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Internal Migration in China:
New Perspectives on Family Life

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Declaration

This thesis is the result of my own work and includes nothing that is the outcome of work done in collaboration. The thesis is not substantially the same as any that I have submitted or is being concurrently submitted for a degree or diploma or other qualification at the University of Cambridge or any other University or similar institution except as declared in the Preface and specified in the text. I further state that no substantial part of my dissertation has already been submitted, or is being concurrently submitted for any such degree, diploma or other qualification at the University of Cambridge or any other University or similar institution except as declared in the Preface and specified in the text. It does not exceed the word limit of 80,000 as prescribed by the Degree Committee for the Faculty of Human, Social and Political Sciences.

Notes:

- Chapter 6 has been published in *Ageing & Society*, in a form very similar to the form in which it appears in this thesis, with minor differences in formatting.
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- Chapter 7, on financial inclusion, has been submitted to the *Journal of Ethnic and Migration Studies* and has been given a revise and resubmit.
- Chapter 5, on boarding school experience and parental migration, has had a less fortunate history. I started work on this chapter as a new student in 2018, at which point the ideas in the chapter were very novel. Unfortunately, a trio of chapters using similar data and methods to those I use in Chapter 5, were published by other authors in 2020. The work in Chapter 5 is distinct from these chapters in some ways, but I do not believe it can now be published.

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Internal Migration in China: New Perspectives on Family Life

Aihong Li

Abstract

Over the past half-century, China has witnessed the largest internal migration in history, with millions of predominantly rural workers moving to become part of the urban workforce. The *hukou* household registration system means that migrant workers experience various forms of disadvantage relative to those born in cities, in terms of access to housing and other social amenities; in addition, families are often separated for protracted periods by migration. In this thesis I analyse the effects of migration from three novel and under-researched perspectives.

The first is about rural children's experiences of boarding school. The mental health of children left behind by migration has generated a huge literature, but the role played by boarding schools has received little attention; existing evidence is mixed and does not take into account parental migration. Using data from the first wave of the China Family Panel Studies (CFPS 2010), I investigate the relationship between boarding school and a range of child outcomes, controlling for both household and community characteristics. I find that boarding school is associated with poorer mental health for children; in addition, although boarding school is predominantly a rural rather than a "left-behind" phenomenon, left-behind status slightly modifies the influence of boarding on children's academic performance and academic satisfaction.

Secondly, I explore the emotional health of older people whose children have migrated for work. A small literature has documented negative effects on elders' mental health, but it does not investigate the mechanisms that underpin this relationship. Using data from CFPS 2010, I introduce three new dimensions. I consider temporal factors, finding that elders' mental health decreases the longer their children are away, but recovers after a certain length of time. I also distinguish between left-behind parents based on whether *all* or *some* of their adult children have migrated, finding that rural elders suffer less adverse impacts, and recover twice as quickly from the absence, when only some of their children have migrated. Finally, I investigate moderating effects, showing that providing (grand)childcare and receiving economic support from migrant children mitigate negative effects on mental health.

Thirdly, I examine the extent to which migrant households have access to financial services provided by banks, insurance companies and other institutions, using data from the China Household Financial Studies (2013). Multilevel estimates reveal substantial differences in financial inclusion by *hukou* status, with significant modifying effects of city development. The findings shed light on the

potential for market failures that deny access to financial services to groups of people, and suggest how policymakers could regulate the financial services market for better consumer protection, financial inclusion, and rural-urban integration.

Results from all three empirical chapters suggest that internal migration and economic reform in China have not benefited rural citizens as intended. Rural children suffer significantly poorer mental health in boarding schools; elderly parents' mental health is strongly impacted by their adult children's migration, and migrants in urban areas – even those who have successfully converted to an urban *hukou* - experience impediments when attempting to integrate into urban life. Evidence from multiple perspectives of family life suggests a need for institutional changes leading to fairer and more equal outcomes for rural migrants and their families.

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Chapter 1 Introduction

The lives of Chinese people have undergone dramatic changes over the last decades. Social and political movements between the 1950s and the late 1970s brought great challenges and disruptions to the country's political stability, economic development, and the life chances of ordinary people. Following this, straight after the massive socialist experiments, came a period of market-driven momentum in the pursuit of stability and economic development.

Since the 1980s, China has witnessed the largest internal population migration that has ever occurred anywhere in the world. This migration – primarily a large-scale movement of workers from rural areas to the cities – has seen men and women, young and old, migrate in search of a better life, and has had profound effects on people's personal, family and economic lives. Many of these effects – for example, the conditions of migrant workers, or the wellbeing of children left behind in the care of grandparents while their parents work in cities - have generated large research literatures. Other effects, on other groups of people, remain relatively under-explored. Hence, this thesis investigates three such aspects of Chinese social life.

The thesis takes a family and life-course perspective, examining the situation of family members at different stages of their lives – different generations who have different needs, goals, and purposes in life and who are experiencing and acting their own “socially defined events and roles” (Giele & Elder, 1998, p.22). I conceptualise the effects of migration as being based on the interplay between individual choices and life chances, and institutional arrangements (for example, the *hukou* household registration system which determines where people may live and work; or changes to the school system in rural China).

Why study internal migration and why China? King and Skeldon (2010) point out that the “age of migration” (a phrase coined by Castles and Miller (1993)) should also be thought of an age of *internal* migration for three significant reasons. First, internal migration has outweighed international migration in terms of the numbers involved and the scale of population movements in the modern world, to the extent that they predicted that internal migration in China alone would exceed total global international migration. The second reason, which serves as a rationale for integrating the study of internal and international migration, is that the “boundary” between internal and international migration has increasingly become blurred because of the unstable nature of national borders. Third, they emphasized that internal and international migration share the same fundamental causes. These three points challenged the idea that of transnational migration studies should be of predominant importance in migration studies, suggesting that internal and international migration are two sides of one coin and should be given equal prominence.

In his most celebrated chapter, *A Theory of Migration*, Lee (1966) suggests that migration can be broadly defined as a permanent or semi-permanent change of an individual's residence, regardless of the distance or the motivation of the move; however, continual movements without long-term residence and temporary moves are excluded. Thus, Lee's definition of migration does not distinguish internal migration from international migration, and this is in line with other classic theorisations of migration: the Laws of Migration proposed by Ravenstein (1889); Gravity Modelling of Migration (Stouffer, 1960); Cost-Benefit Analysis of Migration (Sjaastad, 1962), Migration and Unemployment Modelling (Todaro, 1969), and the General Systems Theory framework for rural-to-urban migration (Mabogunje, 1970).

Multiple perspectives have been used to explore the determinants and the consequences of migration. Theoretical work on the drivers of migration includes work on gender and migration, race and migration, migration and technology, migration and development, migration and social networks, etc. Regarding the consequences of migration, the literature includes the assimilation and inclusion of migrants, the physical and mental health of migrants, urbanisation and development of the destination cities, and so on. Lee (1966) suggests that factors driving migration may be thought of as belonging to four groups: first, factors which impel or discourage migration at the origin areas; second, factors that attract or restrict migration at the destination regions; third, the intervening obstacles to migration between the origin and destination, and fourth, personal factors which impel or prohibit migration across the whole decision-making process. Lee acclaimed that this simplified framework reflects what we know about migration and implies the potential fields for further investigations.

More than 20,000 publications can be found on Scopus by using “(*internal migration*)” and “*China*” as the title/abstract/author keywords. After further refinement using the literature analysis software Bibliometrics, the ten most prominent topics in the studies of migration in China are rural-urban migration, urbanisation, left-behind children, *hukou*, rural China, migrant children, mental health, gender, settlement intention, and inequality. Thus, the scholarship on migration in China covers the determinants and consequences of migration, as well as the influence of institutional parameters. Some of these topics relate specifically to the Chinese context. These “Chinese characteristics” may be sorted into four themes: (1) the left-behind population and rural China, (2) migration and *hukou*, (3) Chinese-specific institutional obstacles to migration, and (4) the settlement and assimilation of migrants in cities. These themes reflect that the current literature on migration in China is primarily motivated by institutionalist concepts, which play an essential role in the drives, processes, and consequences of migration.

Internal migration in China has caught not only the attention of scholars but also one of the most influential media outlets in the world. In 2016, the BBC broadcast a serial documentary named *Chinese New Year: the biggest celebration on Earth*. The first episode of the series is called *Migration*, in which three presenters experienced the national “Spring Movement” (“*chunyun*”, 春运) transport

rush – that is, the return of migrants to spend the New Year holiday with their families. In this episode, one of the presenters commented that “There is no second country that can bear such a huge amount of population mobility” (Locke et al., 2016).

The “Spring Movement” is the offspring of the interplay between the institutional settings and the agency of migrants. The very first record of the “Spring Movement” was 1979, which witnessed more than 100 million rural migrants in the rush and crush, travelling back to their homelands. Starting from 1979, the number of people, who joined the “Spring Movement” has been ever increasing. The highest number on record was in 2019; the Office of Public Transportation (Xinhuanet, 2019) in China reported that more than 300 million people had joined the “Spring Movement”. For the past 40 years, the “Spring Movement” periodically happens at the very end of each Chinese lunar calendar; For most migrants, the Chinese Lunar New Year break is the only time they can afford to return home and spend some time with their families – a time which is mutually precious for migrants and for family members young and old who are left behind in the rural homelands.

This annual circulation, however, is somewhat ironic in the context of Chinese family culture, for which family togetherness is one of the most important traditions and values in Chinese society. As Fei (1939) describes, “*people in rural China are born into the rural society, which is a society where children are born in everyone’s eyes and where people live for their entire life*”. Why does it seem that Chinese people have abandoned their core family values, which have been practised for thousands of years? What are the impacts on family culture and family life brought about by this massive ongoing internal migration? Where will this internal migration lead the society, especially the rural community and rural people to?

For the three decades between the late 1970s and 2010s, a large body of research on migration in China focused on the *hukou* system of household registration: the limits it placed on movement, the lack of facilities available to rural-to-urban migrants, and its consequences on occupational attainment, social welfare inclusion, and other factors which maintained social and economic divisions between rural migrants and urban citizens in cities. That is, the focus of enquiry was destination oriented. More recently, researchers started to give more attention to the origin regions and populations of the migration. By depicting the life experiences of the left-behind population who have not directly participated in the migration, but who have experienced the consequences of being left behind, this new research enriches the picture of the family life of migration communities.

The existing literature has investigated the influence of migration on family life from economic, social, and cultural perspectives. Many aspects have been well documented, for example, household living arrangements and changes due to migration (Goldstein et al., 1990; Gui, 1988; Huang, 2006; Zhang, 2013); wellbeing/mental health and academic performance of the left-behind and migrant children (Yue et al., 2014; Wang et al., 2016; S. Wang et al., 2017; Long et al., 2020;); the wellbeing

and physical health of the rural elders (Silverstein et al., 2006; Ren & Treiman, 2015; Ren & Treiman, 2016; Yi et al., 2019; Pan & Dong, 2020); the employment, housing, and living status, social welfare inclusion and *hukou* conversion, and mental health and wellbeing of the migrant workers (Liu & Wang, 2020; Xie et al., 2021; Yue et al., 2020; Wang & Fan, 2012; Y. Huang et al., 2020). Publications on internal migration and family life since the 1980s have advanced the understanding of how societal and family aspects have been reshaped or moulded by the great force of migration in both beneficial and detrimental ways. However, there are some under-explored areas, which are the areas studied in this thesis.

Widespread migration from the countryside has meant that large numbers of children have been “left behind” in rural areas, often in the care of their grandparents. Multiple effects on these children have been extensively documented in the literature, but another effect on children’s lives has been much less studied. As rural populations have shrunk, so have the school populations in rural areas. The School Merging Program, a policy of the Chinese government, closed many rural schools, meaning that many rural children were affected not only by parental migration, but also by extremely long commuting distances to school, or by an alternative to these long commutes, in the form of an expansion in boarding school places. The interaction of boarding school and parental migration forms the first empirical chapter of this thesis. Existing research has either studied the influence of parental migration on children’s mental health and other development outcomes by controlling for the school grade, or has investigated the experiences of attending boarding schools on the child outcomes by controlling the parental migration status. Few have explored how boarding school experience and parental migration have worked together to shape the mental health and developmental outcomes of rural children.

I then turn to the mental health of a group whom I term “left-behind elders” – older people whose adult children have migrated from rural areas in search of work. A sizeable body of literature shows that the mental health of rural elderly parents in China is negatively affected by the migration of their adult children (Silverstein et al., 2006; Guo et al., 2009; Ren & Treiman, 2015; Ao et al, 2016; Wen et al., 2019; Yi et al., 2019; Pan & Dong, 2020, etc.,). However, for the rural elders who have also been stranded in the origin regions, the temporal effects of migration have not been well documented, and neither has the existing typology of living arrangement revealed the clash between elders’ traditional values of filial piety and the family’s livelihood adaptation. This is the subject of the second empirical chapter in the thesis.

Third, despite the volume of literature on the assimilation and inclusion of migrant workers in the cities, very few studies have touched upon the sphere of financial inclusion and economic wellbeing. In fact this is an increasingly important area, given the global emphasis on “financialisation”; formal financial activities are an increasingly important part of people’s daily lives and have become an essential requirement for being included in society (Fligstein & Goldstein, 2015; Van der Zwan, 2014). The research of Lin and et al. (2020), based on the data from the China Migrants Dynamic Survey

(CMDS), shows that for rural migrants, their rural-urban multiple livelihoods have increasingly shifted towards the urban end; for them, housing purchases in both the destination and the towns/nearest cities of the origin areas have become an essential means to achieve urban *hukou*. The financial inclusion of migrants at the household level forms the third empirical chapter of this thesis.

In order to understand the societal influences of migration on the family, I investigate the needs and targets of the three generations, the young, the old, and the middle generations, according to their own life stage. I believe an examination of how families interact with the process of social and economic changes will benefit in three ways. First, it brings new empirical evidence to migration research by focusing on the sphere of the family—the basic unit of Chinese society, which absorbs and reflects all the pressures and stimulations from the institutional level. Second, the investigation of internal migration in China brings light to the importance of internal migration in developing countries. Third, this investigation can bring new insights into the process of industrialisation and urbanisation in China and provide policymakers with evidence for better social policies, so as to achieve social justice and equality, social inclusion and integration, and more sustainable economic development.

The thesis is structured as follows. First, in order to understand the paradox between the Chinese family culture of togetherness and the separated family life we see today, and to provide plausible answers to the inquiries proposed above, we cannot bypass the exploration of the social setting of Chinese migration. This exploration is written into Chapter 2, in which I provide an elaboration of the role of the family in household welfare provision, so as to help understand how families mobilize migration as a means for family benefits. *Hukou* is also covered, which is the base on which rural-urban welfare division is created, and economic reform, which directly paves the way for rural-to-urban migration.

Chapter 3 presents several relevant theoretical perspectives, which help formulate and guide the investigation of the influence of migration on family life. This chapter consists of four parts:

1. Conceptualisation of theories and related migration theories
2. Chinese-specific theories of migration and their implications
3. Theories on family instability and parent-child relationship and their implications on the child outcomes of left-behind children and emotional health of rural elderly parents, with a nuanced discussion on filial piety as well
4. Marginalisation of migrants from an intersectional lens, covering *hukou*, citizenship, and social inclusion in Chinese large cities.

Note that this thesis focuses on the consequences of migration on family life; the concepts and theoretical perspectives explaining the drives and hindrances of migration from individual, family, and system-perspectives guide the modelling of the empirical enquiries in this study.

Chapter 4 introduces the data and methods. This thesis uses two different large-scale survey data, the China Family Panel Studies (CFPS) for Chapters 5 and 6 and the China Household Financial Survey (CHFS) for Chapter 7. This chapter introduces the sampling and questionnaire design of the two surveys and also provides a general sketch of the statistical modelling used for each empirical chapter. A detailed discussion of key research measures and research samples and research modelling strategies are introduced in each chapter's Data and Research Methods section.

Chapters 5, 6 and 7 present the results of empirical research. In Chapter 5, I investigate how the experience of boarding school (a common solution for rural children who may live long distances from the nearest school or whose parents may have migrated for work) affects child development and wellbeing. I consider four aspects of children's experience: mental health, wellbeing, academic performance, and self-efficacy. A range of analytical techniques are used, including Instrumental Variables (IV) and Propensity Score Matching (PSM) to control for endogeneity in the decision over whether a child should attend boarding school, and to attempt to estimate causal relationships. The main findings are, first, that the decision to attend a boarding school is only very marginally associated with parental migration. Instead, it is influenced primarily by geographic factors and social institutions. Second, the boarding experience imposes a significant negative impact on children's mental health, whereas it is positively related to academic performance. No significant effect is found for wellbeing and academic self-efficacy. This chapter illuminates how large-scale societal changes can influence the young generation's life experiences, especially in rural regions.

In Chapter 6, I explore how the emotional wellbeing of rural elders is affected by the migration of their adult children. In this chapter, I introduce two new dimensions of analysis to expand our understanding of this "left behind" phenomenon and offer statistical insights, theoretical explanations and policy recommendations, as well as suggestions for further study.

Firstly, the analysis distinguishes between rural elderly parents based on whether *all*, or *some*, of their adult children have migrated. This distinction leads us to the finding that rural elderly parents suffer more adverse mental health impacts when *all* adult children from a household move away. Secondly, the chapter investigates the temporal dimension of migration, finding that there is a "turning point" after which the mental health of rural elderly parents appears to recover after the migration of their adult children. A comparison of the two groups shows that rural elderly parents who see *some* of their adult children migrate recover from depression twice as quickly as those who see *all* of their children migrate.

In addition, I also find that receiving financial support or providing childcare can only partly mediate the negative influence of migration. The level of depression and wellbeing of rural elderly parents can be significantly moderated by the emotional closeness between them and their adult children. Providing (grand)childcare assistance and receiving economic support are shown to have smaller

mitigating effects. The chapter concludes with a discussion of how the notion of “filial piety” could, directly and indirectly, play a role in the emotional health of rural elderly parents, with policy implications provided.

In Chapter 7, I direct the focus to the out-migrated group and consider their financial inclusion in cities where they now live and work. Financial inclusion (the access by individuals to the services provided by financial institutions such as banks, insurance, and investment firms) is a crucial condition for economic development and forms one of the principal policy instruments in China for the promotion of rural-urban integration. Using data from the China Household Financial Studies (2013), this chapter investigates the determinants of financial inclusion for households in China.

I focus particularly on the role of *hukou*, using a typology which reflects recent policy initiatives to extend urban *hukou* status to natives of rural areas, as well as other diversity within formal *hukou* types. I also investigate the way in which the effects of *hukou* interact with the characteristics of the city in which the household resides. Multilevel estimates reveal substantial differences in financial inclusion by *hukou* status, with significant modifying effects of city development. These findings shed light on the potential for market failures which deny access to financial services to groups of people and suggest means by which policymakers could regulate the financial services market for better consumer protection and financial inclusion under the global context of governments and states’ retreating of providing social welfare and benefits, the triumph of neoliberalism.

Chapter 8 discusses the main research findings, the research limitations, the social and policy applications, and the future research directions on internal migration and family life in China. By investigating the mental health and other development aspects of the left-behind population and the financial inclusion status of the out-migrated in cities, this thesis endeavours to contribute to the big picture of rural-to-urban migration in China, focusing on the consequences. By illustrating the gains and losses of the migrant community from the family perspective along with the hopes and struggles of migrants in cities, this thesis hopes to contribute to the literature on migration, social mobility, and family research, so as to provide implications for social policies and practices on migration.

Chapter 2 Research Background

In the following chapter, I provide the research background of the thesis. I first demonstrate the cultural, social, and economic changes brought by migration and institutional arrangements on rural people and rural community, to highlight the before and after. Next, I outline three key institutional factors: the *hukou* system, economic reforms, and a brief illustration of social welfare in premodern and modern China. Finally, I illustrate the profile of households involved in migration, focusing on changes in household structure and intergenerational support as well as issues and struggles confronted by these households.

2.1 The Contrast: the before and after internal migration

2.1.1 The soil attachment of rural society

Family is central to Chinese culture. It is the family, rather than the individual, that is the basic unit of Chinese society; it has been this way for several thousand years. Individual life opportunities and experiences are largely dominated by family interests and expectations, which are based on the individuals' internalisation of family values—filial piety, family glory, and family lineage. Although individualism and personal choices have gradually become well-accepted practices (Yan, 2018) in modern Chinese society today, family norms and values that have moulded the identity of Chinese people for over 4,000 years of Chinese history (Lee & Mock, 2005), still play an essential role in influencing and shaping the lives of the majority of Chinese people. Examples of “in the name of the family” include parental intervention and/or power over the younger generation's choices of university and major, occupation, who and when they date, marriage, and even on migration actions as well.

Family values and traditions along with family practices are embodiments of the patrilineal systems in China, the core of which is the *Continuum of Descent*. As described by Baker (1979, Chapter 2, p26), descent began from the remote past and stretches on to the infinite future, resembling a rope. This rope, made of strands or fibres, is the number of male individuals in a family. Thus, the (male) individual(s) personifies his forebears and his descendants; his existence manifests his *Continuum of Descent*—to keep the rope intact. Patrilineality regulates economic relations regarding inheritance, family relationships with respect to responsibilities and rights, both of which demotivated population mobility and migration.

