or those who have already decided on a voluntary job change in future (1.1 %) only account for about 46 %. For the remainder, 24.1 % hesitate to decide whether to continue their current job or change it, and 29.9 % are willing to continue their current job. As for changes of dwelling, those who intend to change to another residence in future (70.1 %), who are already preparing to move (5.7 %), or who have decided to change residence in the near future (3.4 %) account for about 80 %. Concerning change in the child rearing domain, those who either intend to have children or to have more children in future (33.3 %), who are currently planning to have children (4.6 %), or who have decided to do so in the near future (2.3 %) only account for about 40 %. Thus, the intention to migrate in future is much more consistent with potential changes in residence than with changes in jobs or child rearing.

Table 17.4 Joint occurrence of behavioral changes between migration and job

Migration \ Job	Future job was decided, but not because of own will (%)	Willing to continue the current job (%)	Have hesitated about whether to continue the current job or not (%)	Intend to have a change in job (%)	Already started to prepare for a job change based on own will (%)	Already decided to have a change in job based on own will (%)
	(2.5)	(49.5)	(25.2)	(16.3)	(3.9)	(2.6)
(1) Migration was decided, but not because of respondents' own will	24.0	42.0	22.0	8.0	0.0	4.0
(2) Be willing to live in the current residence city	1.4	63.2	18.8	13.1	1.9	1.7
(3) Have not even considered future residence	1.9	47.4	33.8	13.6	1.9	1.4
(4) Have considered future residence, but have hesitated	1.2	36.6	33.7	22.1	5.2	1.2
(5) Intend to move to other places in Japan	0.0	29.9	24.1	35.6	9.2	1.1
(6) Already started to prepare for future based on own will	0.0	38.5	15.4	7.7	30.8	7.7
(7) Already decided to move to other places	6.3	18.8	25.0	25.0	12.5	12.5

(continued)

Table 17.4 (continued)

Migration	Job					
	Future job was decided, but not because of own will (%)	Willing to continue the current job (%)	Have hesitated about whether to continue the current job or not (%)	Intend to have a change in job (%)	Already started to prepare for a job change based on own will (%)	Already decided to have a change in job based on own will (%)
(8) Considering to move to overseas, or preparing for, or already decided to move to overseas	0.0	35.7	17.9	3.6	14.3	28.6

Independence test for all categories: CHISQ = 321.9 (DF = 35, p = 0.000); Independence test for categories excluding items (1) and (8) of migration: CHISQ = 132.1 (DF = 20, p = 0.000)

Table 17.5 Joint occurrence of behavioral changes between migration and residence

Migration	Dwelling					
	Satisfied with current dwelling and no need to change (%)	Have not considered whether to change the dwelling or not in future (%)	Have hesitated about whether to change the dwelling in future or not (%)	Intend to change the dwelling in future (%)	Already started to prepare for changing the dwelling (%)	Already decided to change the dwelling (%)
	(28.1)	(18.2)	(9.2)	(36.4)	(4.4)	(3.7)
(1) Migration was decided, but not because of respondents' own will	24.0	14.0	14.0	28.0	4.0	16.0
(2) Be willing to live in the current residence city	47.7	15.4	6.4	26.1	2.4	1.9
(3) Have not even considered future residence	18.3	35.7	8.0	34.7	1.4	1.9
(4) Have considered future residence, but have hesitated	9.3	13.4	19.8	48.3	7.6	1.7
(5) Intend to move to other places in Japan	8.0	9.2	3.4	70.1	5.7	3.4
(6) Already started to prepare for future based on own will	0.0	0.0	0.0	30.8	61.5	7.7

Table 17.5 (continued)

Migration	Dwelling					
	Satisfied with current dwelling and no need to change (%)	Have not considered whether to change the dwelling or not in future (%)	Have hesitated about whether to change the dwelling in future or not (%)	Intend to change the dwelling in future (%)	Already started to prepare for changing the dwelling (%)	Already decided to change the dwelling (%)
(7) Already decided to move to other places	*6.3*	*6.3*	*12.5*	*31.3*	*6.3*	*37.5*
(8) Considering to move to overseas, or preparing for, or already decided to move to overseas	17.9	7.1	7.1	46.4	7.1	14.3