First, since the Qin Dynasty (about 2,200 years ago), familial wealth has been equally divided between sons¹, which is called *fenjia* (household division, “分家”). This system of familial inheritance (Xing, 1995) has not only guaranteed the living and reproduction of Chinese families, but also strengthened the mentality of Chinese people worshipping their ancestors and following traditional ethics (Wang, 2005). By contrast, in western societies, the exclusive right of inheritance belonging to the eldest son pushed other sons to leave and migrate for living resources.

Second, according to clannism, relationship between the old and the young was moulded as the superior/inferior dyad. This inequality between generations could hinder population mobility and migration. In the Doctrine of The Golden Mean (*zhong-yong zhi-dao*) of Confucius’ studies, there are Five Types of Dyadic Human Relationships (*wu-lun*, “五伦”): emperor-minister, father-son, elder brother-younger brother, husband-wife, friend-friend. Each dyad is a superior/inferior relationship, apart from friend-friend. These superior-inferior relationships between old and young, along with the family support model that originated from an agricultural society, have together resulted in an attachment to soil life based on the family unit, as reflected in the old Chinese saying from Master Confucius “When your parents are alive, do not travel far” (*fumu zai, bu yuanyou*, “父母在, 不远游”). Wellbeing and individual development of the young depends on their caregivers—their parents and grandparents, who’s wellbeing conversely depends on the young in their old age. Family was the primary source of providing nursing care and old-age support, and adult children are the provider. Today, family still plays a predominantly important role in China for providing support and welfare for individuals, especially in rural areas (S. J. Shi, 2006).

Patrilineality guaranteed the social productivity based on family during the agricultural era, which cultivates the attachment to the soil. ‘Soiled’ is the cultural gene of Chinese people, as Fei describes it: “[Farmers are] [a]lways waiting for their crops to mature, those old farmers seem to have planted half their own bodies into the soil...” (1992, p39). In China, as in other ancient societies, the survival rate of children was low due to the low-level development of medical technology. To ensure the productivity of farming, both governments and families attempted to make the labour stay and prevent migrations. This immobility—the enduring attachment to the soil—laid the keynote of a relationship between people and space. “It’s normal for farmers to settle in one spot for generations; it would be abnormal for them to migrate” (Fei, 1992, p. 40). For thousands of years, when Chinese people did move or migrate, the main motivation would be to find another piece of land to be attached to once again.

¹ Although this system has changed significantly as women are now considered in the inheritance family wealth, especially after the one-child policy, some people do not have the choice. Still, the core spirit of equal division remains.

Although the family traditions and values that emerged and matured in ancient China have rejected and restricted population mobility and migration throughout Chinese history, modern Chinese society has been endeavouring to diminish the negative influence of family culture on individual and social development (Yuesheng Wang, 1993). For example, after the establishment of the People's Republic of China, over the last four decades, Chinese governments have advocated for gender equality and broader social equality in households, and used grassroots governance to replace clannism at the community level (Yuesheng Wang, 1993), which has encouraged social mobility and migration. This importance of soil attachment to rural societies and rural people was pinpointed by (Fei & Malinowski, 1939) in the first line of his book *From the Soil—the foundations of Chinese Society*, “Chinese Society is fundamentally rural”. He described rural living in the countryside as the “hayseeds”, who are “truly the foundation of Chinese Society”.

That the historical analyses of the determinants of Chinese internal migration can be grouped into two categories reveals the passivity of Chinese people towards migration. The first is due to natural disasters because of environmental degradation (Suhrke & Hazerika, 1993) or man-made turmoil like warfare (Muscolino, 2010), and the second is political mobilisation and state-led intervention, like the “Send-down Movement” and the Three Georges Dam Project (Zhou & Hou, 1999; Feng et al., 2021; McDonald-Wilmsen, 2009; Siciliano, 2014). Ordinarily, only under extreme natural and social and political circumstances would Chinese people migrate; to survive. On the other hand, when the population reached a saturation point, the surplus population had to migrate (Yu Lu & Teng, 2015). Overall, though, in the case of Chinese population mobility, the determinants are almost always involved with natural disasters and wars (Feng et al., 2021; McDonald-Wilmsen, 2009; Siciliano, 2014).

Once the out-migrated population found a new piece of land to survive on, they rooted themselves into the land—structural balance could be achieved again, and the stable relationship between the people and the land “for generations” would be re-established until external stimulations disturbs the balance, or another saturation point emerges (Fei & Malinowski, 1939). To migrate to attach to a new piece of land in the traditional Chinese society is an example of mechanical solidarity (Davis, 1963). However, the soil attachment has been gradually melted under the current wave of economic reforms and the cultural reframing of migration destination—the urban centrals, the markers and centres of modernity (X. Zhou, 1998; Lei, 2010), the ‘heaven’ (Treiman, 2012). Also, intergenerational differences in family values in China, especially among the more recent cohorts of rural Chinese in urban China, indicates profound social changes (N. Chen et al., 2001).

2.1.2 Divided pathways of socioeconomic development of urban and rural areas

“*Managing the economy according to economic principles*” (Schoenhals, 2018), along with state policies of demographic controls, has created the largest population migration in the world. However,

socioeconomic policies and interventions alone cannot make this large scale rural-urban migration happen without changes of cultural framing of the urban and the rural. Because changes on the micro level are the basis of institutional changes at the system levels (Coleman, 1990).

The urban is perceived as being modern and global (Ying Liu et al., 2018) and citizenship is perceived as necessarily urban (Solinger, 1999) by the rural citizens, as industries that provides employment and income, universities that educate the next generations, along with social services that guarantee life quality being only provided in cities. The social discourse of development and progress has made the rural-urban divide more pronounced; running parallelly is the media and culture that downgrades peasant identities as anti-modern and incompatible with the progressive nationalist narratives (X. Chen et al., 2011). Consequently, the urban is desired, forming one of the important motivations for rural Chinese, especially the more recent cohorts (Y. Hu & Scott, 2016), to migrate to urban centres. Such cultural framing of the urban has also led to concrete impact on people's subjective (perceived) social status; being able to migrate to urban centrals, especially to mega cities indicates increased subjective social status (Lu, 2022; X. Shi et al., 2010; Zhu & Luo, 2010; Ye Liu et al., 2015).

This city-oriented industrialisation and rural-to-urban migration has accelerated the speed of industrialisation and urbanisation, increased both the income of the urbanities and rural people; however, it's worth noting that the disparities between the rural and the urban and between the developed regions and the less developed regions are increasing (Treiman, 2012) due to the principle of cumulative advantage (Diprete & Eirich, 2006). As displayed in Figure 2-1, between 2010 and 2019, both the number of peasant workers and migrant peasant workers in the total labour force in China increased steadily. By 2019, there were about 290 million peasant workers and 180 million migrant peasant workers, respectively, occupying about 37 per cent and 20 per cent of the total Chinese labour force. This indicates there are a large number of rural people working either in their homelands or who have become out-migrants. As shown in Figure 2-2, China has experienced a fast and steady increase in urbanisation in the last four decades. The degree of urbanisation has increased from less than 20 per cent to close to 65 per cent from 1980 to 2021.

However, the increase of urbanisation rate and proportion of the rural workforce in the national workforce, does not indicate that the rural population is benefitting from the urbanisation or the proactiveness in the labour market. As displayed in Figure 2-3, the annual disposable income between the urban and rural households has been steadily increasing as well as the gap between the rural and the urban.

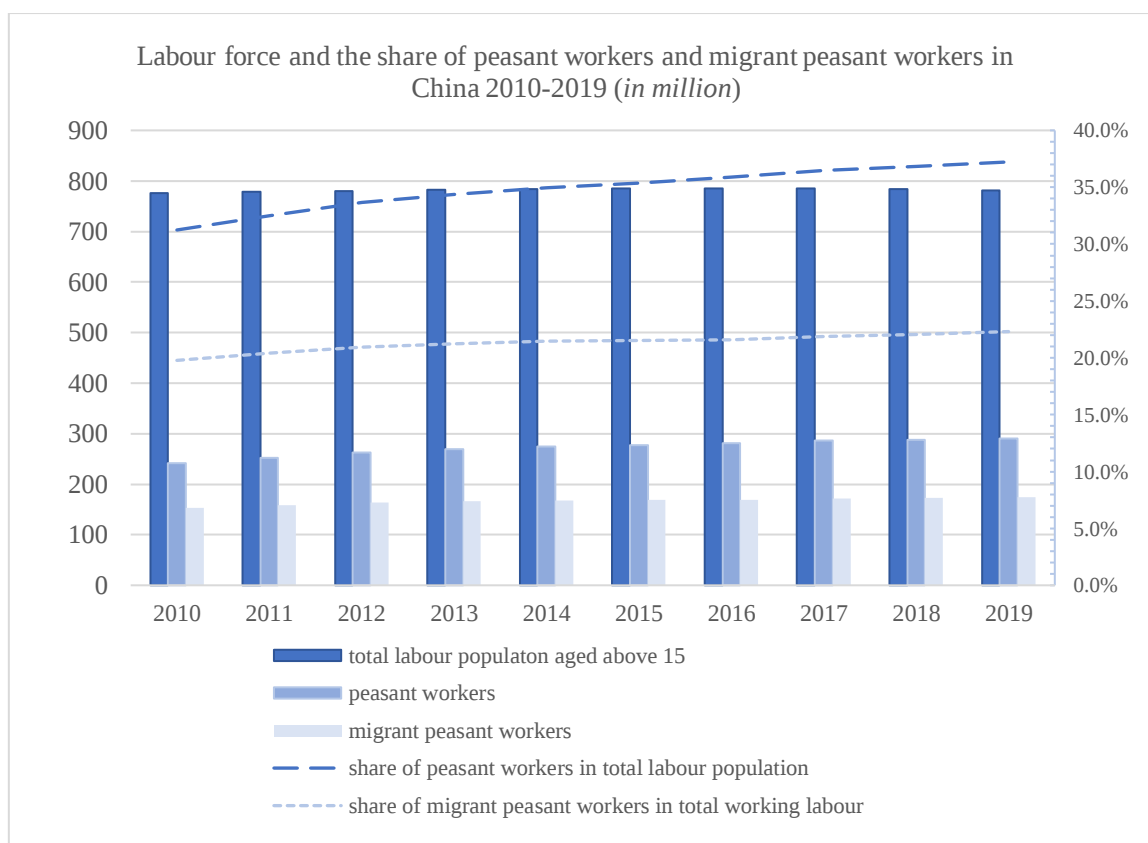


Figure 2-1 Total labour force and the share of peasant workers and migrant peasant workers in China 2010-2019
Source: Author's calculation using National Bureau of Statistics of China

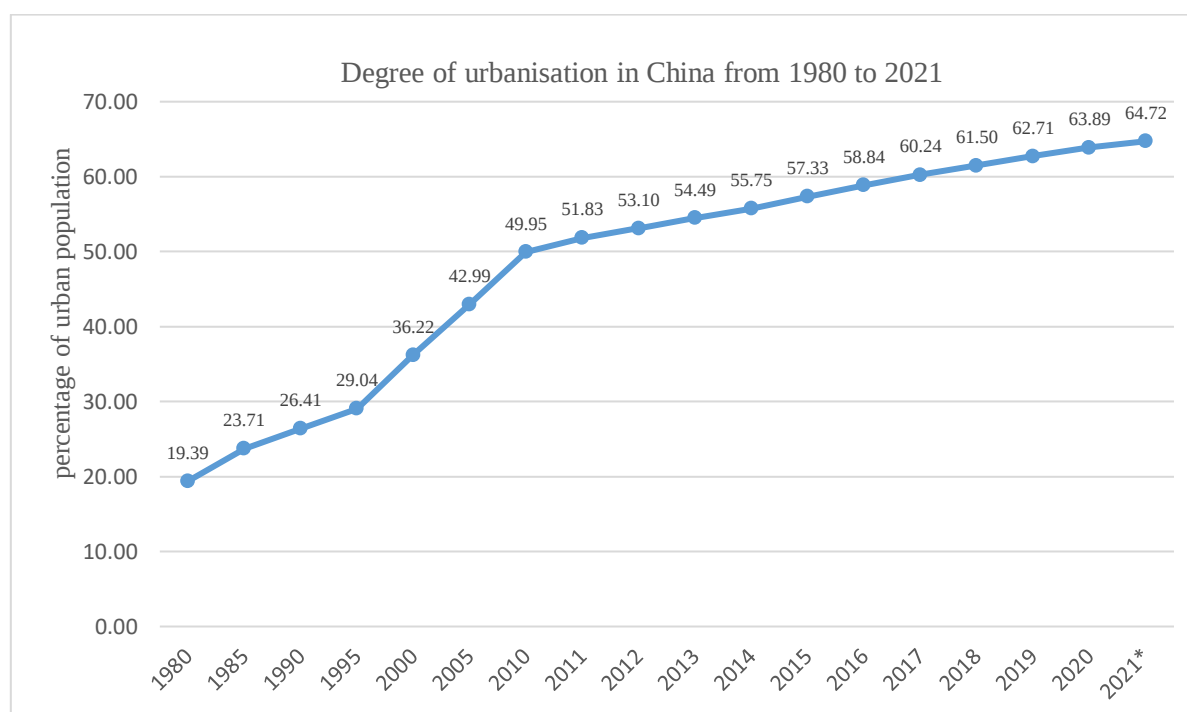


Figure 2-2 Degree of urbanisation in China from 1980 to 2021

Source: Author's calculation using National Bureau of Statistics of China

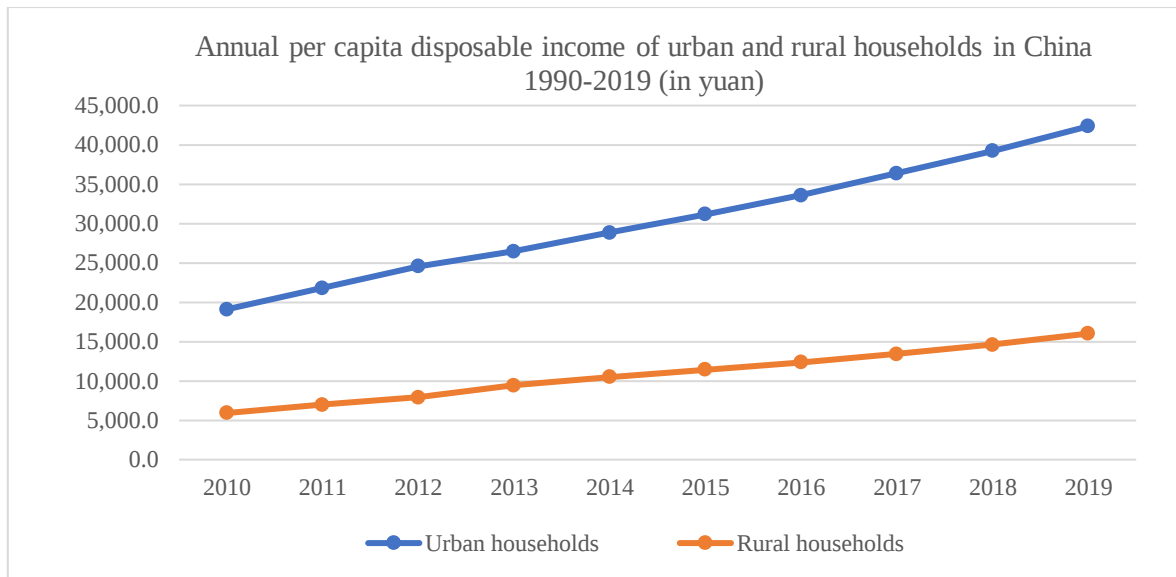


Figure 2-3 Annual per capita disposable income of urban and rural households in China 2010-2019 (in yuan)

Source: Author's calculation using National Bureau of Statistics of China

2.1.3 The economic differentiation of regions and the people

Xie and Hannum (1996) argue that in China, the most influential factor for earned income difference is not due to individual attributes but regional location. This is supported by Hauser et al. (2004), who investigated the earnings inequality between 1988 and 1995, and Solinger (1999) who wrote one of the seminal and most-cited books on Chinese internal migration and the rural people in cities.

In her book *Contesting citizenship in urban China*, Solinger (1999) argues there are two factors pushing the rural population out of the countryside in China: first, the political economy of state policies, which led to scarce arable land and surplus labour, made agricultural work unprofitable and rural incomes low, in addition to cutting off agricultural investment. Second, is the fragile ecosystem or pressing ecological problems of the labour export provinces. The consequences of these two “pushing” factors are three kinds of labour-exporting places and two types of migrants (Solinger, 1999).

The first kind of region is the one endowed with advantages— being proximal to transportation routes and local markets and, most importantly, woven into urban areas, or central sites of the marketing system as described by Skinner (2002). Villages in coastal provinces—such as Zhejiang, Jiangsu, and Shandong, which had developed a certain level of business and markets prior to the beginning of modernisation, fall into this first type. Rural people in these places are farmers as well as craftsmen, with potential skills to be commercialised and with a certain amount of capital (Skinner, 2002). Therefore, besides being pushed away by a lack of arable land and saturated labour structures due to political and economic changes, rural people in this category are also incentivised by the state's positive policies towards private entrepreneurship and markets (Solinger, 1999).

The second type of region is quite different to the first, these villages are quite geographically isolated and naturally inferior. Achieving self-sufficiency through farming is the main method of livelihood for the rural people in these areas. Thus, the rural population of this type are mainly pushed by the state's policies and inferior natural conditions Solinger (1999). Examples of these villages are typically located in central China, in nine provinces, including Anhui, Jiangxi, Henan, Hunan, Guangxi, Sichuan, Guizhou, Yunnan, and Gansu. The last type of Chinese region is the most deprived and remote places, where leaving is a challenge for people living there. Empirical evidence (Shen, 2013; Tao Liu et al., 2015) has also supported that most migrants in the urban areas are from central provinces and rural areas within these provinces, not from the most destitute areas or the most deprived households.

Solinger's (1999) typology of labour-exporting areas is supported by Chinese census—rural labour formed 65 per cent or more of the total labour in the countryside by 1990. The largest labour-exporting provinces nominated by Solinger are still the ones that export the most labour in China today, as illustrated by **Figure 2-4**. The main migration flow is still from the central provinces to the coastal cities, which has also been documented by many Chinese researchers (Duan et al., 2008; Gao et al., 2012; Liang & Ma, 2004).

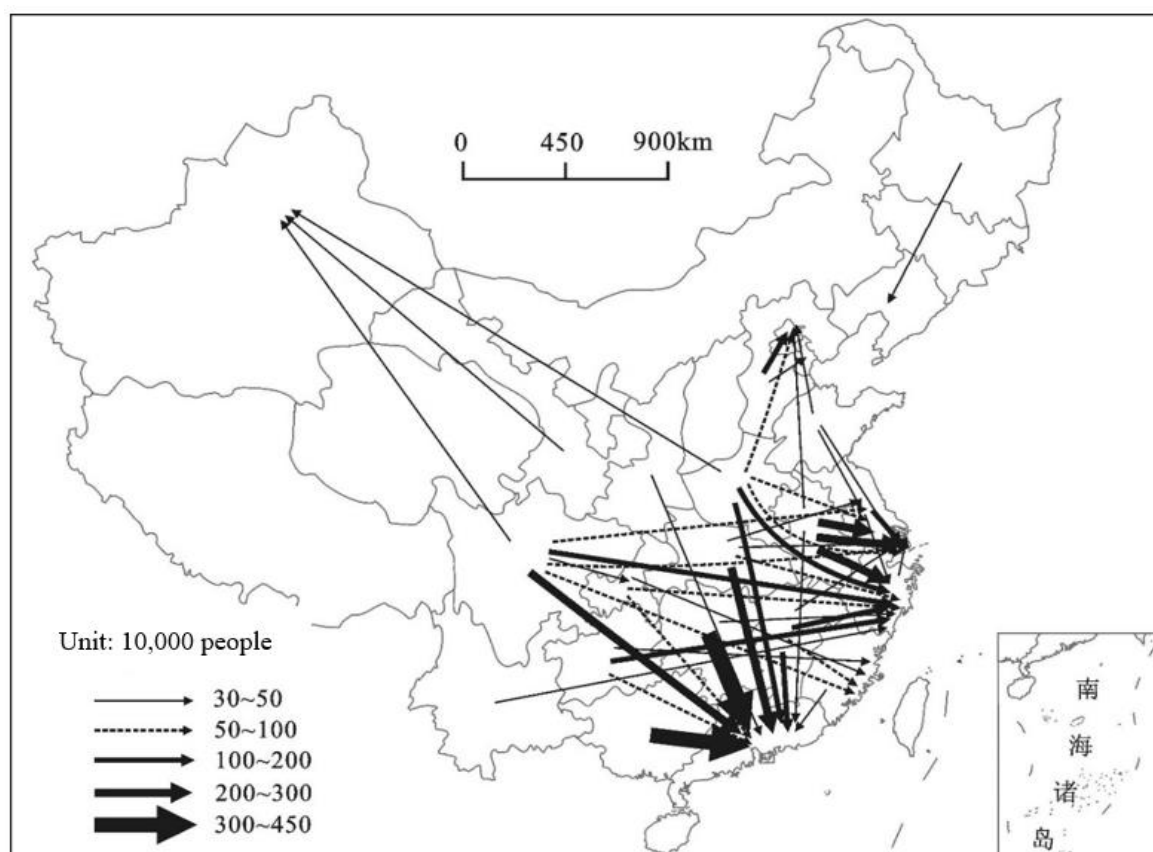


Figure 2-4 Sketch map of migration flow in China between 1995 and 2010

Note. Reprint from the article 'China's Rural Population Inter-Provincial Flow Based on the Sixth Nationwide Population Census (2012)'. Authors: Geng-he GAO, Qing LUO, Xin-sheng FAN, Erling LI, Xiao-Jian LI.