Independence test for all categories: CHISQ = 431.2 (DF = 35, p = 0.000); Independence test for categories excluding items (1) and (8) of migration: CHISQ = 411.0 (DF = 25, p = 0.000)

**Table 17.6** Joint occurrence of behavioral changes between migration and child rearing

Migration	Child rearing						
	No intention to marry or to have a child (%)	The current number of children is ideal and no intention to have more children (%)	Have not considered whether to marry and have any child or not, or whether to have more children or not (%)	Have hesitated about whether to marry and have any child or not, or whether to have more children or not (%)	Intend to have a child or to have more children (%)	Have started to prepare for having a child or having more children (%)	Already decided to have a child or to have more children (%)
	(16.7)	(21.7)	(18.1)	(9.0)	(26.8)	(4.5)	(3.2)
(1) Migration was decided, but not because of respondents' own will	10.0	28.0	14.0	8.0	26.0	8.0	6.0
(2) Be willing to live in the current residence city	17.1	28.7	16.2	7.6	23.0	4.5	2.9
(3) Have not even considered future residence	18.3	16.4	28.2	10.3	24.4	0.9	1.4
(4) Have considered future residence, but have hesitated	14.5	16.3	15.1	9.3	34.9	7.6	2.3
(5) Intend to move to other places in Japan	20.7	12.6	16.1	10.3	*33.3*	*4.6*	*2.3*

(continued)

Table 17.6 (continued)

Migration	Child rearing						
	No intention to marry or to have a child (%)	The current number of children is ideal and no intention to have more children (%)	Have not considered whether to marry and have any child or not, or whether to have more children or not (%)	Have hesitated about whether to marry and have any child or not, or whether to have more children or not (%)	Intend to have a child or to have more children (%)	Have started to prepare for having a child or having more children (%)	Already decided to have a child or to have more children (%)
(6) Already started to prepare for future based on own will	7.7	23.1	15.4	7.7	*38.5*	*0.0*	*7.7*
(7) Already decided to move to other places	18.8	0.0	6.3	6.3	*43.8*	*18.8*	*6.3*
(8) Considering to move to overseas, or preparing for, or already decided to move to overseas	14.3	17.9	10.7	17.9	17.9	0.0	21.4

Independence test for all categories: CHISQ = 113.0 (DF = 42, p = 0.000); Independence test for categories excluding items (1) and (8) of migration: CHISQ = 71.8, (DF = 30, p = 0.000)
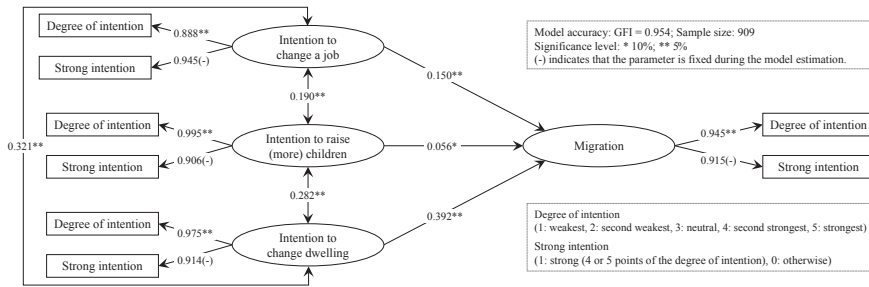
Fig. 17.4 Correlations of intentions across life domains: migration, job, dwelling, and child rearing