Regarding the typology of migrants, according to Solinger (1999), there are two types of migrants based on the first two kinds of regions. Type one is the surplus labourers, who are from central China and type 2 are the investing migrants from well-off coastal provinces. She mentioned that the most significant marker between these two types of migrants is the employment type—whether being self-employed/employers or employed. It is certainly true that some investing migrants come from central China and some wage-earning migrants came from the coastal provinces. But the pattern is clear that investing migrants are predominantly from coastal regions and wage-earning migrants are from central China, 90 per cent of total surplus rural labourers (who composed 80 per cent of the total rural migrant workers by the 1990s) in Chinese cities are from the central and western regions.

Because of the continued tie to homeland and villages, along with the discrimination and exclusion peasant workers have experienced in cities, most peasant workers are more likely to return to the countryside. What are the effects of the out-migrant rural population on their rural origins? The answer is not a straightforward “yes” or “no” because, again, it is related to the macro factor, the region. Which type of migrant and from which sort of rural areas they are from is the key to answering this question. Based on the two types of migrants and two kinds of places (Solinger, 1999), there are four types of combination: surplus labourers from coastal areas, surplus labourers from central and western provinces, investing migrants from coastal regions, and investing migrants from inland sections. The living and working circumstances of these four types of migrants in cities are quite different from each other, and their influence on their origins also differentiates.

Therefore, these different types of migrants return, and the socioeconomic influence on their home places are different. These investing rural migrants are more likely to set up their own Township and Village Enterprises (TVEs), creating job opportunities and tax revenues regardless of their returning to their coastal provinces or their inland origins, although quantitatively, the number of returning investing rural workers from coastal groups outweighs that in the central provinces of China. Whereas those wage earners who have failed to gain valuable knowledge by only selling manual labour outside are less likely to contribute to their homelands, neither can they find a job in their home places. Even if some returnees have skills, their original places cannot support them to use their skills.

Also, the differences of living and working between the two types of peasant workers are enlarging against the backdrop of internal migration. On one hand, migrants from the midland of China are struggling to settle down in cities. On the other hand, people in the rural communities from the coastal regions have already lived with semi-urban lifestyles, occupational attainment, and income (Zhou, 2001). Some studies have even observed a decreased willingness of peasant workers and rural people from the coastal regions to convert their rural *hukou* into urban *hukou* (Li, 2018; Lu & Wu, 2020; Zhou et al., 2022), because the value of rural *hukou* is increasing due to the rising land and homestead benefits, whereas the value of urban *hukou* is draining within the context of state socialism’s withdrawal and markets’ takeover.

This new scenario of the disappearing boundary between the rural and urban is not to suggest that China is experiencing anti-urbanisation. In fact, it is quite the opposite; this new trend is circumscribed within the coastal regions and reveals the growing regional polarisation. Take the income gap as an example, the difference between the rural and the urban has been increasing as illustrated in **Figure 2-5** and **Figure 2-6**.

Also, as displayed in **Figure 2-5**, the gap of household disposable income between rural regions is becoming increasingly sizeable, which however becomes less obvious when referring to urban household disposable income in **Figure 2-6**. If China is seen as a city, the coastal provinces are the urban area, and the inland and western regions are the rural part. Indeed, the latter seems not to benefit from migration. The western modernisation theory of migration (De Haas, 2010; Skeldon, 2014) and equilibrium framework (Mabogunje, 1970) have not triumphed there. Why has migration not brought prosperity and development to the regions sending the labour? Many studies have pointed to the institutional setting, the *hukou* system.

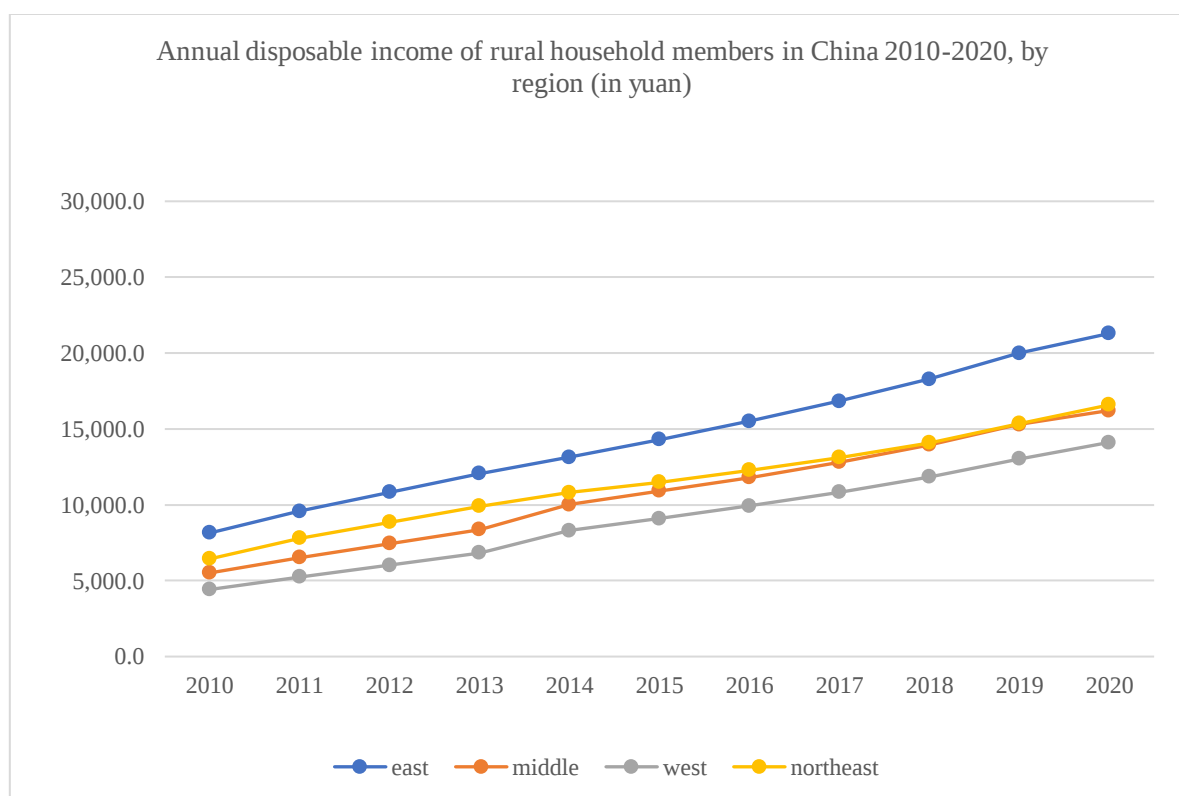


Figure 2-5 Annual disposable income of per rural household member in China 2010-2020, by region (in yuan)

Note. Figure is based on author's calculation using National Bureau of Statistics of China

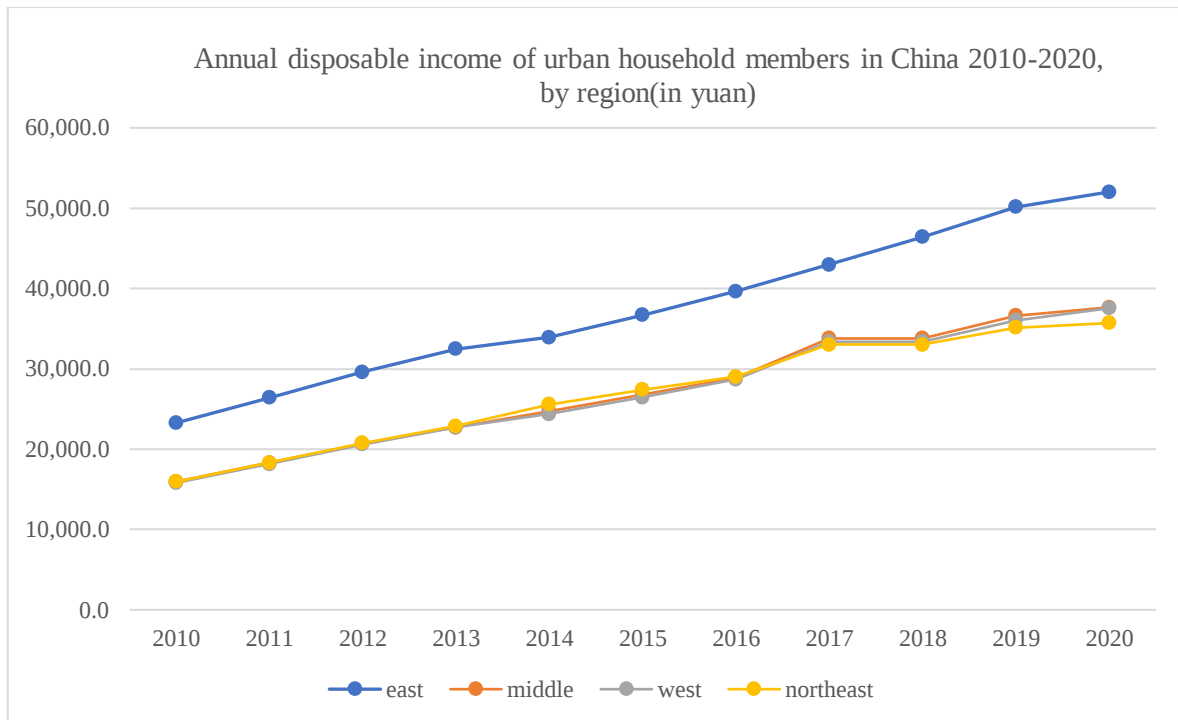


Figure 2-6 Annual disposable income of per urban household member in China 2010-2020, by region (in yuan)

Note. Figure is based on author's calculation using National Bureau of Statistics of China

2.2 The Institutional Background of Internal Migration

2.2.1 *Hukou*: the institutional arrangement in the pre-reform era

Chan (2009) describes the *hukou* (Chinese household registration system) as the “secret recipe” for China’s unprecedented economic growth during the last four or five decades. Although subjected to revisions and reforms during the previous several decades, whilst its power has been waning, it still plays an essential role in shaping the life experiences of most Chinese people today.

Hukou is made of two parts; the first is the *hukou* type (*leibie*)—either rural (*nongye hukou*) or nonrural (*feinongye hukou*), and the second is the residential place (*hukou suozaidi*)—the locale. Accordingly, a child born in China is assigned a *hukou* type, either agricultural or non-agricultural, based on the mother’s *hukou* status, and is registered in a local community, either a city, town, or village, which also depends on where the mother was registered. People with a specific *hukou* type have distinct and differentiated accessibilities to social resources and social rights. *Hukou*, along with other essential social policies, has turned rural people and peasants into subjects and noncitizens by the state in order to achieve the national target— industrialisation and economic development.

The purpose of the *hukou* system, as a tool to control population mobility, is to serve national economic development (Naughton, 2006). To achieve rapid industrialisation, the central government led by Mao formulated and introduced the *Big Push* industrialisation strategy. This strategy legislated the

unequal exchange between agriculture and industry, extracting resources in the rural sector to achieve capital accumulation (Chan, 1994; Naughton, 2006)— “the first and many continual pots of gold” for industrialisation. To enforce the extraction, the central government introduced three main institutions. *Hukou* is one of them (Chan, 1994). The other two main institutions are the rural collective economic system and the compulsory procurement and monopoly of agricultural production by the state (Naughton, 2006).

The rural collective economic system was designed to solve the ‘what and how’ to produce in the rural sector. Furthermore, the compulsory procurement and monopoly of agricultural production was for the implementation of unequal exchanges between the rural and urban. *Hukou* was to ensure that rural labour could only work in the rural sector, preventing the immense outflows from the rural to the urban and maintaining the exchange for a longer-term.

A dual economy and society have come into being and has gradually been fortified for the coming several decades. In cities, the industrial sectors are prioritized, supported, and protected under the strict management of the state. The workers and their families in cities also became part of the privileged sector. They were provided social welfare, including housing, education, medical care, and food, until 1978. However, the other part of the system was the rural population, which represented about 85 per cent of the total population and was not entitled to receive the benefits provided by the state. The rural sector, along with the subsystem, worked together to provide a large quantity of raw materials, labour, and capital for the urban sector at a very low price via “price scissors” (Chan, 1994; Cai, 2007). Nevertheless, though both subsystems must work together to achieve industrialisation, and to some degree, the rural sector is the foundation of the urban sector, the rural population were excluded from the state-provided social welfare, treated as the “residual” part, and expected to be self-reliant and were not allowed to move to cities (until 1978).

The residential place of a Chinese *hukou* holder can either be registered in a city, a town or a village. However, it is worth first noting that the English word ‘city’ can be quite inadequate to describe the diversity and complexity of cities (*shi*, “市”) in China because of China’s administrative divisions. Since ancient times, China’s administrative divisions have been composed of several levels due to the vast territory and large population. Today, there are three levels of government at the city level and two administrative levels beneath the city level² according to the Constitution of China.

The first level is the provincial one, including provinces, municipalities, autonomous regions, and special administrative regions, which is parallel to the ‘county’ in the U.K. and states in the U.S. By 2020, there are 33 provincial-level regions, which means there are 33 provincial-level governments.

² Although there has been some reorganisation of the provinces in the northeast after the establishment of the People’s Republic of China, provincial boundaries and the levels of local government have largely remained the same.

The 2nd level division is the prefectural level, including prefecture-level cities, prefectures, autonomous prefectures, and leagues. By 2020, there were 339 prefectural-level administrations. The 3rd level is the county, including county-level cities, districts in the 1st and 2nd level divisions, and three other parallel types from autonomous regions. By 2015, there were 2,852 county-level divisions, that is, 2,852 county-level governments. After the dissolution of rural communes, the previous political and administrative powers in the rural sector were formed into township and village governments under the Constitution of December 1982.

Township-level comes 4th, including subdistricts (in cities), towns, townships, and county-controlled districts. By 2017, there were 39,864 township-level subdivisions. Last is the basic autonomy level. In cities are the residential committee (*jumin weiyuanhui*; 104,083 units) and in rural areas are the village committee (*cunmin weiyuanhui*). In total, there are 662,393 basic-level administrative. These basic level autonomies are not entitled to political power; they serve as the organisational division for the census and mail system.

Regarding how this five-level hierarchical administrative system has worked to maintain *hukou*, is explained as follows. First, within each provincial area, only one provincial government rules all the prefectural-level governments, and each prefectural-level government rules its county-level governments within each subregion of the provincial regions. In turn, each county-level government rules its township-level governments within each county of the subregion of the provincial region. Therefore, a city in China can either be a municipal city, for instance, Beijing or Shanghai; a capital city of a province, e.g., Hangzhou (capital of Zhejiang Province); a prefectural-level city, e.g., Ningbo city (in Zhejiang Province); a county-level city, e.g., Yuyao (under the jurisdictional reach of Ningbo city). Therefore, it is obvious to say that cities in China are hierarchical due to the administrative system. It can be understood that there are 33 cities like Beijing on the first level, followed by 334 cities like Ningbo, and 2862 cities at the same level as Yuyao.

Hypothetically, there are no cities in township-level administrations, although with the socioeconomic development, towns may be county-level cities. In total, there are five types of hierarchical administrative units. Therefore, a Chinese citizen's residential place can be registered at one of the five-level administrates. Chinese citizens' official and only 'permanent' residences are their place of *hukou* registration; only in the birthplace were individuals entitled the right to civil activities and social welfare (K. W. Chan, 2009). The reason that such a length has been devoted to describing the Chinese administrative system is to provide a detailed elaboration to help understand the difficulties in rural-to-urban migration and *hukou* conversion (the vertical/upward social mobility) as well as the challenges of regional and rural-urban integrations.

The *Hukou* system functions much like race, but the difference is that *hukou* is conversable. To understand how the *hukou* system works along with its social meaning, significance, and consequences,

one needs to understand the *hukou* classifications and the possible ways to change *hukou*—*hukou* conversion. As will be discussed later, due to the decentralisation of fiscal and *hukou* policies to local governments, one of the social consequences of the increasing gap of socioeconomic development across regions is due to populations identifying themselves and others according to their *hukou* type and native provinces. This lays the social foundation of non-native discrimination, the secondary product of rural discrimination. Both discriminations make it hard for rural-urban integration, thus hindering social integration.

Hukou conversion, also called rural to urban registration mobility, refers to the change of *hukou* type, which is usually accompanied by a change of place. Although it was very rare to achieve *hukou* conversion in the pre-reform era, it was still possible for both institutionalised and noninstitutionalised channels for *hukou* mobility (Wu & Treiman, 2004). As concluded by Wu and Treiman (2004), the main pathways during the harshest period to achieve an urban *hukou* are three. The first is education—being accepted as a student in a city and applying for urban *hukou* (*Zhaosheng*). Another two indirect pathways are to join the Chinese Communist Party (CCP) (*Rudang*) and to join the People's Liberty Army (PLA) (*Canjun*). Although becoming a CCP member or a soldier of the PLA cannot guarantee *hukou* conversion, individuals who have one of these political identities are more likely to be recruited as rural “cadres” and work for the state bureaucratic system and are eligible to obtain an urban *hukou* (Wu & Treiman, 2004). There are two informal ways to change *hukou* status: migrate with a household member who is an urban *hukou* holder (*Suiqian*) or marry an individual who is an urban *hukou* holder (Fan & Huang, 1998). Since China's economic reform (that is, prior to 1978), rural *hukou* holders have been allowed to move to the urban areas without changing their *hukou* status (K. W. Chan, 2009).

In this post-reform era, the *hukou* system has gone through several reforms, and the overall direction of *hukou* reforms is to be more inclusive (Chan, 2009). At the same time, since political and economic power from the central government has been devoted to the local governments, some local governments have allowed the rural migrants to apply for *hukou* conversion (Chen et al., 2017). In fact, only a very small portion can meet the several high levels of socioeconomic standards required to change their *hukou* status. Indeed it remains challenging for the rural population, including those who have been working and living in towns and cities for years (Chan & Buckingham, 2008; Chan, 2010).

According to the latest *hukou* policies issued by the Chinese Central Government, *hukou* conversion has become even more difficult. *Hukou* conversion for joining family members has been cancelled in mega cities and the standards of wealth or educational attainment to meet for *hukou* conversion have been raised to a prohibitive level. Zhang and Treiman (2013) argue that the two-class rural-urban Chinese society has been transformed into a three-class one, composed of urban *hukou* holders who are on top of the institutional arrangement, followed by those registered as rural *hukou* but living in cities in the middle, and those with rural *hukou* and rural residence at the bottom.

2.2.2 Openness to the international economy and domestic market liberalization

Economic reforms since 1978 hallmarked the starting and a continual process of far-reaching institutional change and societal transformations. Market forces have been brought into the Chinese economy to unleash individual and local initiatives for productivity and economic growth. As pointed out by Harvey (2007), “*For what the Chinese had to learn, ..., was that the market can do little to transform an economy without a parallel shift in class relations, private property, and all other institutional arrangements...*”.

Actually, it is in the rural sector, as the most exploited under the centrally planned economy, kindled sparks of economic reform (Li, 2012). The legendary family contracted land system was created by a small group of peasants in a village called *Fengyang* in Anhui Province in the late 1970s (Li, 2012). They found the commune system design by the central government had shackled the motivation and potential of labour, and if the productivity in the rural sector needed to be improved, privatisation and personal responsibility should be introduced. Supported by the village administrators, the privatisation and personal responsibility on the level of the family secretly experimented on the farm work proved to have efficiently motivated labour, as well as massively improved agricultural productivity (Lu, 2006). This secret illegal but successful experiment in the rural sector was later found out and adopted by the central government, named as “family contracted responsibility system” (*jiating lianchan chengbaozhi*, “家庭联产承包制”). The later adoption and promotion of the “family contracted responsibility system” across the country by the Chinese government signalled the dissolution of the rural commune (Watson, 1983). Since the early 1980s, peasants were allowed to sell surplus grains at the market price after handing in the grain quota for the exchange of using the land — signalling the collapse of the dual price system (McMillan & Naughton, 1992).