Keeping the above interdependencies across life domains in mind, we estimated a structural equation model, focusing only on intentions in different life domains, to test whether intention to migrate is affected by intentions to change job, dwelling, or child rearing. The model estimation reflects correlations among the latter three items. Figure 17.4 illustrates the estimation results. The goodness of fit (GFI) value is 0.954, suggesting that the model fit is sufficient to support the above hypothesis. Obviously, intentions with respect to jobs, dwellings, and child rearing all have a statistically significant effect on intention to migrate. Significant correlations of intentions are also confirmed with respect to jobs, dwellings, and child rearing. The intention to change dwelling has the strongest influence on the intention to migrate, where its effect size (i.e., the direct effect: 0.392) is more than twice as high as that of employment (0.150) and seven times higher than that of child rearing (0.056). Concerning intentions to change jobs, dwellings, or child rearing, the correlation between jobs and dwellings is highest (0.321) and the lowest correlation is observed between jobs and child rearing. To the best of our knowledge, this is the first study to reveal such interrelated behavioral changes in multiple life domains. The above findings suggest that it is necessary to reformulate traditional theories of behavioral changes by properly reflecting interdependency across life domains. It is also expected that such reformulation of theories of behavior could provide further sound insights into cross-sectoral policies to support migration.

17.4 Conclusions

Urban policies are intended not only to regulate people's behavior using various laws, institutional rules, and economic measures (but consensus building is required), but also to encourage voluntary changes in people's behavior in desirable directions through efficient communication. In particular, voluntary behavioral changes are essential for sustainable urban development, which requires close collaboration between various stakeholders over a considerable period. In the context

of migration, such collaboration largely determines the population size and structure of a city/region, which is the most important input for almost all urban policies. On the other hand, no city/region could survive without connections to other parts of a nation or the world. Migration also determines and reflects the development patterns of a nation, which in turn affect the development of cities/regions. Thus, understanding migration behavior is essential for being able to make decisions on urban policies.
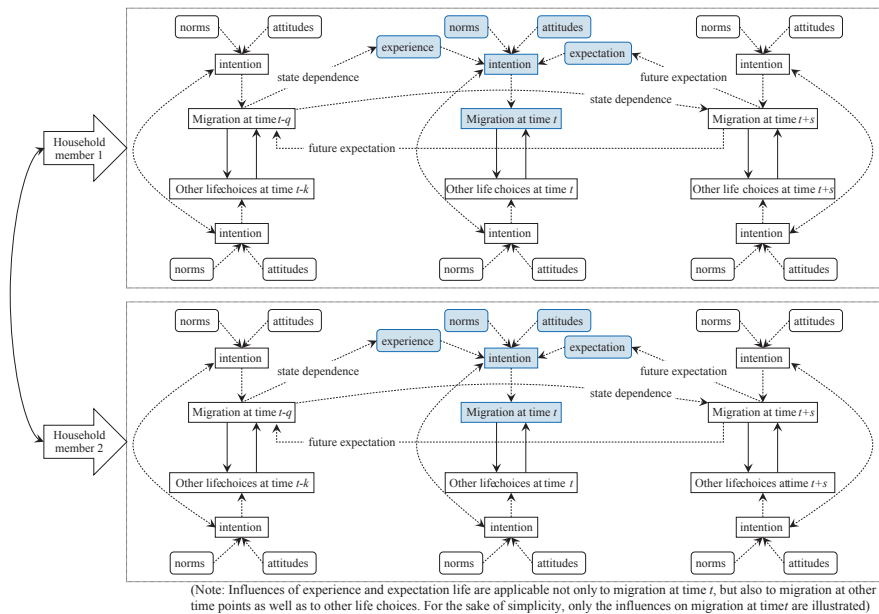
The population size of a city/region is important for its development, but the quality of its population is much more important (Romer 1990). Florida (2002a, b) and Zachary (2000) argued that regional innovation and economic growth are strongly associated with the creativity and diversity of a region, and it is especially important to attract talented individuals or those with high levels of human capital, because the presence of such human capital in turn attracts and generates innovative, technology-based industries. In fact, the importance of such high-quality human capital in urban and region development has been long recognized (Ullman 1958; Jacobs 1961). More empirical evidence is provided by Mathur (1999). To attract such human capital successfully, there is no doubt that economic incentives (salaries or relative deprivation elsewhere) are important; however, the roles of factors such as amenities, recreation, and lifestyles are crucial (Gottlieb 1995; Kotkin 2000; Glaeser et al. 2001; Lloyd and Clark 2001; Florida 2002a, 2002b). According to Yigitcanlar et al. (2007), knowledge workers prefer to live in a city that not only has affordable housing, but also high-quality urban services/facilities (e.g., child rearing, school education, and health care), a rich retail environment, and an attractive entertainment environment (professional sports, music, arts, and historical sites), and also offers a rich life in retirement. Frenkel et al. (2013), emphasizing that knowledge workers play three roles: household members, workers, and leisure consumers, further revealed that land uses related to culture, education, and lifestyle influence knowledge workers' residential behavior, in addition to the socioeconomic level of the city, the affordability of its housing, commuting time, and travel time to the city center. Households with culture-oriented lifestyles prefer to live in a city center, and households with home-oriented lifestyles prefer a suburban residence.

Based on an extensive literature review about various macro-, meso-, and microlevel studies, Hagen-Zanker (2008) concluded that migration decisions should be considered at a household level, where social networks, migration institutions (e.g., rules and norms governing the network that reduce transaction and migration costs), and relative deprivation (relative income, levels of inequality in a community) are emphasized. This argument is in line with our viewpoint about the intrahousehold and social interactions seen in studies of residential behavior (e.g., Zhang and Fujiwara 2009), car ownership (Zhang et al. 2009; Kuwano et al. 2011), time use (Zhang et al. 2002; Zhang and Fujiwara 2006), energy consumption (Yu et al. 2012), and tourist behavior (Wu et al. 2013). Additionally, we would like to argue for the importance of analysis of other life choices in migration studies, a view supported by the above review and empirical evidence of the

interdependency across life domains revealed in Chap. 2 of this book. Human behavior, including migration behavior, changes over time.

As shown in the review in Sects. 17.2 and 17.3, there exist various dynamic behavior models in the literature; however, most previous studies have strongly focused on behavioral outcomes, rather than the process underlying them. This is true for not only migration behavior, but also for other life choices. With the above arguments in mind, it seems that the framework shown in Fig. 17.5 is necessary to address both behavioral changes related to the decision-making process and temporal dynamics related to behavioral outcomes (i.e., decision results) simultaneously by incorporating various interdependencies. In relation to behavioral changes, intentions are not only affected by attributes and norms, but also by experience and expectation. The influence of experience is called "state dependence" (Heckman 1981). Previous studies have widely represented state dependence by directly linking behavioral outcomes (choice results) over time (e.g., Kitamura 1990; Hunt 2008; De Jong et al. 2012; Carro and Traferri 2014; Zhang et al. 2014; Plum and Ayllon 2015), and have also shown that many human decisions are forward-looking (e.g., Manski 1999; Chan and Stevens 2004; Khan and Dhar 2007; Van der Klaauw and Wolpin 2008; Van der Klaauw 2012; Zhang et al. 2014; Tran et al. 2015). However, considering the importance of behavioral changes related to the decision-making process, it seems more logical to represent state dependence

(Note: Influences of experience and expectation life are applicable not only to migration at time *t*, but also to migration at other time points as well as to other life choices. For the sake of simplicity, only the influences on migration at time *t* are illustrated)

Fig. 17.5 A conceptual framework of behavioral changes and temporal dynamics across life domains

and future expectations via intentions. The correlations revealed in Fig. 17.4 should also be reflected. There are various challenges (such as surveys, modeling, and policy applications) to realizing this comprehensive but complicated framework. In surveys, it is not an easy task to collect data, especially about items of behavioral change over time using methods such as panel surveys, considering the burden these place on respondents. Innovative survey methods (including retrospective surveys) should be developed. As for modeling, both utility-based approaches with attractive features for economic evaluations of policies (e.g., Yu et al. 2012), but also agent-based approaches with flexibility in managing various complex aspects (e.g., Kniveton et al. 2011) should be further improved to deal with large sets of life choices.

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