Besides the ‘family contracted land system’ and introduction of market price in rural areas, a more important change is land circulation (Liu, 2020). By the end of the 1980s, although land was owned by the state, peasants were allowed to lease or rent or hire other people to work on their lands. Due to this, productivity was greatly improved and surplus labourers were created (Liu, 2020). Price reform and land circulation has not only laid the foundation for market economy but also liberated the entrepreneurial freedoms and skills of rural citizens. The industrialisation of agriculture and application of technologies has created and enabled one of the most important market factors, labour to move freely, to be allocated by price mechanism according to the demand and supply of markets (Liu, 2020).

Meanwhile, the Chinese government has designated “open economic regions” and “open coastal cities” for foreign investment since the late 1970s, as displayed in **Figure 2-7**. The growing foreign direct investment in urban areas and privatisation in the rural sector have created a set of “pull and push” forces (Jedwab et al., 2017; Singh & Aggarwal, 1998). The surplus rural labourers were pushed out of farmlands and were largely absorbed by manufactures in the urban; China as a latecomer

of industrialisation, its modern industry was heavily reliant on labour and requiring only modest capabilities (Brandt et al., 2017), which is still the case today to some degree. Experience and skills accumulated by state enterprise system during the plan-era were used for township-village firms and private manufacturing sectors during the reform-era (Dinh et al., 2013). The summon of diaspora of labour in the vast less developed and rural areas to the urban areas begins at the very beginning of reform-era and continues today.

Rapid industrialisation and urbanisation absorb massive labour reserves from rural areas, whereas due to the *hukou* restriction, most of the labour from rural areas cannot settle down in urban areas (K. W. Chan, 2009). These rural migrants creating the annual “spring movement” during the national holidays. When economic recessions hit, these rural migrants return home and come back to cities when the economy recovers (Xia & He, 2017). Due to this bidirectional move between the rural and urban areas, these migrants are called “peasant workers”, “floating population” or “floaters” (*liudong renkou*, 流动人口) by Chinese officials (Solinger, 1999). Ironically, rural migrant workers, who have contributed to socioeconomic contribution for cities and the nation as a whole, have never been paid off. They are rootless in cities (Solinger, 1999) because they have no urban *hukou*. If migrating to and working in the urban areas do not pay off from the economic perspective, why migrant workers are still heading to the urban centrals. In the next subsection, I investigate this puzzle from the angel of social welfare and the role of family.

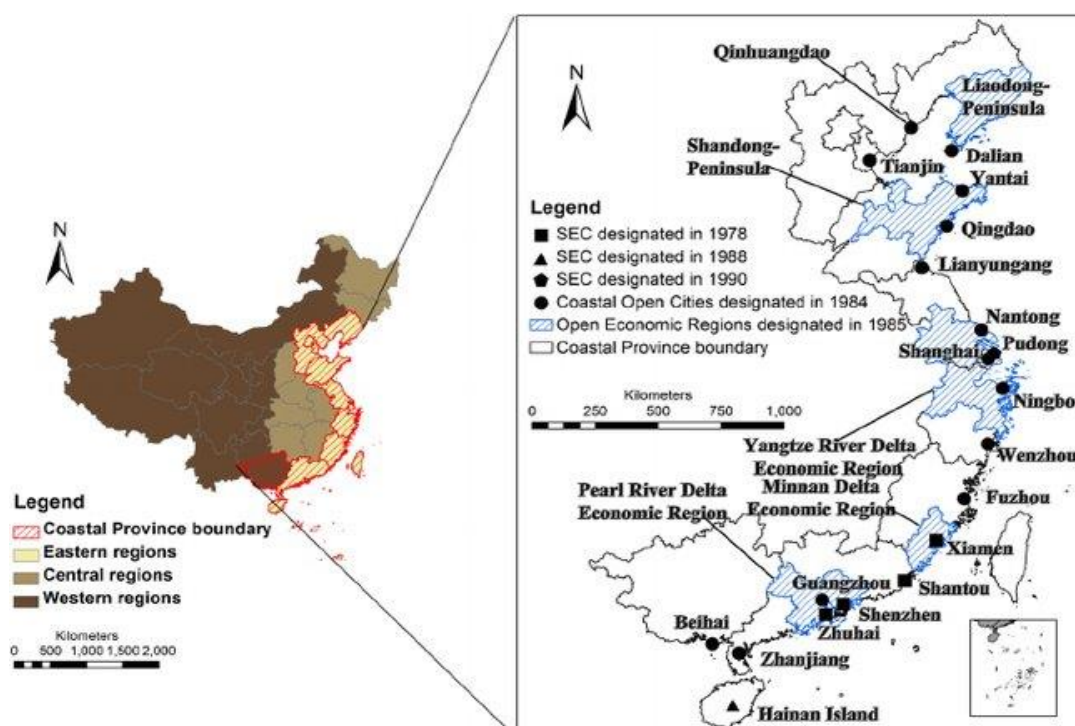


Figure 2-7 Chinese economic regions

Note. Reprint from Chinese regions and SEZs and Coastal Economic Development Zones after the economic reform
Sources: Liu, J., Wen, J., Huang, Y., Shi, M., Meng, Q., Ding, J., & Xu, H. (2015). Human settlement and regional development in the context of climate change: a spatial analysis of low elevation coastal zones in China. *Mitigation and Adaptation Strategies for Global Change*, 20(4), 527-546

2.2.3 Social welfare support in rural China: the role of the family as the agent for household wellbeing

This section serves as a short explanation of the generation and maintenance of the welfare system in rural China from a historical, political, and cultural perspective. This short introduction of the welfare system in China serves two purposes. First, it can benefit a better understanding of why rural-to-urban migration is an important strategy for rural families to hopefully expand on welfare and improve the wellbeing of the whole household. Second, the delineation of how institutional changes in the past affected family life, helps understand how economic reforms and internal migration happening today would make a difference on wellbeing and family life today.

In Feudal China, the government and the state were indispensable providers of social welfare. They provided social protection against invasions, social relief services for natural disasters or after wars, and social assistance for vulnerable social groups (Zhou, 2005). The old, the sick, the disabled, and the poor can obtain some assistance from the government, but only at the subsistence level (Wang et al., 2003; Wang & Huang, 2005). Historically, and for a long time, the government from one dynasty to another all provided very limited and fragmented welfare services to the population because the emperors and the governors believed the state should bear the least number of responsibilities for the stability and development of the country (Wang & Huang, 2005).

Confucian values defined and rationalised the role of family and family members in welfare provision (Wang et al., 2003). In the Five Types of Dyadic Human Relationships (*wu-lun*) mentioned above, three stratified relationship dyads indicated the welfare provider-receiver relationship within a family, the father-son, elder brother-younger brother, and the husband dyad. The father-son relationship is especially emphasised; filial piety is for this parent-child relationship, which demands a responsibility from the parents for their children's welfare and wellbeing, and in return, the adult children are then responsible for old-age care and support of their parents (Y. D. Han & Huang, 2019).

Meanwhile, nongovernmental organisations based on communities, clans, and associations gradually grew and complemented the welfare system along with families and local government, providing supplies, material and nonmaterial support as well (Wang, 1992).

After the establishment of People's Republic of China (in 1949) and before the economic reforms (in the late 1970s), the rural population had never been supported compared with its urban peers, although the social welfare system in China was "support-led" by then. According to the existing literature (Gersovitz, 2016; Y. D. Han & Huang, 2019; L. Huang, 1995; Z. Wang et al., 2003), the social welfare system in China between 1949 and 1978 was based on an urban-rural dual structure, favouring, and prioritising urban dwellers and workers in the public sectors. The Chinese central government built the Insurance System for Urban Enterprise Workers (1951), the State-funded Public Medical System (1952), the Corporate Welfare System (1953), the Retirement System for the Personnel in government

Departments and Public Institutions (1955), covering health care, pension, education, housing, transportation, and so on.

For the rural part, it had the Five Guarantees Scheme (1956) and the Cooperative Medical Service (1962). Although the welfare arrangements in rural regions were mainly based on collective work, the state never engaged in rural welfare affairs implemented by the people's communes, production brigade, and production team (Y. D. Han & Huang, 2019). The local government provided cooperative medical services, public social services, and limited elementary and civil education of socialism, but the budgets were limited and regionally differentiated (Y. D. Han & Huang, 2019).

When the commune system collapsed, the period between 1979 and 1997 witnessed China's transiting from a planned economy to a market economy. The social reform during this period was targeted at building "a multi-level social security system, providing both the urban and rural residents with social security services, to sustain economic growth and to maintain social stability" (Croll, 1999). But the most affected were the urban residents, not the rural. For the rural population, it signalled the end of the social experiment on socialist welfare reforms and the regression to the family as the primary and the last resort of welfare provision, including medical care, primary education, old-age pension, and family planning and so on.

The family in the Chinese social context has been shaped and strengthened as an essential unit for welfare provision in the past, especially for the rural people. For them, the pathway of welfare provision in the present and the future is and will still be the family.

In modern China, starting from the economic reforms and during this transforming period, the system of social welfare has been gradually directed toward a "growth-led" policy by the state. This change has cut down the central government's budget on the welfare system, which privileged the urban population (Gao et al., 2013). However, for the rural population, who had never been entitled to social welfare as their citizen peers, the welfare reform, brought by economic reforms, has faced even more financial burdens than during the commune period (Hu et al., 2020; L. Huang, 1995). However, this does not mean there are no welfare provisions, social insurance, or services for the rural population. Instead, the social welfare system in rural China is a diverse and multifaceted system based on multiple providers: the state, the community, and the family, among which the family or household has played an essential part since ancient times.

Since the 2000s, the Chinese government has taken multiple initiatives to promote welfare in rural regions. These initiatives include the new cooperative medical and health system and the minimum living allowances. On the other hand, there are emerging concerns, for example, the reduced rural pension, the commodification of social welfare, and the very limited coverage of rural population and financial support (Xue & Xian, 2014; Mu, 2013; Huang, 2014).

The welfare system after the 1980s entered the household-contract-responsibility period (Y. D. Han & Huang, 2019). Household-contract-responsibility derived from economic policy and production has also influenced the provision of rural welfare and welfare governance. The main characteristic of rural welfare is market-oriented, hierarchically administrated by the central government, and regionally by the local government after the devolution of responsibility for *hukou* policies (Wang & Chen, 2017). Family and individuals play the leading role in maintaining their social welfare resources through participating in the market, that is, the ability to work and the ability to pay. The power of Cooperative Medical Service (1962) and the Five Guarantees Scheme (1956) has declined, and rural social pension is in plight (Selden & You, 1997). There is hardly any rural service left available free of access to the rural population of China.

Therefore, it can be concluded that welfare in rural China has evolved into a family-based welfare system, a realistic familism approach (Huang, 1995). Family is the cornerstone of welfare production in rural societies—the core of the welfare system for the rural population. It is surrounded by nongovernmental providers based on communities and association—the second layer of this welfare system. The state and government as the provider of social protection and basic social relief and assistance services (Fang, 2000) is the third layer and the most outsider layer, which has kept compelling the family to play a changing and everlasting role of providing welfare. Indeed, the generation of this realistic familism welfare approach is the product of the ignorance of the state, which in turn strengthens the role of the family and at last, it has become a cultural matter for the family-based welfare system (S. J. Shi, 2006).

2.3 Migration at the household level: An adaptive family strategy

2.3.1 Who migrates? Who stays?

A large number of Township and Village Enterprises (TVEs) are established since 1990s, which increases the employment rate of the communities and the income of the rural people (Oi, 1999). This TVEs pattern to provide surplus rural population with employment and income, however, is less likely to work in the vast central regions (as displayed in **Figure 2-7**). A large number of people living in rural areas from the hinterlands must leave their homes and make a living in other places.

In traditional migration theories, migration is seen as an individual matter (Stouffer, 1960; Sjaastad, 1962). Individuals were seen as the rational agents, estimating the push factors in the homelands and pull factors in the destinations. Migration is used as a tool to maximize personal benefits—that is, to find a job that can bring more income (Todaro, 1969). With research on migration progressing, the family or household has gradually caught the attention of migrant researchers (Greenwood, 1985; Taylor et al., 2003). Migration has been received as one of the household strategies

to diversify and optimise household labour use, reduce economic risks, and maximise family income and welfare (Stark & Bloom, 1985; Ellis, 1998).

However, although migration can be a family's decision, not all family members are necessarily involved in the actual migration. According to the National Statistics Bureau of China (2020), 70 per cent of the 174 million migrant population are males, and 68.8 per cent of the 174 million are married. More than 80 per cent of migrants are between 20 and 50 years old, with the proportion of migrants aged above 50 increasing gradually and having amounted to about 25 per cent by 2019.

According to the Chinese census, the proportion of migrants bringing their family members with them to the cities is increasing; however, the absolute proportion was still around 21 per cent by 2014 as displayed in **Figure 2-8**. A majority of family members are left behind in rural areas, among whom are wives, children, and the old. These left-behind populations constitute the main rural population and they are called “38-61-99 Army” (386199 *jundui*), first coined by Du (2004) in a top Chinese journal Population Research. “38 (March 8th, International Women's Day)” refers to the left-behind wives, “61” (June 1st, Children's Day) indicates the left-behind children, and “99” represents the elderly (September 9th, Chongyang Festival, the day honouring the elderly in China).

Although migration has become vital for families to maintain basic supplies, including education and medical care, it has caused substantial family instability and harm to family relationships. Since the 1980s, large-scale migration has brought significant changes to the structure and living arrangements of families involved in migration in a voluntary or involuntary way. By 2019, there were 236 million migrants, an increase to almost twice of the 121 million in 2000. Furthermore, among the 236 million, about 174 million are rural-urban migrants (National Statistics Bureau of China, 2020). Indeed, a large amount of literature has pointed out the detrimental effects of migration on the household stability and the mental health and wellbeing of the left-behind population (Goldstein et al., 1990; Gui, 1988; Huang, 2006; Zhang, 2013; Yue et al., 2014; Wang et al., 2016; S. Wang et al., 2017; Long et al., 2020; Silverstein et al., 2006; Ren & Treiman, 2015; Ren & Treiman, 2016; Yi et al., 2019; Pan & Dong, 2020).

Figure 2-9 displays changes in rural migrant workers with no/illegal contracts in China between 2001 and 2014. As shown, although the proportion has dropped about 25 per cent, the overall proportion of rural migrant workers having no/illegal contracts was still as high as 62 per cent by 2014. According to the census on rural migrant workers (National Statistics Bureau of China, 2017), in 2016, the proportion of rural migrant workers who did not have contracts with employers was about 65 per cent. Among the 35 per cent of those who had a contract, more than 15 per cent of their contract length was beneath one-year or unfixed. Only about 20 per cent of the contract length was one-year or above, but no one had signed a permanent contract. Because of this, social benefits conditioned on employment

and job after the welfare reform are unapproachable for migrant workers, nor the government-provided subsidies.

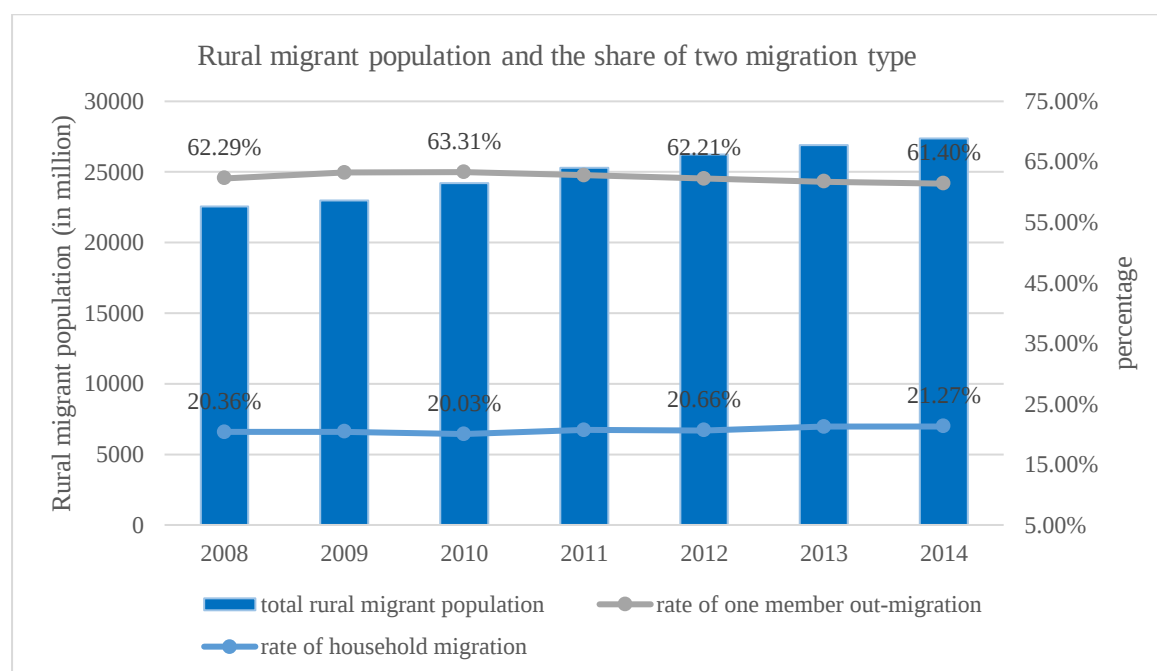


Figure 2-8 Rural migrant population and the share of two migration types

Note. Based on Author's calculation using National Bureau of Statistics of China

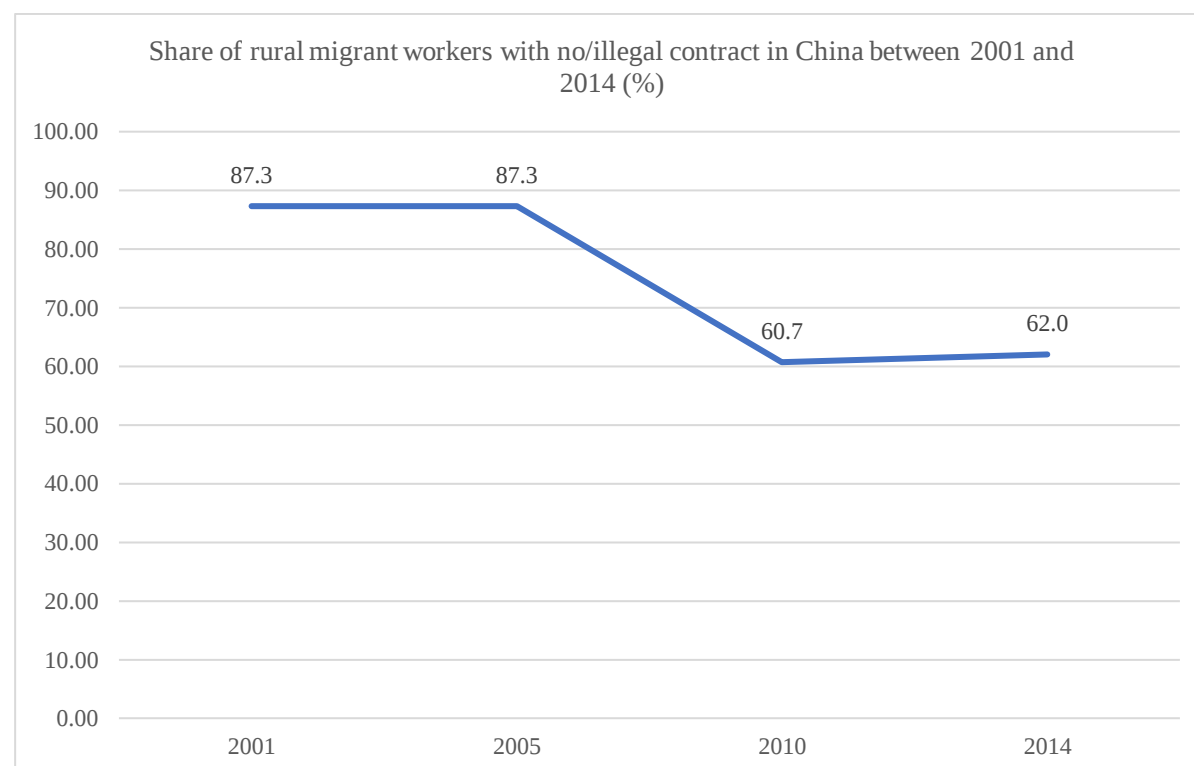


Figure 2-9 Share of rural migrant workers with no/illegal contract in China between 2001 and 2014 (%)

Note. Based on author's calculation using National Bureau of Statistics of China

Figure 2-10 displays the share of four types of insurance provided by migrant worker employers in 2011 and 2017. As shown in the figure, although the proportion of employers providing four social insurances increased, especially on unemployment insurance and pension insurance, the overall situation was not bright. The proportion of employers providing health and pension insurance was just over 20 per cent, and for unemployment insurance coverage, it was just about 17 per cent. All these three types of insurance provision rates are much smaller than that for urban workers' employers. Although the rate of employers contributing to the occupational accident insurance has been increased to approximately 27 per cent, it is worth noting the fact that this type of insurance was notoriously ignored by employers for a long time due to the lack of laws and regulations protecting migrant workers' rights.

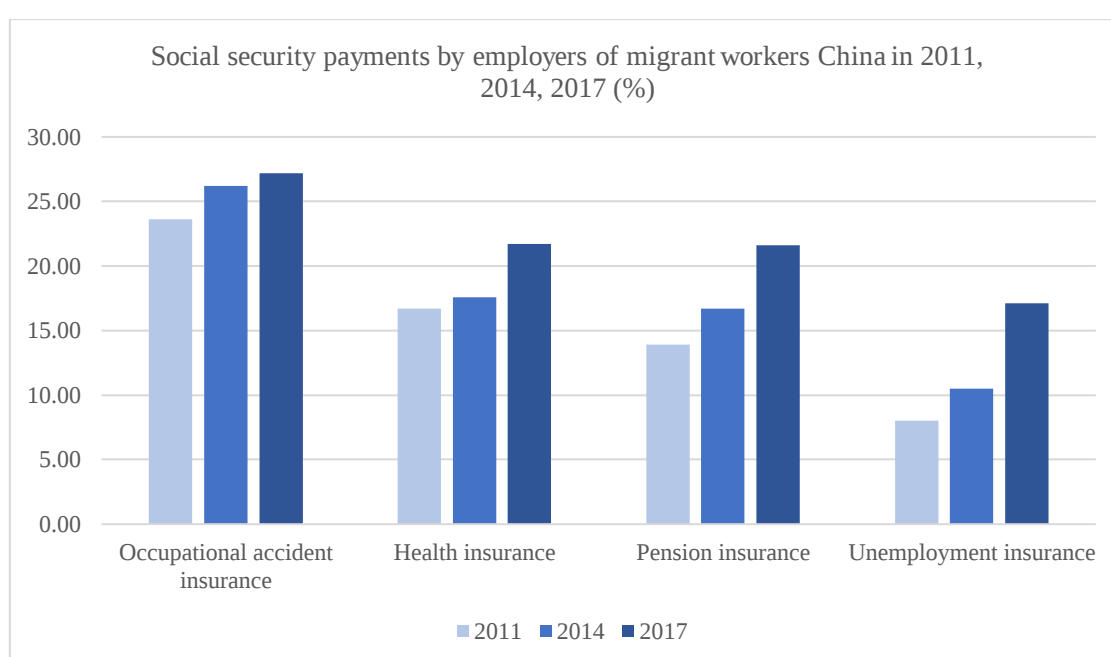


Figure 2-10 Social security payments by employers of migrant workers China 2011, 2014, 2017 (%)

Note. 1. Based on author's calculation using National Bureau of Statistics of China; MOHRSS; World Bank. 2. Starting from 2014, figures had been published regularly by the National Bureau of Statistics of China in their annual report on migrant workers. Figure on maternity insurance (8.7%) was only released in 2014; however, since this year figures on social security payments of migrant workers have not been included in the officially published version of that report. 2017 figures represent the most recent data on this issue published by the source.

Figure 2-11 displays the average living space of urban migrant labourers' accommodation in China in 2017 and 2019 by the scale of the city (in square meters). As can be seen, migrant workers working in the smallest cities have the relatively largest size of the accommodation, though this was just above 23 square meters. And when the city scale is above 500 thousand inhabitants, the living space of migrant workers is approximate to 20 square meters: no difference between cities with one to three million inhabitants and those with more than five million people.

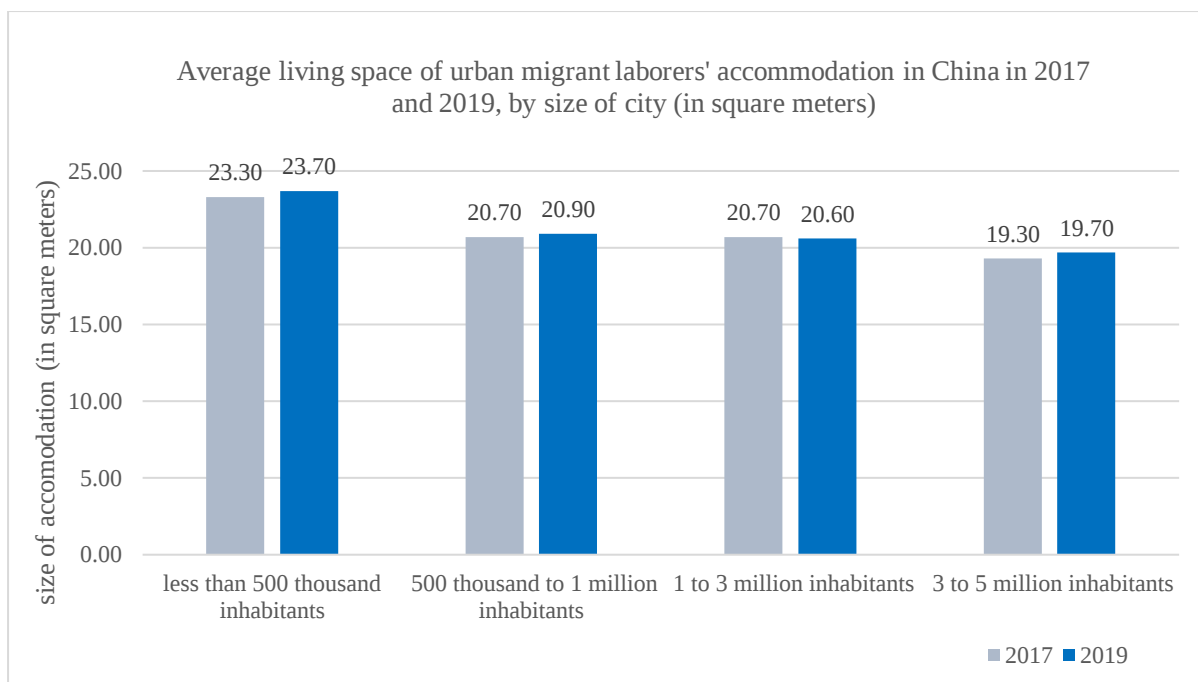


Figure 2-11 Average living space of urban migrant laborers' accommodation in China in 2017 and 2019

Note. Based on author's calculation using National Bureau of Statistics of China

2.3.2 Changes in rural household structure and intergenerational support

Because of migration, tensions between familyhood and individuality and intergenerational differences have been revealed, reflecting cultural changes and some erosion of traditional values in Chinese societies. The absence of the middle generation due to migration has led to a new type of household structure in rural areas, called the skipped generation households (SGHs), which have gradually become the dominating household structure of rural households involved in migration since the late 1970s.

The first type of tension experienced by migrant adult children who are also parents comes from incompatible responsibilities of being a caregiver for youngsters and being a breadwinner for the entire family. For young migrant parents, it's difficult to raise children in cities because of work-related stress, financial hardship, difficulties in adapting to the environment (Zhong et al., 2016). In addition, not being entitled to social welfare in cities due to *hukou* constraints, they are less likely to have extra space for their children, not to mention purchasing a house and settling down in the cities (Li et al., 2010). It is neither economic nor practical to bring children to the cities for most young migrant parents. Majority of rural children are left behind with their grandparents, with the old generation being the surrogate parent to raise grandchildren in SGHs. This actually leads to the second type of tension in households with migration.

Different understandings of filial piety between the out-migrated adult children and the left-behind elderly parents can cause the second type of tension. Although providing care for grandchildren is not unique to China (it has also been widely practised in western societies), caring for grandchildren

as one of the embodiments of filial piety is extremely honoured in traditional Chinese society, as according to Mencius, “all fathers (parents) and sons (children) in the kingdom were established in their respective duties” as Tu has interpreted (Tu, 1998, p. 125). For Mencius, parents have certain duties toward their children, which emphasises love and benevolence besides providing material resources. To be materially and emotionally supported by one’s children is the fruit of a parent’s love and benevolence. Providing caregiving and share the household burden of their children is one of the most importance embodiment of love and benevolence, especially in rural regions (Fan, 2006).

As Chinese scholars (Fei, 1983; J. Chen, 1998) pointed out filial piety, as a reciprocal interaction between parents and children, works as a loop. It starts from parents’ child-rearing, and it ends at adult children’s future filial return. Thus, this parental investment—children’s filial return process is a lagged reciprocal interaction. And because of this, there exists a period when parents do not require children’s support or filial return while grown-up children do not need child-rearing. To sustain the intergenerational relationship and guarantee adult children can reciprocate filial return, continuously providing support including economic support, housework sharing, and grandchildren caregiving (Y.-J. Lee et al., 1994) is an efficient way (Qi, 2017).

This parental investment—children’s filial return pattern has social roots: as in rural China, public services including nursing are very limited, a rural Chinese elders’ contribution to childcare is an irreplaceable part of the overall family coordinated strategy to maintain the basic wellbeing of the entire family (Silverstein et al., 2006). Rural grandparents’ contribution to childcare allows their adult children to concentrate on economically productive activities in urban areas that can benefit the rural families and rural communities through the remittance sent back while making contributions to China’s economic and social development overall (Silverstein et al., 2006). However, considering only how much rural elders can contribute themselves to childcare would fall into the pitfall of functionalism because rural elders have their own needs and expectations.

According to role enhancement and scaffolding theory, it is hypothesised that in skipped-generation households (SGHs), providing childcare can benefit the emotional wellbeing of the old generation, but researchers have consistently pointed out that the psychological costs of elders being surrogate parents outweigh the benefits (Ren & Treiman, 2015; Wen et al., 2019). Also, Wang et al. (2013) reported that Chinese elders living independently rate themselves with higher emotional wellbeing than those living with the third generation, especially for those senior elders aged above 80. The latest research, based on one typical labour-exporting province (Silverstein & Zuo, 2021), reported that caregiving frequency itself has no impact on the emotional or cognitive health of grandparents, but custodial care is negative if the grandparents are not economically well supported.

Remittance cannot trade off the absence of adult children, as adult children living with elderly parents resembles the filial piety. Note that the Chinese have a traditional belief in raising children to

prepare for the old age (养儿防老, “*yanger fanglao*”), especially in rural China. The traditional way for adult children to provide old-age care and support for rural elders is to take turns to look after the old parents among them, rotating on a month-to-month basis. Chinese elders are not only expecting financial and material support from their adult children but also emotional support and care through day-to-day interactions by living under the same roof. However, due to migration, some rural elders might have no adult child to emotionally rely on since all their adult children have out-migrated. Remittances are sent back from the out-migrated adult children, but support in daily life, farming work, and emotional support has decreased dramatically (Pan & Dong, 2020). Studies have reported that a majority of rural elders are reported as being lonely and depressed in the absence of their adult children (A.O. et al., 2016; Cong, 2008; Guo et al., 2009, 2018; Silverstein et al., 2006b; Song, 2017a, 2017b; Scheffel & Zhang, 2019).

2.3.3 Consequence: the dissolution of family life in rural China?

Western researchers have widely suggested that the family will emerge as a private, intimate entity. However, the status of families in rural China has obviously challenged the widely accepted interpretation of family life transformation. The social facts are self-revealing: large numbers of rural families are experiencing family separation, with family members left behind in rural areas suffering from mental health issues or low emotional health, and others in the hosting cities confronting the frustration of not being accepted. The widely accepted interpretation and family forms is based on the research contextualised in Western Europe and in the United States and are heavily contextualised on the middle-class family. These interpretation and formulations might not work well in developing countries and these countries’ families, who have a separate set of family norms and values contextualised within their history and social backgrounds.

As Engerman (1978, p. 275) mentioned, “the family is, in essence, a group of individuals of varying ages with unequal decision-making power, and with a bond of ‘love’ and ‘altruism’ not generally thought to be found in other groups in our society.” When the decision to migrate is made, it affects the entire family group, although in a unique way for different family members. Whether the ‘love’ the family has endeavoured towards, via migration, has been achieved, and whether such ‘altruism’ has paid off for the family deserves further investigation.

Consider the children of migrant workers first. Children become either the migrant children in urban areas or the left-behind children in their homeland. Wang and et al. (2018) have pointed out that social discrimination from the urbanities imposes stronger impacts on the mental health and cognitive development of migrant children than on migrant adults, as discriminated experiences through their initial contact with cities could create long-lasting negativity in their impression of not being accepted by the cities. If rural migrant children, as well as their migrant parents, do not feel that they are being

welcomed by the cities, then these rural children would be sent back home. These children may not be initially come to cities with their migrant parents. These children of migrant workers would face the same institutional arrangements—the School Merging Program, regarding being migrant or left-behind children. The project is designed to provide better living and learning conditions for rural children. But can this School Merging Program be a solution for migrant parents who cannot bring their children to the cities or the rural migrant children at school age but are excluded by cities? These inquiries are investigated in Chapter 5.

With respect to another fragile social group—the rural elders who are left behind by their adult migrant children - there are two main limitations in the existing literature of rural elders' emotional health. First, much less attention has been given to rural elders and most of the current research has not taken the temporal aspect into consideration; that is, the duration of adult child migration. Second, the dichotomous measure of adult-child migration, or SGHs is limited to investigate the cultural frame—filial piety. Thus, how migration and migration duration of the adult child has affected the emotional wellbeing of the rural elders will be explored in Chapter 6 in my thesis. Although quite a large body of literature has investigated the economic, social, cultural, and political cohesion of migrant workers in cities (Li & Tian, 2012; 2019), little attention has been paid to how migrant workers are financially included—an essential dimension of citizenship entitlement. Researchers worldwide have pointed out that financial inclusion against the backdrop of the global trend of financialisation and neoliberalism has become one of the most important determinants of wealth accumulation and citizenship attainment.

Whether or not financial inclusion can work as a tool to close the social divide, is worth the attention of social researchers, especially in the case of China. This is because the Chinese government has advocated to increase financial inclusion, so as to increase the social inclusion and integration of the rural population. What factors are influencing financial inclusion and how much migrants are financially included, especially those from rural origins are investigated in Chapter 7 in this thesis. These three empirical studies in this thesis aim to provide new evidence to promote the understanding of two broad enquiries about migration, family, and society: (1) what are the consequences induced by migration on families and family members; (2) whether migration has fulfilled its intentions as an important method and family strategy to maximise family income and welfare.

This thesis applies an integrative approach to answer the two enquiries. Drawing on Mabogunje's (1970) system schema for a theory of rural-urban migration and Bronfenbrenner's (1988) bioecological theory, this thesis links sociological perspectives (i.e., social inclusion and segregation, social policy, institutional arrangements and social hierarchy, family values and norms) and psychological issues (including mental health, wellbeing, individual development). By integrating theoretical perspectives and conceptual formulations from these different domains, this thesis links individual and family outcomes with the analysis at meso and macro levels and from chronosystems.

In turn, empirical studies in this thesis will enrich the understanding of migration and family life in an integrative way.

In the following chapter (Chapter 3), I will introduce related sociological, psychological, and demographical notions and theories that frames the theoretical foundations of this thesis.

Chapter 3 Literature Review

In this chapter I discuss conceptual notions and theoretical perspectives underpinning the empirical studies in the thesis, and also, I present some empirical studies to illustrate the related theories for the investigation of how internal migration has influenced family life. A more extensive review of the empirical literature associated with the specific research questions forming the basis of Chapters 5, 6 and 7 can be found in those chapters.

The discussion in this chapter is divided into four subsections. The first is devoted to theories and models of migration that form the theoretical background for this thesis, including conceptualisations and multi-level theoretical frameworks from migration studies, especially those considering rural-to-urban migration. The second deals with Chinese-specific migration theories and models, exploring the pathway of rural-to-urban migration within China's cultural, political, and social context.

The third subsection covers theories on family instability and parent-child separation that frame the investigation of the influence of internal migration on the left-behind populations, children (Chapter 5) and the elderly (Chapter 6), with specific discussion on a more nuanced understanding of filial piety against child migration in China. The final subsection discusses the fundamental notions and latest migration studies related to marginalisation, citizenship and *hukou* system, which serve as theoretical background for investigating financial inclusion of migrant households in China, especially in Chinese metropolises (Chapter 7).

3.1 Migration and theories

3.1.1 The conceptualisation of migration at the individual level

In his seminal and most-cited chapter, *A Theory of Migration*, Lee (1966) suggests that migration may be broadly defined as a permanent or semi-permanent change in an individual's residence, regardless of the distance involved or motivations underlying the move. Continual movements without long-term residence and temporary moves are excluded from this definition. This definition does not distinguish between internal and international migration, in common with many classic theorisations of migration. Examples include Ravenstein's (1889) work on the laws of migration; the gravity modelling of migration (Stouffer, 1960), cost-benefit analysis of migration (Sjaastad, 1962), migration and unemployment modelling (Todaro, 1969), the general systems theory framework for rural-to-urban migration (Mabogunje, 1970), and so on.

Most early studies on migration focused on factors relating to the act of migration itself. Lee (1966) summarises and categorises the factors into four groups: first, “push” factors associated with the area of the region where an individual comes from (the origin); second, “pull” factors related to the destination areas; third, the intervening obstacles between the origin and the destination areas; and last, personal factors. He argues that although factors at the origin and destination locations may be grouped into binaries that present trade-offs in each area, (push versus pull, or attract versus repel), there are significant differences between the operation of these factors at the origin and those at the destination. Most importantly, individuals usually have ample knowledge of the factors relating to the origin location, based on current and long-term familiarity with the location, whereas their understanding of the factors relating to the destination location is only partial and very limited. Lee (1966) comments that even if potential migrants have a certain amount of knowledge of the destination, the strength and weaknesses of a place can never be perceived as well as by living there.

Lee (1966) emphasises furthermore that migration is not based solely on rational calculation; instead, it is an outcome of emotions, mental status, and personal experiences. Although some factors affect most people similarly (such as job opportunities, housing and living expenditure, public services and facilities), some personal factors affect an individual’s understanding and perceptions of the push and pull factors. For instance, people differ with respect to educational attainment, intelligence and sensitivity, stages in the life cycle, sources of information and personal contacts. Thus, people’s needs, awareness, and evaluations of the positive and negative elements at the origin and destination vary. For the obstacles intervening between the origin and destination, the most typical are distance, transportation, and cost.

3.1.2 Considerations of migration beyond the individual level

3.1.2.1 Lifecycle and family considerations

Although Lee (1966 and later) referred to lifecycle and the family, these references were rather minor, and his formulation of migration decisions was based primarily on individual utility maximisation. However, the life cycle and the family became more prominent in theoretical and empirical migration studies in the late 1970s.

The optimal control model of Polacheck and Horvath (1977) delineates the periodicity of migration, the choice of location, and family-level considerations based on a non-stochastic control framework. Mincer’s (1978) investigation of family ties on migration focuses on the role of family ties in making migration decisions and the consequential effects on occupational attainment of family members and family instability—i.e., gains for the family rather than personal gains. He finds the “tied persons” are those whose losses (or gains) from migration are largely determined by the gains (or losses) of their partners regardless of their being a mover or stayer. Usually, the tied movers are more likely to

be wives and tied stayers are husbands. Mincer's findings reveal that maximising gains from migration for the family does not necessarily indicate that gains are maximised for each individual family member. Greenwood (1985) also argues that the family and the lifecycle should be given greater attention in theories of migration.

Based on work from Graves (1979) and Graves and Linneman (1979), He elaborates on a macro perspective to view the causes and consequences of migration. He works from the perspective of the equilibrium framework; migration integrates the origin and destination areas into one. For instance, migration between regions motivated by interregional wage gaps could narrow the differential; that is, migration facilitates an adjustment to a new equilibrium. This theoretical perspective provides another direction to view the spatial equilibrium from a broader geographic context, which is in line with the conceptualisation of non-traded and traded goods formulated by Graves and Linneman (1979), which is used as the determinant of individual/family utility maximisation functions. A person or a household will choose to move if the demand for non-traded goods outweighs the demand for traded goods, which in turn brings out the equilibrium of non-traded goods between the regions because the disposable income in the origin areas is increased by the remittance sent by migrants.

Besides the determinants of migration, migration studies in the late 1990s have also started to consider other micro analyses—for example the selectivity of migration, given that the influence of migration has been studied among those who have successfully made a move, the “positive selection” (Abraído-Lanza et al., 1999; Ambrosini et al., 2015; Jasso et al., 2004). This is shortly explained in the elaboration on the systematic approach proposed by Mabogunje (1970) to understand the rural-to-urban migration in the following subsection.

3.1.2.2 A systematic approach to rural-to-urban migration

Mabogunje (1970) proposes a system schema of rural-to-urban migration based on the general system theory, suggesting a circular, interdependent, increasingly complex, and self-modifying system instead of a linear, city-oriented, push and pull, and cause-effect movement.

As illustrated in Figure 3-1, Mabogunje proposes that rural-urban migration is a complex system involving multiple interacting elements contextualised within a special environment. The environment is composed of four aspects: first, economic conditions, including wages, prices, consumer preferences, degrees of commercialisation and industrial development; second, technology, which decides transportation, communications, and mechanisation; third, governmental policies, covering agricultural practices, marketing organisation, population movement, and so on; and last social welfare development. These four aspects are shaping the rural-urban migration system, which in turn reshapes the aspects. The system is composed of two parts, the rural control subsystem and the urban control subsystem. For the rural subsystem, its true control unit is the family.

As Mabogunje argues, it is the family that sets the expected and unexpected roles of individuals within an agricultural society. The family, through its lineage system and inheritance law, decides the relations of family members to the land. The village community is another control component of the rural subsystem. Its economic conditions and administration style directly decide whether it would cooperate/encourage farming or marketing, positive or negative towards external stimulus, migrant demands in our analysis.

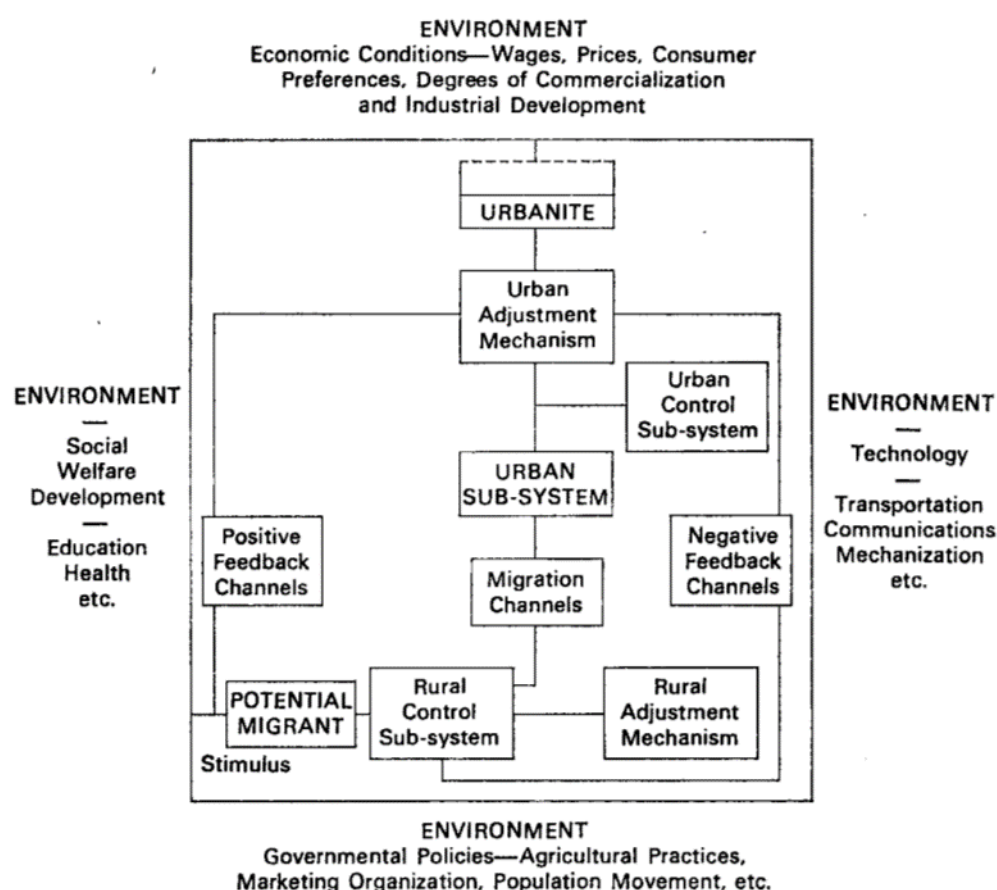


Figure 3-1 System Schema for A Theory of Rural-Urban Migration

Note. Reprint From Systems approach to a theory of rural-urban migration, by Mabogunje, A. L. (1970), *Geographical analysis*, 2(1), 1-18. (P3)

The urban control subsystem, on the other hand, uses its occupational system and residential system to encourage or discourage migration. Mabogunje notes that the two systems can be identified with the city administration and labour market under the supervision of national laws and statutes. Thus, he points out that it is the city administration that largely decides whether it would be relatively easy or difficult for the assimilation of rural migrants via the availability of housing and the provision of other facilities and services (termed as the untraded goods by Graves and Linneman (1979)). It can be found in the following section that the two mechanisms of the urban control subsystem can be very useful in the analysis of rural-urban migrant's transition and commitment to urban life in large cities in China.

What happens between the rural and urban subsystems is a series of adjustments, which resonates to the equilibrium system suggested by Greenwood (1985). In the rural community, the loss of labour and population leads to an increase in the per capita income of the community—other family members/social networks’ participation in the agricultural production—the ways and methods used by rural communities to permit or support the out-migrated population to relinquish their rights/responsibilities partially or wholly to productive resources in their homelands.

How this renunciation is accomplished reflects the negotiation between traditionalism and modernism (in the case of China, this may be described as Confucian culture versus market theory). What happens not only refers to spatial mobility but also to cultural and institutional transitions—the individualisation of landholding and a new pattern of land distribution and ownership. Secondly, the renunciation enables the under-utilised labour to increase their income via participation in farming.

A city is a structured assemblage of interest groups, being highly hierarchical. The most desirable social group by a city is the one with the most specialised skills; thus, the illiterate, less educated rural migrants can only gather at the bottom of the hierarchy. The higher the level of relevant characteristics which migrants possess, the greater their intentions and chances to settle in the city. That is migrants are “positively selected” (Abraído-Lanza et al., 1999; Ambrosini et al., 2015; Jasso et al., 2004). Those at the bottom of the migrant hierarchy are more likely to become the returnees, who are “negatively selected” (Borjas, 1989; Newbold, 2001; Pauli, 2021). However, other researchers reject the dichotomous understanding of return migration as failure or success, arguing that there is no uniform pattern of return migration and the understanding of return migration should be context-specific (Hein de Haas et al., 2015; Farrell et al., 2012). The context-based understanding of return migration overlaps with Chinese-specific theories of migration, which will be discussed in the following section.

In urban areas, the adjustment of the system is to incorporate migrants according to the needs/interests of the cities. The institutions for incorporating work include ethnic unions and voluntary organisations (church, trade unions, occupational association) and recreation societies. But in the Chinese context, the mechanism of incorporation is quite different—it operates through *hukou* conversion, which will be explained later in this thesis.

3.2 Chinese-specific theories of migration

3.2.1 Urbanisation and the rural-urban divergence

Urbanisation is an integral process of industrialisation and income growth. Labour from low-productivity sectors, especially agriculture activities in rural areas moves to higher-productivity and manufacturing sectors in urban areas, where innovations and technologies are incubated and

sophisticated skills are developed and wanted. The direct result of urbanization is expansion of urban areas and growth of rural population moving to work and in live in urban areas. According to Chinese scholars (M Chen et al., 2013), urbanisation in China can be categorised into three stages: 1960-1978, the rapid stage of decline; 1979-1995, the stable stage of ascension; after 1995, the stage of rapid development. The rapid growth of urbanisation has brought vast increase of GDP in China; by 2020, China's total GDP has ranked the second worldwide. However, this rapid development does not come without a price, the sacrifice of just and equality between the urban and rural is one of the prices.

As documented in the book "*One country, two societies: the rural-urban inequality in contemporary China*" (M. K. Whyte, 2010), rural-urban inequality is the outcome of successive political and institutional designs entangled with a geographical imbalance of natural resources. This dual socioeconomic divide between the rural and urban is the disequilibrium which motivates the internal migration from the rural origins to urban destinations in the late 1970s. The still ongoing internal migration has had huge economic consequences, with a booming economy and China's GDP now ranking second in the world.

But the dual socioeconomic divide has become the single, but the most pressing axis of social inequality in China. The equilibrium framework proposed by Greenwood (1985) suggests that migration may work to reduce levels of spatial inequality. But rural-urban inequality seems not to have been diminished by massive rural-urban migration over recent decades. Massey et al. (1994) proposed a cumulative theory of migration to account for the uniformities and inconsistencies observed in Mexico-US migration communities. They explained that the beneficial effects of migration on the sending community could lag since it takes time to improve the infrastructure of the community based on the remittance sent back by the migrants. The proposal of adding temporal dimension helps explain the accumulative process of the social and economic changes in both sending and receiving communities, which complements the missing element of the equilibrium framework (Greenwood, 1985).

Chinese scholars (Fei, 1992; Xia and He; 2017) have pointed out urbanisation in China is different from that in the western context. First of all, as mentioned in the 2.2.1, rural-urban divide is based on *hukou* system and its urban operation system. Larger cities have more special access to capital markets and fiscal resources—the urban hierarchy, especially those in SEZs as displayed in 2.2.2. After the decentralisation and tax reform (Shaoguang Wang & Hu, 2015), provincial level cities from more developed provinces have much more fiscal resources from their own local governments, which gradually leads to localised self-sufficient and self-interested accountability and regional disparity (Tsui & Wang, 2008) (Y Liu et al., 2012). The state's capacity to mobilise resources for more equal modernization has been weakened and will continuously to be weakened (Shaoguang Wang & Hu, 2015). Cities like Shanghai, Beijing, Guangzhou, and Shenzhen have evolved into mega-cities whereas many other prefecture-level cities are only about half their population size.

The accumulated advantages in the largest cities in China attracts more capitals, fuelling both the economic and population growth in these cities compared to those in the middle and bottom of the hierarchy. This leads to what Henderson (2009) has described “too many cities, too few people” as urbanisation in China is highly contained within provinces and regions, governed by the city hierarchy. Except the largest cities (of more than 8 million permanent residents), most medium- and small cities (of no more than 3 million permanent residents) have too low populations to create the scale benefits, thereby the productivity and economic growth in these cities are limited.

Henderson (2009) also pointed out that doubling the population in these medium cities can lead to 20 -35 percent increase in labour output. This is in line with the most recent *hukou* policy, “Fully removing *hukou* barriers for migrants to settle in medium- and small cities, gradually removing restrictions in large cities (of more than 3 million, but beneath 8 million permanent residents)” (The CPC Central Committee and the State Council, 2014). Thus, policies to fully remove barriers to rural surplus labour to cities, to prevent the emergence of over-crowd in mega-cities whereas to promote population and economic growth in medium- and small cities, and to reform the urban administrative hierarchy are needed.

3.2.2 Semi-industry, semi-agriculture mode

Given the social reality that the urban-rural socioeconomic divide is growing rather than diminishing since the economic reforms, a number of Chinese scholars have studied this issue. Huang (2006) was the first to use the terms “semi-industrialisation and semi-agriculture” (“*bangong bagen*”, “半工半耕”) to describe the influence of industrialisation on rural social structure.

The idea of “semi-industrialisation and semi-agriculture” was firstly introduced by Fei, (1992) through his field study of country life in Yangtze valley and his anthropological masterpiece *Peasant life in China*. In his book, Fei pointed out that the agricultural economy was not purely agricultural; it was a mixture of agricultural and side-line products (secondary agricultural products), or a combination of agriculture and industry. In addition, Fei appealed to scholars to start by understanding how farmers manage their livelihood in order to understand the social and institutional transitions of rural societies.

Following the work of Fei and Huang, Xia and He (2017) pointed out that urbanisation in China is different from that in western countries, and that semi-urbanisation may be a practical pathway for rural migrants to “slowly but surely” achieve urbanisation, at the level of the household and for the whole Chinese society. For the Chinese, it is based on the household rather than the individual as the unit to achieve urbanisation; in rural areas, rural citizens can obtain their basic means of production and livelihood as farmers while they are entitled to the rights to work and live in towns and cities since the 1980s. Rural people are the “dynamic subjects” born under the Chinese dual urban-rural structure; they earn a semi-agricultural and semi-industrial livelihood based on the intergenerational division of labour.

This labour division based on inter-generational relays is the general mode of agrarian household reproduction as well as the way to achieve a complete status of urbanisation.

The theories of migration discussed in this section have focused primarily on the causes and consequences of migration for economic development. Aspects of these theories have important implications for the current work. Mincer's (1978) insight that not all family members benefit equally from migration decisions is important for understanding the perspectives of left-behind family members, while an understanding of push-pull factors suggests that decisions on migration may be affected by the same factors which affect wellbeing. Hence, both two perspectives should be incorporated into analytic models. However, this thesis focuses more on the effects than the causes of migration. In the following two sections of this chapter, I present the concepts and theoretical frameworks used to investigate the "pains and gains" of families involved in migration whose family members are separated and facing their own difficulties.

3.2.3 Gendered migration and social consequences

Female migration is relatively neglected in migration studies around the world, and so is the investigation of female migration in China. The existing literature has indicated that gender is an essential aspect of migration and internal migration in China has some key gendered consequences on gender roles, divisions of labour, and family notions and structure (Fan, 2000). The earliest studies of the role of women in migration suggested that women were less mobile than men, moved shorter distances than men, and were less motivated by social reasons rather than economic reasons (Mincer, 1978; Bonney & Love, 1991).

These notions can be found in Chinese migration studies (Fan, 2003; Zhang, 2013); in addition, studies have reported that women's downplaying of the central roles in migration is reinforced by Chinese socio-cultural tradition (Davin, 1998; Ngai, 1999). That is, the priority to economic, social, and physical mobility is continuously given to men, whereas women are expected to take the supporting and caregiving roles and stay behind. The ongoing socialist transitional economy in China has also been increasing the segmentation between women and men and incorporating them into the society differentially. Rural-to-urban migrant women in the informal sectors, who are in their teens and low twenties are recruited to the labour-intensive manufactures regardless of their low employment skills and educational attainment, called *dagongmei* (working girls) have caught a number of researchers' attention (Davin, 1998; Ngai, 1999).

Although some researchers have reported positive impacts of migration on the female group, this optimism is limited. Some studies have reported that migration enables women to benefit economically and empowers their autonomy and independence, which is almost impossible in their homelands (Krummel, 2012; Sinha et al., 2012; J. Sun, 2016). However, more researchers have

expressed concerns about how much migration has empowered the female population. Wang et al (2018) suggested that rural migrant workers are suffering a “triple jeopardy” because of being rural, nonlocal, and being female. When compared with migrant men and local women, rural migrant workers are at a significant earnings disadvantage based on the 1995 survey of Floating Population in Shanghai. By using the 1% sample of the 1990 China Population Census and focused on the Shenzhen SEZ and Guangdong Province, Liang and Chen (2004) found that when compared with male migrants in cities, female migrant workers are more likely to work in informal industries, less paid, less likely to work in prestigious work or manager level.

The accumulated disadvantage experienced by female migrants has been strengthened by the labour segregation, which is the social consequence of the patriarchal tradition in China as well as the *hukou* system. Before migration, female workers have already been inferiorly positioned in the labour market, because of having less human capital, being less encouraged to migrate, and having less financial support from their rural families than their male counterparts. This inferiority can be further increased by migration, because female workers are less socially and economically benefited from cities and the pull from the rural gets stronger when they get older (Liang & Chen, 2004). As *hukou* conversion (obtaining the local *hukou*) is extremely hard for migrants, especially for rural migrants (detailed discussion can be found in 3.4.3 *Hukou*, citizenship, and social inclusion), the gendered labour market and rural discrimination together have pushed *dagongmei* back to their hometown. The influence of the experience as a migrant worker on family life is obscure in front of forceful patriarchy, especially in remote rural areas (Zhang, 2013; Han, 2021).

Rural migrant workers are encouraged to return in order to keep the farmland, among whom female workers are persuaded the most (Chuang, 2016). According to the patriarchal gender expectations, women are socially encouraged and pressured to take care of the family, including taking care of the young and the old, doing household chores, and working on the farmland, so as to make labour migration for men possible. The existing literature has pointed out that the mobility of both gender decreases in the late twenties. However, a sharper decline is observed among female groups than the male. According to the empirical evidence, the mobility rate of rural women drops significantly after marriage (Connelly et al., 2010). That is, marriage encourages and supports men's migration while restraining women's mobility. To many *dagongmei*, marriage signifies the end of their migration in cities. For rural females in remote and rural areas, marriage is a valuable opportunity to improve their quality of life; marriage is still one of the most critical life-changing events for most women in China, though marriage deters their mobility.

Anthropological and qualitative sociological studies have made significant contributions to understanding the impact of migration on institutional changes, including gender roles, divisions of labour, and family notions and structure. Concerned about the depth of the quantitative research on gender and migration by using survey data, gender is only treated as a factor as important as educational

and employment attainments and other household SES indicators in the statistical models, rather than a key analytical concept. However, I believe anthropological and ethnographic studies on gender and migration can yield fruitful research findings.

3.3 Theories on family instability and parent-child separation

3.3.1 Family instability and child outcomes

A large body of studies have documented the positive relationship between family instability and worsen developmental outcomes of children (Ackerman et al., 1999; Bzostek & Beck, 2011; S. E. Cavanagh & Huston, 2006; Coe et al., 2018; Fomby & Cherlin, 2007; Forman & Davies, 2003; Kull et al., 2016; Yao Lu et al., 2021; Schoon et al., 2012; Smith et al., 2017). Also, the far-reaching influence of family instability on personal development has been well documented (Bakker et al., 2012; Bosick & Fomby, 2018; S. E. Cavanagh & Fomby, 2012; Evans et al., 2018; Fomby & Bosick, 2013; Gaydosh & Harris, 2018; Goldberg, 2013).

However, not all changes are negative; the core is to reach a new equilibrium—a stable family environment is optimal for child development (Bloome, 2017). According to the family stress theory (Minuchin, 1985; Hadfield et al., 2018), stress within a family only occurs when the demands on the family are greater than the family's ability to absorb or handle. Besides family instability triggered at the individual or household level, many family changes are the responses to the larger social world, outside the family sphere, social policies for instance.

Family instability might create a path-dependency, which affects how children react to difficulties and challenges. Wu and Martinson (1993) pointed out that children who experience family instability are more like to experience more consequential changes and stresses since they are more likely to have developed learned helplessness, manifested as having compromised wellbeing and low-level of self-esteem (Maier & Seligman, 1976). Cavanagh and Huston (2006) pointed out that children who have experienced family instability at a young age are less likely to develop a healthy way to tackle stress than their peers who encounter no such family disturbances or only once during their childhood.

Triggers of family instability can be grouped into two groups: changes in the marital relationship of parents and changes in parental work and employment. Changes in marital status, divorce and remarriage, for instance, can cause dramatic changes in family relationships and parenting styles (Wu & Martinson, 1993), family income and life expenditures (McLanahan & Sandefur, 2009), and broader social ties due to residential moves (McLanahan, 2000). Similarly, changes in parents' employment can cause direct alterations in family expenditures, budgets, household residence and

children's schooling because of residential moves, and parenting styles and quality due to changed working hours and / or parent-child separations (Marcynyszyn et al., 2008).

In the case of rural children whose parents have out-migrated, family instability can be categorised into parental work and employment. In the next two subsections, attachment theory and bioecological theory are introduced in order to understand the mechanism of how family instability can make a difference on development outcomes of rural children.

3.3.1.1 Attachment theory and child outcomes

Rapid changes regarding physical, mental, cognitive, behavioural, and interpersonal aspects are observed during the childhood and adolescence, which poses far-reaching effects onto adulthood. According to American Psychological Association (2022), Childhood is a period between the end of infancy (ages about 2) and the onset of puberty marking the beginning of adolescence (ages 10-12), during which family is the centre of children's world and parental monitoring is the key factor imposing the greatest influence on child outcomes. The concept of parental monitoring and attachment theory are firstly introduced theoretical approach to understand how family instability can significantly affect child development.

Parental monitoring, which refers to parents' efforts to gain knowledge of children's thoughts and behaviours are in line with attachment theory. Crouter and Head (2002) have argued that parental monitoring is one of the most efficient and most consistent predictors of both health and positive child development, in addition to the prevention of problem behaviours and an essential part of effective parenting. A large body of research has documented 1) the significant relationship between the absence of parental monitoring and children's problematic behaviours, 2) the strong association between low parental monitoring and children's involvement in high-risk peer groups, and 3) the significant association between missing parental monitoring and deviant peers antisocial behaviours (e.g., Dishion et al., 1991; Dishion et al., 1996; Shortt et al., 2003).

Different from parental monitoring, a secure attachment derives from availability, physical proximity, and sensibility of caregivers of children, who are no longer limited to parents. Bowlby (1973) defined the lack of accessibility as either separation from or loss of the attachment figures; his early work demonstrated that even one-week separation can cause significantly negative impact on the mother-child relationship (Bowlby, 1969). Sensitivity of parents, also known as responsiveness, of the caregivers, proposed by Ainsworth (1979), is another important predictor for secure attachment. In her early work, Ainsworth mentioned that "being sensitive to the signals" refers to "caregiving interventions in synchrony with the individual child's needs and rhythms" (Ainsworth, 1967, p. 394). Ainsworth, however, pointed out that sensitivity is different from maternal warmth—the "warm, intimate, and continuous relationship with his mother (or permanent mother-substitute)" delineated by (Bowlby, 1951, p.11). Sensitivity refers to an appropriate response to the needs of the child (Ainsworth & Marvin, 1995).

The availability and sensitivity of attachment figures together work as a secure base created by the attachment figures (Ainsworth, 1979), who promotes independence and autonomy and comfort, support, and guidance when needed. Through continual interactions with the external world of objects and persons, children would gradually construct their internal working models of their attachment figures and of themselves (Bowlby, 1969, 1973, 1980). The internal working models work as the basis for children to assess a new environment and then behave accordingly. Although these models work in a relatively stable fashion, they are dynamic and plastic and thus developing.

Children, who grow up with secure attachment figures, are more likely to develop their attachment style as secure, that is, being secure and self-reliant, trusting, explorative, cooperative, and helpful towards others. Those individuals are described to have a healthy ego, showing ‘basic trust’ (Erikson, 1950), ‘mature dependence’ (Fairbairn, 1954), or having ‘introjected a good object’ (Klein, 1948). By contrast, children, who grow up without having developed a secure attachment style, their attachment behaviours are opposite from secure attachment, being anxious, low in confidence, and avoidant and meanwhile being over-dependent or immature. Strong empirical evidence has supported the carryover effects from attachment styles formed in early age to later personal life, social relationships, health, and wellbeing (Dark-Freudeman et al., 2020; Dozier et al., 2008; Harris & Bifulco, 2021; Hobdy et al., 2007; Vungkhanching et al., 2004; Weems et al., 2002).

Secure attachment figures and parental monitoring are almost absent for most left-behind children in China, which has led to significant changes of resources, attachment styles, and parent-child relationship. Because of parental migration, rural children either live with their grandparents/relations or are “taken care of” by a third party (Huang, 2006; Wen et al., 2019; Zhang, 2013), boarding schools, for instance (for some very young children, they go to nurseries). Although parents can communicate with children and they can provide parental monitoring with the help of technology, telecommunication can never compete with the daily basis and face-to-face communication, no mentioning being physically available and proximate and sensible so as to be secure attachment figures.

3.3.1.2 Bioecological theory and developmental differences

Adolescence (ages 10-19) is the traditional period from childhood to adulthood, with its focus shifted away from family to peers and school life. Interacting with a much wider variety of people (peers, teachers, and other adults in schools and communities) and playing more social roles, it is a critical time to develop knowledge and skills of emotions and relationships besides acquiring knowledge and transferable skills for career in classrooms.

Meanwhile, attachment theory, which analysing development outcomes of children by focusing on family, may not be the best to investigate adolescents. Bioecological theory (Bronfenbrenner, 1988) provides a general and systematic review for children as well as adolescents. According to his theory, he claimed that to understand human development, one must consider several aspects of life from a

systematic point of view. His ecological model of human development consists of five socially organised subsystems that directly or indirectly guide, support or constrain the development of an individual.

First, microsystems for an individual are social roles, interpersonal relations, and the activities surrounding them. They are formed on a daily basis and presented as immediate stimulus-response settings. One of the most studied settings is the family, which is also the most immediate and proximal setting for most people. **Second, mesosystems** are composed of multiple microsystems: home-school and home-community, for instance. Bronfenbrenner (1988) emphasises that impacts from mesosystems outweigh any one of the microsystems. For instance, the effects of family and school processing together are greater than a person's demographic characteristics granted by family. **Third, exo-systems** can indirectly make an impact on the developing individual via making changes in the immediate context. **Fourth is the macrosystem**, which is composed of the aforementioned three systems. Macrosystems account for the differences in the structural differences among different societies.

The final systems are the chronosystems. They are termed as '*time*' in Bronfenbrenner's Process-Person-Context-Time Model (Bronfenbrenner & Evans, 2000; Bronfenbrenner, 2005). Chronosystems extend the developing environment into the third dimension, encompassing changes in personal characteristics and the environment over time. Bronfenbrenner argues that as a child grows up, the interaction between these different systems becomes more complicated. The question Bronfenbrenner enquired about through his theory is how the surroundings support or hinder the development of an individual and how children can mobilise resources around them to optimise their development.

For children in the rural areas whose parents are absent because of migration, they could also face the change of school due to "Rural School Closure and Merging Programme" launched by the China Ministry of Education since 2001. Both their micro and mesosystems have experienced great changes. Caregivers are no longer parents; grandparents at home become alternative attachment figures. Due to the school merging programme, children who attend schools that provide boarding services to accommodate children living in remote areas may find school staff as alternative attachment figures. But the relationship quality between left-behind children the alternative attachment figures may never be the same with that between children whose home-school and home-community environments are neither disturbed. As a result, wellbeing and other child outcomes, including self-efficacy and self-esteem can be compromised (Maier & Seligman, 1976).

3.3.2 Family instability and rural elders

Reviews of attachment theory and bioecological theory provides an integrative approach to understand the linkages between macro social contexts and individual and household-level outcomes. In some

gerontology and ageing studies, attachment theory is also found to have strong explanatory power in the studies of the emotional and mental health of ordinary older people (Miesen, 2014), as attachment style developed during childhood may emerge at old age.

3.3.2.1 Attachment theory and the implications on the wellbeing of elders

Oon-arom et al (2019) investigated the link between adult attachment style and risk of suicidality among the old. Based on a cross-sectional dataset made of 191 geriatric outpatients at psychiatric clinics in Thailand, they find that high anxious attachment is associated with a high level of suicide risks; depression significantly moderates anxiety attachment and suicidality. This emotional loss can be explained as the loss of attachment figures, triggering the insecure attachment style developed during childhood. It can also be explained by psychological regression (Freud, 2003), an unconscious defence mechanism which entails the adults to retreat to a point in their earlier developmental stage.

In China particularly, elders, who feel insecurity and fear because adult children migrate away, are usually the practisers and followers of filial piety. It is a social norm and virtue that emphasises respecting, caring for, supporting, and loving one's parents. Chinese people are "encouraged and educated" that it is a right to rely on children in old age, not only financially but also emotionally (Luo & Zhan, 2012). It is reported that cultural demands of elders have made some families struggle (Zhan et al., 2011). When the expected roles cannot be played by their adult children, these elderly parents would directly feel the loss, although this separation is a family decision, an adaptive household strategy to increase family income and decrease economic risks. The sense of loss could also be exaggerated by their ageing body and physiological changes (Amarya et al., 2018), which signals morbidity and mortality; a loss of dignity can develop into depression and even complicated grief, which is detrimental to their emotional health and wellbeing (Lloyd et al., 2014).

3.3.2.2 A more nuanced understanding of filial piety against child migration

A broader definition of family support can help understand filial piety obligations. According to Baldassar and Merla (2013), family support involves five basic aspects: financial and material support, practical support, emotional and moral support, personal care, and accommodation. These five aspects of family support can be categorised into two, the instrumental support (financial and material support, practical support, personal care, and accommodation) and the emotional support (emotional and moral support), which are in line with filial piety in Chinese context.

Ivanhoe (2004) concludes three important features of filial piety: gratitude, reverence, and love; filial piety can be perceived the paradigm for social behaviours as well as the source of other virtues. Gratitude, reverence, and love derive from the three very important mechanisms of parent-child relationship according to the life course. First, it is not the creature of parents, but good parental care throughout the most vulnerable period of individuals matters. The attention, instruction, nurturance,

guidance and education that are essential for the character and interests of children. It's worth noting that child education including but not limited to the education in schools, education on ethics, character, and culture from parents through daily interactions, is important to raise a child who has an aware and engaged human being for the society and to live a full and satisfying life.

Second, the asymmetry of different life course stages between what children receive and what children can pay back: adult children can never help their parents to grow but to support and accompany their physical and social dissolution as they age. Third, the subject-ruler relation—the helpless children and the powerful parents, the later sacrifice substantial goods of their own to care for children. The first- and second-point account for being grateful, and love; the second and third point are corresponding to reverence. In this logic and according to Mencius, to be materially and emotionally supported by one's children at old age is the fruit of a parent's love and benevolence towards children (Tu, 1998).

Filial piety as respect for traditions—the way of acting according to wisdoms and knowledge, with acknowledging its fallibility (Nuyen, 2004), which serves to fulfil duties and obligations in family life are still in need in modern life (K.L. Chan & Tan, 2008). However, filial piety does not refer to absolute obedience, as pointed out by scholars, there is room for being critical with tradition and for equality and personal liberty to be filial (K.L. Chan & Tan, 2008). 'Reason' with one's parents is one approach. Even if one's parents are against the will of children, children should not abandon their will and purposes because self-respect is the root of filial obedience, but children should still be respectful to parents, and this does not falsify filial piety (Roetz, 1993). However, there have always been practical difficulties and conflicts to fulfil filial piety when children encounter situations whereas parents' needs conflict with children's interests (Yeh & Yang, 2009). Solutions to conflicts between parents and children due to different understandings of filial piety are keys to assure household stability wellbeing.

Yeh (1995) classified these solutions into five types, self-sacrifice, egocentrism, reframing, compromising, and escaping. The differences between these solutions derive from two aspects, whether or not parents are satisfied by children's support and whether or not children can achieve their personal goals (Yeh & Bedford, 2004). Self-sacrifice and egocentrism are respectively at the opposite; reframing and compromising are taken by those parents and children who take both sides' needs into consideration. Escaping is a temporal strategy until conflicts escalate, which will be transformed into one of the other four types (Yeh & Bedford, 2004). It is also possible that these five types of mode represent different stages of conflicts.

To understand whether there is filial piety dilemma between rural elderly parents and rural migrant children, one needs to investigate the filial piety belief, generation, and the context (M. Zhang et al., 2020). From the contextual theme, that rural-rural migration leading to absence of emotional support and care as well as labour support can be compensated by bringing more economic resources for their parents and to improve life quality of the entire household.

Changes in the filial piety belief have also been reported by researchers. Rural elderly parents do not evaluate their children's filial piety lower after their migration, and elderly parents are more likely to highly evaluate their children's being filial if they receive more financial care (B. Luo & Zhan, 2012). Stay-behind rural elders whose children have migrated to the urban centrals do not report lower psychological wellbeing than their counterparts (Silverstein et al., 2006c) when financially supported. By contrast, adult children's living nearby does not guarantee the elderly parents can receive help and support as described by Chou (2010).

Being absent and not being able to provide instant instrumental support due to work is not perceived as nonfilial when financial and material support can be guaranteed. On the one hand, literature has reported that rural elders are more likely to highly evaluate their children's being filial if they receive more financial care (B. Luo & Zhan, 2012). On the other hand, the make of rural-urban migration of adult children is perceived as improved social status, which brings honours to their parents (Deutsch, 2006) and thus is regarded as filial. Because the cultural framing of the urban as being modern and global has formed an important motivation for rural-to-urban migration especially in the recent cohorts.

The spatial mobility from less developed rural areas to more developed and prosperous cities symbolises social mobility. Studies (C. Lu, 2022) have reported that a significant positive association between migration and intergenerational subjective social status mobility; the increased subjective social status can be explained by decreased economic inequality (X. Shi et al., 2010) based on increased financial returns from non-agricultural work (N. Zhu & Luo, 2010), and more opportunities for upward social mobility (Ye Liu et al., 2015) because of increased social capital and employment ratio (C. Lu, 2022). Therefore, filial piety dilemma can be solved if the core of filial piety—being gratitude and supportive to one's elderly parents is not violated, and how to fulfil filial piety has experienced changes.

3.4 Marginalisation of migrants from an intersectional lens

In this section, I turn my attention to the migrant population in urban areas. In this section, I first illustrated the marginalised status of migrant workers in cities. Next, I discussed the concept and studies of citizenship in China, which will be used as an overarching concept of social inclusion. Finally, I applied an intersectional lens (Walby, 2007; Cho et al., 2013) to analyse the interlocked association between *hukou* and employment, between *hukou* and house ownership, and the interplay between *hukou* and decentralisation policy, along with the discussion on the new phenomena of *hukou* system—the residence card system.

3.4.1 Marginalisation of rural migrants in cities

Rural migrants are marginalised in urban cities, which is widely suggested in the existing literature. From an intersectional lens, this section aims to illustrate how migrants, especially rural migrants, are marginalised and excluded in Chinese cities.

Social exclusion, according to Razer and et al (2013), refers to individuals or groups being lack of effective participation in one or more aspects of social life or benefits of the society where they live. Social exclusion, along with social inclusion, is usually coupled with the concept of marginalisation, which appears highly interchangeable in the existing literature. However, Armstrong and et al (2011) argue that the opposite of inclusion is not exclusion. Marginalisation has a richer meaning than exclusion, as Messiou (2012) pointed out the important distinction between experiences of marginalisation (social exclusion) and the recognition of them, acknowledging the subjective aspect—feelings and senses.

Experiences of marginalisation are not uncommon among migrant workers. The contrast between the narrative of migrants and local *hukou* holders reflects two different symbolic social statuses (Goffman, 1951) based on *hukou*. As mentioned above, individuals living in urban areas with an urban *hukou* are officially called *jumin*, which means “residents”. People living in rural areas with *hukou* registered as rural are called *nongmin*, “peasants”. “Residents” are guaranteed to live and work in cities, but “peasants” are not entitled. “Peasants” are supposed to live and farm in the countryside and *nongmingong* or *mingong* (peasant workers, or migrants in the international discourse of mobility and migration); their staying in urban areas is supposed to be temporary, and eventually, they are expected to return to the countryside. Thus, the social discourse has positioned rural migrants in a disadvantaged place, dividing them from the urban locals and othering them from the urban centrals.

Empirical studies on migrant workers in China have documented rural migrant workers living a marginalised city life from multiple aspects. Knight and et al (1999) have reported that migrant workers were mainly employed in service and construction industries and were working on jobs that are disdained by local residents (Roberts, 2018a, 2018b). Migrant workers are notoriously perceived as cheap labour and paid little, though they are involuntarily working longer without adequate rest in hazardous environments, maltreated by managers, and provided with no job training (Tan, 2000). Overdue payment occurs fairly frequently (X. D. Ma, 2000), particularly in the building and catering industries (W. Yan & Liu, 2004). Migrant workers have neither access to social welfare in hosting cities as they are not official residents in cities, nor to employment-based social security and medical benefits because factories and employers largely refused to pay for migrant workers’ security insurance as governments required (Tan, 2000; Feng et al., 2002).

Migrant workers are also facing housing difficulties in city centrals. They are not entitled to any subsidies whether renting or purchasing houses (Y. Wang & Murie, 2000). Extremely high prices

of commercial houses deter even local residents, no mentioning migrant workers (Li et al., 2010). Consequently, many migrant workers choose to live in dormitories provided by factories or employers, which are usually crowded and poor in terms of sanitary facilities (Shen & Huang, 2003; Tao et al., 2015)

Precarious work and high job mobility lead to a unique characteristic of migrant workers in China, floating; job mobility of rural migrant workers is much higher than that of urbanities (Zhang, 2011)(C. Zhang, 2011). Being excluded from the primary labour market means the rewards of primary jobs, including earnings, working conditions, job security, training opportunities, carer prospects and so on, are out of reach for migrant workers; this can aggregate to a higher level of marginalisation (F. K. Wong et al., 2007). Rural discrimination uniquely contributes to a high level of job mobility (Zhang, 2011). Rural migrants are seen as competitors of urban residents and responsible for the unemployment of local residents, and thus a threat to social stability. They are also largely perceived as less educated, ignorant, and no cultural tastes by local residents (Davin, 2000), and are often stigmatised with the increased crime. As a consequent, discriminative encounters with local residents, including verbal assaults and or shames, indifferences, avoidances, and aversive reactions, are common for migrant workers (Guo, 2004). During the global economic crisis or recessions, migrant workers are the first to be dismissed (K. W. Chan, 2010b). Not having settled down in urban areas, a majority of rural migrant workers must return to rural villages.

Wang (2006) argues that rural migrants' not being economically and institutionally integrated in cities, leads to failures in cultural and societal integration. Being excluded and rejected from urban life, rural migrants also exclude themselves (Chen, 2005) from urban communities and turn to other migrants who share similar social and economic backgrounds. That is, they do not identify themselves as members of the cities. Fourth, rural migrants' living, and residential conditions are marginalised, making it even harder for them to network with urban locals. Distinctions can be found between different social groups, especially between urbanities and rural migrants, because social interactions between them are extremely limited due to labour market and residential segregation. The typical living and working status of rural migrants in urban areas described by (Chen, 2007) is that most of the migrant workers are segregated from the primary labour market and are more likely to work with other migrants from similar social backgrounds. Thus, they are further prevented from establishing social networks with the locals and are less likely to re-socialise and be accepted by urban citizens.

Failures in economic, institutional, cultural, and social integration reinforce each other, creating an increasingly isolated and marginalised status of rural migrants in cities, preventing rural migrants from identifying themselves as members of urban society from either a social or a psychological perspective. Migrants are "unrooted noncitizens" in the cities (Solinger, 1999) reduced into only one dimension—labourers to maintain the functioning of cities, who have no social support, no urban life, and no belongings (Li, 2006; Liu & Wu, 2006). Rural migrant workers float from one place to another or from one job to another when finance and the economy are stable globally; if not, they float back to

the rural areas and float to the cities again when the economic situation turns around. They also float between their hometowns and host cities during traditional holidays for family reunions. Rural migrant workers are called “*liudong renkou*” (floating population) in Chinese.

Without economic security and with no social benefits guaranteed, most migrant workers do not bring family members with them; the left-behind population in China is the consequence of institutional settings, although it might appear to be a product of “household strategy”. Building on from this, in the next subsection, I will analysis the marginalised status of migrants in urban centrals by analysing their citizenship status from an intersectional lens.

Intersectionality is a key concept introduced in the 1980s to understand how multi-layered social and political attributes interact and create different modes of discrimination and privilege of individuals (Cho et al., 2013). Focusing on examining the interplay of race, gender, class, nation, and other axes of social power or inequality, intersectionality has been acknowledged as a productive tool in social sciences. In this section, I use intersectionality as the framework to integrate the existing literature on migration studies in China, to illustrate how the interplay between being rural and being migrant has led to the marginalisation of rural migrant workers in urban China.

3.4.2 Analysis of marginalisation from the perspective of citizenship

As Isin and Turner (2002) have suggested, the study of citizenship is about tackling injustices experienced by people in different nations worldwide. The concepts, theories, and models produced by citizenship studies enable the injustices to be seen, articulated, analysed and understood, and finally recognized and changed.

Based on the British social context, Marshall (1950) proposes the three-stage development of citizenship and the three types of associated rights: legal rights (17-18th centuries), political rights (18-19th century), and social rights (19-20 century). Specifically, Marshall (1950) argues that social rights were institutionalised by welfare states so as to reduce the inequalities produced by market forces and the logic of economic rationalism and to mitigate the level of class struggle and antagonism through inclusiveness of various social welfare schemes. But Marshall’s definition of citizenship has received broad criticism, including its incompleteness and ignorance of economic, cultural, and ethnic perspectives.

Earlier on, from a sociological point of view, Turner (1993) conceptualised citizenship into two dimensions: first, the identity of belonging to a community and second, the right to access to resources; the two dimensions originate from the two forms of social struggles, recognition and redistribution. It was Turner’s sociological formulation of citizenship that theoretically guided Solinger’s (1999) pioneer investigation of citizenship and migration in urban Chinese. Later on, in his book *Classical Sociology*, Turner (1999) further frames his understanding of citizenship into the sociological model of citizenship,

which is structured by five key components: citizenship (a status of membership); community, on which the institutions are based; social identity (the sense of belonging); civic virtue (the nature of (in)equality); and the access to socioeconomic resources.

Although citizenship can be seen as a form of allocation (or redistribution) and integration (based on recognition), Turner, in both his own books (Turner 1993,1999) and his co-authored books (Isin & Turner, 2002; Isin & Turner, 2007), he has repeatedly emphasised that it is problematic to suggest a unitary theory of citizenship or a single version of citizenship. Isin and Nyers (2014; p. 1) offer their best version of the definition of citizenship, “an ‘institution’ mediating rights between the subjects of politics and the polity to which these subjects belong”. They also pointed out that three points need to be emphasised in order to understand this definition. First, ‘institution’ refers to a broader conception of processes, which are relatively stable and durable, enabling agencies to create/produce social facts and meanwhile are neither incontestable nor uninventive. Second, the polity is used given the emergence of international government regimes—the state is no longer the only source of recognition and legal rights and new regimes of the accumulation and redistribution of capitals. Third, ‘political subjects’ instead of ‘citizens’ is suggested due to the fact that not all political subjects have the entitlement of citizens. That is, the designation of citizenship are the ends which all political subjects have endeavoured and struggled to have.

What is the takeaway of this occidental theorisation of citizenship on the oriental studies of citizenship, especially for China? The bulk of literature on citizenship developed by Western scholars reveals a European/American understanding and perspective. Citizenship studies in the United States have been heavily focused on race and immigration, while for British social sciences, the concentrations are on social class, race, and capitalism. As for China, the research on citizenship cannot avoid investigating the relationship between the *hukou* system and internal migration (Solinger, 1999 & 2003; Smart & Smart, 2001; Smart & Lin, 2007; Li et al., 2010).

3.4.3 *Hukou*, citizenship, and social inclusion in China

3.4.3.1 The intersectional outcome of hukou system and market forces

In contemporary China, citizenship is still locked with *hukou*, which although has been challenged by the market economy and rural-urban migration. As illustrated by the book *One country, two societies: the rural-urban inequality in contemporary China* (M. K. Whyte, 2010), the rural-urban inequality, a result of *hukou* system—a most fundamental political institution—is the primary form of social structure in China that has worked to distort and limit the formal rights of citizens. Other social markers like social class, gender, and ethnicity tangle with *hukou* system (Wu & Treiman, 2004; Lu, 2008), making citizenship and social inclusion more complex.

Following Marshall (1950) and Turner's (1993) formulation of citizenship, Solinger (1999) employs the conceptualisation of citizenship as social identity/membership and the entitlement/right to get access to socioeconomic resources in the investigation of the citizenship status of massive numbers of migrants in municipal cities of China after the 1970s. She puts forward three research questions. First, how the market affects citizenship in urban China, where the force of the market is nascent but rising, where the regime of state socialism is waning but still strong. Second, what market logic applies in the interplay with state socialism which together reconstruct citizenship in China. Third, what the content of citizenship is in this transition period; that is what the qualification conditions and the membership benefits are for an individual entitled to the citizenship of China.

The answers to the three questions proposed by Solinger are: first, market forces, along with migrants, have gradually formulated "a virtual layering of types of citizens in cities—true citizens, second-class citizens, ersatz citizens (outside the state), and noncitizens" (Solinger, 1999, p279). This four-categorical topology of citizenship hierarchy in urban China replaces the one established by the state, that all peasants, regardless of their current residencies, are "second-class citizens".

The logic of the market runs as "*Don't ask what the city can do for you. Ask what you can do for the city*" (Li et al., 2010) as cities today are operating like enterprises for economic growth and competitiveness by the city governments who behave like entrepreneurs. But the principles of market do not stand on the side of peasant workers, either. The large-scale of laid-off workers by the state-owned enterprises between the 1990s and 2000s (Solinger, 2001), causing labour unrest across China (Cai, 2009). Although peasant migrant workers replaced workers in the state-owned enterprises because they can do the same work and can accept only half of payment of workers. These migrants are not entitled to any social welfare and benefits because of their rural identity.

The content of citizenship (overarching welfare benefits provided by the state) is draining, for the privileges and benefits provided by the state are no longer public goods to even native urban dwellers, no life-long employment guaranteed in the state-owned companies, according to the principles of market. Solinger (2003) in her report on the state transitions and citizenship shifts, points out that two categories of Chinese people residing in perpetual-level cities of China have been deprived of their citizenship. The first category are peasants who migrated to cities in search of jobs and economic betterment, and the second are workers who are laid off by state-owned entrepreneurs.

The large-scale lay-off of workers reflects not only the adjustment of industrial policy and the reform of state-owned enterprises, but also the transformation of the *hukou* system and welfare policies at the backdrop of market forces. These reforms and transformations also answered the third question—employment and urban *hukou* together have become the necessary and sufficient conditions of full citizenship.

3.4.3.2 The intersectional consequences of hukou and house ownership

The difficulty in obtaining the full entitlement of citizenship is further revealed in the interplay between house ownership and *hukou* entitlement. Before the economic reform, urban *hukou* holders were included in an allocation of social welfare and benefits, including education, pension, medical care, employment, and housing. But since the economic reform, housing or ownership of housing has become one of the conditions to acquire urban *hukou* in large cities.

Hukou policies implemented in Shanghai since 1994 have granted partial citizenship to those purchasers of commodity houses. Economic development and growth have been incorporated into the *hukou* system so as to stimulate the depressed housing market in Shanghai and many other large cities. According to Du (2004), between 1994 and the end of 2001, around 42,000 people were entitled to blue stamp *hukou* in Shanghai, among whom 88 per cent were the buyers of commodity housing, and another ten per cent and two per cent were granted because of investments and employment, respectively. But this does not mean commodity housing is affordable for everyone, especially the rural migrant workers.

A household whose members are related by blood or marriage living in a self-owned housing unit is registered as a family *hukou*, which can be either rural or urban. Accordingly, the urban *hukou* can be further divided into family *hukou* and collective *hukou* by the registration location because *hukou* registration requires residential place, which is usually an owner-occupied dwelling. However, for those who do not have an ownership, they can either use their work unit (*danwei*), or the city human resources market ³ (*rencai shichang*) of the city. Thus, collective *hukou* holders⁴ are those who do not own any housing property and thus must register the location as their work unit/the human resource market of the city where they are living.

Housing ownership has become the deciding factor of *hukou* and citizenship, especially for offspring of new city settlers. Children born in a family registered as urban collective *hukou*, are not allowed to inherit their parents' *hukou*. New-borns' *hukou* inheritance from their parents is conditioned on family *hukou*. The distinction between these two types of *hukou* is the ownership of housing. Thus, the interwoven relationship between urban family *hukou* and house ownership makes it clear that financial inclusion has gradually become important in the citizenship attainment of migrants and their offspring in cities.

³ After the restoration of college entrance examination in 1973, university graduates who are rural *hukou* holders and unemployed, will have their *hukou* location registered in *rencai shichang* for two years. If these rural graduates can find employment within the two years, the registration of *hukou* location will be moved to a *danwei*, otherwise, *rencai shichang* will ask the individuals to return the *hukou* back to their rural origins, thus individuals becoming rural migrants once more

⁴ No *hukou* booklet is issued to collective *hukou* holders, instead a collective *hukou* card containing the registration information for each person is issued. A collective *hukou* resembles a large household with a work unit or human resource market executing as the households.

The only way to solve this dilemma is to convert a collective *hukou* into a family *hukou* by purchasing a commodity housing or asking their immediate relative holding a family *hukou* to take the child or them in the booklet. This *hukou* policy has pushed many collective *hukou* holders to the housing market, especially after the ending of welfare housing allocation.

More than purchasing a place to live, buying a house means purchasing *hukou* and citizenship. Because a large number of migrants in cities are so eager to obtain urban *hukou*, the housing and mortgage market began to develop in early 2000s. Li (2010) based on survey data collected in two largest cities in China, Guangdong and Shanghai, finds that although many homebuyers (who have bought commodity housing since 1998) are still heavily reliant on their personal savings and parental support, mortgage participation has been increasing, close to 30 per cent. Respecting the determinants of using a mortgage, Li found that socioeconomic status plays an important role and migrants are discriminated against in gaining a mortgage, regardless of the difference in the housing market in two cities.

3.4.3.3 The interplay of hukou system and the decentralisation policy

Hukou system and decentralisation policy are argued to be the most prominent policy issues that have led to the marginalisation of rural migrants in Chinese cities (F. K. Wong et al., 2007). Social and economic attributes of *hukou* system make local *hukou* one of the crucial indicators of symbolic social status. Individuals and households without local *hukou* are socially and economically marginalised and stigmatised.

As Smart and Smart (2001) argue, a diverse set of institutional experimentation has been encouraged and has induced a considerable amount of socioeconomic variation at the local level, especially after the devolution of the central government⁵. Based on fieldwork in villages that are experiencing industrialisation in Guangdong, they found that decentralisation and local experimentation in the economy and *hukou* policies have cooperated with locality welfare systems—elaborating welfare benefits for the locals while excluding migrants.

Further, based on the detailed study of Dongguan city-region, Smart and Lin (2007) suggest that three important localisms partake of the variation among regions in post-1978 China. The first is local capitalism, which makes social welfare subordinate to the local social and political institutions. The second is local citizenship, which treats the entitlement and inclusion/exclusion of citizenship through the local framework instead of the national one. Thirdly, trans-locality refers to the loyalties of those who choose to contribute to their homelands through their capital although they no longer reside

⁵ However, it can be found that some Chinese scholars, for example, Wen Tiejun (Wen, 2012, p7), Jin Guantao and Liu Qinfeng (2011) argue that historically, the country's regime has never really been concentrated in the central government; instead, it has always in the hand of local governments.

there. Similarly, they conclude that citizenship endorsements are polarised between the local *and nonlocal hukou* holders regardless of the national frameworks of social welfare.

Li et al. (2010) apply the concept of citizenship as the social membership and the right to an array of resources to examine the citizenship of migrants in Chinese metropolises. They tracked the changes in the *hukou* system and the inclusion/exclusion of urban *hukou* in Shanghai over the last 30 years, finding that the residence card system introduced by the Shanghai Municipal Government has created a hierarchical structure of population management. This system works as a process to classify individuals by their cultural and economic capital and then divide them into a stratified citizenship system, according to which individuals are entitled to citizenship from a partial to complete level.

Even for the talented, the wealthy, and the educated, their entitlement to *hukou* conversion is still not guaranteed, not to mention rural migrants in urban centrals. As Li et al. (2010) have commented, the journey of *hukou* conversion is tedious, competitive, and very narrow. According to the report of *Economic Observer* (2010), after seven years' probation, only 29 out of around 3,000 people, who are the talent's residence card holders in Shanghai, met the *hukou* conversion criteria. The rate of successful *hukou* conversion is just about one per cent. The actual success rate could be much lower because some people could have dropped out because of the seemingly "hopeless" waiting at any time during this seven-years probationary period.

Residence card system and its influence on citizenship stratification are not unique to Shanghai. For example, during the 2000s and 2010s, cities in Guangdong Province and other municipal cities have implemented a point-based system, allowing individuals with human and economic capital to apply for local citizenship (Song, 2014).. Both the residence card and point-based system are much like the Skilled Worker Visa for internal migrants in many developed countries (Zhang, 2012). Both have been implemented in addition to the existing *hukou* system in many other cities in China since the 2014 reform (The CPC Central Committee and the State Council, 2014). Thus, residence card essentially is part of the *hukou* system in mega-cities in China, it prolongs the journey to obtain the full local citizenship for migrants. This extended journey has actually promoted localism.

Localism is the source of the distinction against outsiders and other non-locals. Qian et al. (2012) have documented migrants being resisted and rejected as locals because they cannot speak Cantonese, the local language, defended by local people as a hallmark of an authentic local identity. This language conflict, as an essential construction of place identity uncovers just the tip of the iceberg of non-local discrimination. Studies show that non-local *hukou* holders in large Chinese cities experience multiple sources of discrimination: having no or little access to welfare benefits from the local government just because of their *hukou* (Song, 2014; Wang et al., 2015; Huang & Guo, 2017); experiencing labour market discrimination, especially in high-wage industries (Song, 2014), including being turned down from job applications or paid less, especially for non-local women (Chen et al., 2018).

Scholars have also found that the larger cities are, the stronger the resistance and discrimination against migrants from the settled citizens is, and the more polarised status regarding the entitlement of citizenship (Song, 2014; Wang et al., 2015; Huang & Guo, 2017). This is consistent with Tuner's worries (1999)– "Nation-states no longer adequately provide citizenship for their members and instead we have a growing war of megacities and mega-economies against each other". He has also poignantly remarked in his book that

"The pessimistic view of the future is that societies like China will break down into mega-cities warring with each other and that the international links in the economy will undermine traditional notions of citizenship and that the political future will be a much more insecure and uncertain environment". (p. 274)

The *hukou* and resident card system in large cities, like Shanghai and Guangzhou discussed above, is a potent example of citizenship stratification under the manipulation of political and administrative control and economic rationalism. Torfing (1999) pointed out that reforms of social institutions are constrained by path dependency; a significant amount of effort is needed for the "path-shaping in a path-dependent context" to prevent the "the old path from kicking back in the sense of blocking or perverting desired policy outcomes" (p. 389). The documented evidence of the experienced nonlocal discrimination is consistent with Torfing's (1999) argument, that *hukou* reforms based on local government are heavily influenced by the continual salience of the rural-urban divide. That is, localism is just the secondary discrimination which derives from the rural-urban divide. Localism is the base of non-local discrimination against migrants and especially the rural migrants.

3.4.3.4 Summary and research direction

From the intersectional lens, it is apparent that the three types of intersectional effects from interplay of *hukou* policy, market forces, house ownership, and decentralisation policy has further increased the marginalisation status of migrant workers, especially the rural migrants. Localism and rural discrimination work together to intensify the desire of obtaining local *hukou*, especially the family *hukou*, which requires housing. This in turn comes back to the discussion of house ownership, *hukou* and full citizenship. Hence, the dilemma is obvious: for migrants, purchasing a house has become an unavoidable path to gain full citizenship in cities.

However, their *hukou* status put them in a disadvantaged position in the housing and mortgage market. Meanwhile, housing is expensive and can rarely be paid off outright, and the extremely low deposit rate in China has made saving an undesirable option for investment in order to purchase a house. The association between citizenship and financial inclusion has become clear: to obtain urban citizenship, purchasing a house is a must-do thing, which leads to mortgage or financial investments to accumulate income for the households. Financial inclusion has become important for migrants in cities. As suggested by Green and Wachter (2010) from developed market economies, access to adequate

finance is the key to settling down in cities. How migrants are financially included is highly associated with how migrants are socially included.

In the next chapter (**Chapter 4 Data and Research Methods**), I provide an overview of data and sample, operationalisations of key concepts, and statistical methods used for detecting correlative and causal relationships for each empirical chapter.

Chapter 4 Data and Research Methods

4.1 Selection of secondary datasets

This thesis is a theoretically oriented quantitative investigation of impact of internal migration on family life. I use datasets from two large-scale nationally representative social surveys, the China Family Panel Studies (CFPS) and the China Household Financial Studies (CHFS), as well as census data of economic development at the provincial level. Before moving on to the overview of these datasets, I will explain why choosing different datasets in one thesis.

The first two empirical studies in the thesis focus on the influence of family migration on children's mental health and other developmental outcomes, and the emotional health of the rural elderly who are left behind. These investigations need data with information recorded at the individual level, but importantly they also require data centred on the household/family. Although several other national-level survey datasets exist, such as the Chinese General Social Survey (CGSS) and the Chinese Social Survey (CSS), data from China Family Panel Studies has two outstanding advantages.

The first advantage is that the CFPS is a household-level survey – that is, it equally surveys all family members who are eligible for the research within a sampled household, including the children, who complete their own questionnaires either by themselves or with the help of their family members. The second advantage is that the CFPS supplies its own T-tables (see Table 4-3 below), enabling each family member to equally act as the “household head” to assess their relationships with other family members. This is different from the traditional survey design, which usually nominates only a single household head. Thanks to the T-tables, CFPS has also acquired information on cross-generational relationships and also on family members living apart (that is, who do not reside in the sample household). Thus, the availability of information on family structure and family member relationships, including family members who do not currently live in the family home, make the CFPS stand out among other Chinese social surveys for the analysis of migration on family relationships.

However, although the CFPS is nationally representative and provides both micro and macro-level data, it does not provide detailed information on household financial behaviour and financial inclusion. Thus, it was necessary to seek an alternative data source for the final empirical chapter. The China Household Financial Studies (CHFS) is the first and so far the only nationally representative survey on Chinese household finance (Gan et al., 2014). It has covered the most detailed information on financial activities at the household level, including financial and non-financial assets, debts and credits, social welfare, and commercial insurance, along with household demographics. Thus, it is ideal for supporting the investigation of household financial inclusion status.

Both the CFPS and the CHFS datasets are of high quality. Xie et al. (2017) evaluate the data quality of CFPS baseline data by comparing it with Chinese national census data and CGSS. They find that the distributions of age-sex, urban-rural division, and marital status of CFPS 2010 are close to the 2010 national census; family size is larger than the 2010 census; family income estimates are closer to the estimates of CGSS. Differences in educational attainment by categories between CFPS 2010 and CGSS 2010 are within 2 per cent. Turning to the quality of the CHFS, its estimates of the distributions of urban-rural division, age, gender, family size (and by *hukou*), and urbanisation level in the sampled cities are approximately equal to the general population, except that individual disposable income is about 2.40 per cent higher than the census estimate (Survey and Research Centre For China Household Finance, 2013). Given these favourable data quality assessments, it can be concluded that CFPS and CHFS datasets are reliable for the empirical enquiries of the thesis, and that research findings drawn from CFPS and CHFS may be generalized to the Chinese population with a reasonable level of confidence. However, there is a largest shortcoming of both two datasets—a very high level of data attrition, as Xie and et al (2017) report that in CHFS, there is about a 10 to 15 per cent loss of participants in each wave of CFPS dataset.

Each of the empirical chapters contains its own Data and Methods section, in which the research framework, descriptive statistics of research variables, and the research method of each chapter are discussed. In the sections below, I provide an overview of the two datasets, the sample selection and key measures for each empirical chapter, and an overview of the statistical models applied for the analysis.

4.2 Overview of the datasets

4.2.1 The China Family Panel Studies project (CFPS)

4.2.1.1 Sampling Design

China Family Panel Studies (CFPS) is a nationally representative social survey whose data is collected at three levels – individual, household, and community – over multiple time periods. It is designed to document changes in Chinese society, covering spheres of life including socio-demographic factors, income and work, education, health, and wellbeing. The goal of CFPS is to provide high-quality and comprehensive data for both academic and policy research.

Given the social and economic differences between regions in China, the sampling of CFPS is based on stratified Probability-Proportional-to-Size Sampling (PPS). Indicators for stratification are administrative units (details can be found in the five-level administration system described in Chapter

2 and GDP per capita as the ordering index for socioeconomic status (SES) ⁶. The sample of CFPS covers 25 provincial-level regions (municipalities/provinces/autonomous regions) in China, excluding Hong Kong, Macao, Taiwan, Xinjiang, Xizang, Qinghai, Inner Mongolia, Ningxia, and Hainan. The total population of these 25 provincial-level regions occupies 95% of the total population in China. The sources of CFPS samples at the provincial level are displayed in Figure 4-1.

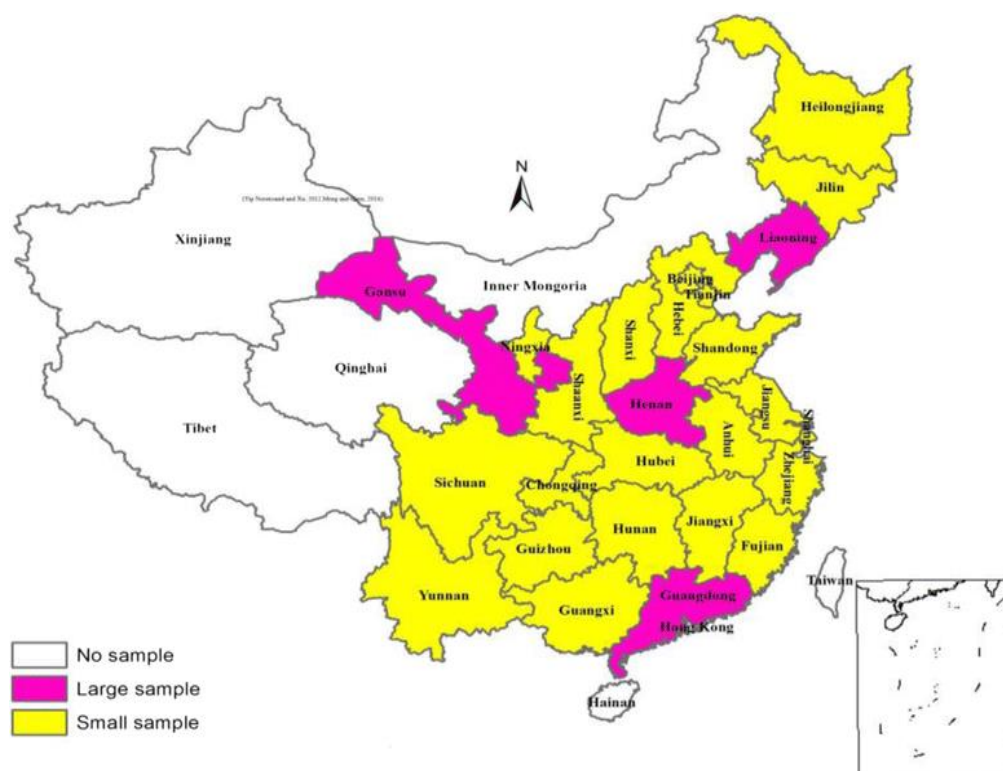


Figure 4-1 The Sources of CFPS Samples at the Provincial Level

Note. Reprint from “China Family Panel Studies User Guide (3rd edition)”, by Xie, Y. et al., 2017, China Family Panel Studies, p. 17. Copyright 2017 by Peking University Open Research Data.

As shown in Figure 4-1, there are two groups of sampling frames, the “large sample” and the “small sample”. The “large sample” is made of five independent sampling frames, which are Shanghai, Guangdong, Liaoning, Henan, and Gansu. The remaining 20 provincial-level regions form the “small sample” sampling frame. Information on the target Sample Size of CFPS 2010 according to a dichotomous category of the sampling frame is displayed in Table 4-1.

⁶ However, as CFPS guidebook pointed out, the GDP per capita in some administrative units are not available, non-agricultural population density is used.

Table 4-1 Target Sample Size of CFPS2010

Category	Provincial-level regions	Number of target households	Oversampling rate
“Large sample” region	Shanghai	1,600	10.28
	Liaoning	1,600	4.45
	Henan	1,600	2.04
	Gansu	1,600	7.30
	Guangdong	1,600	2.02
“Small sample” region	Jiangsu, Zhejiang, Fujian, Jiangxi, Anhui, Shandong, Hebei, Shanxi, Jilin, Heilongjiang, Guangxi, Hubei, Hunan, Sichuan, Guizhou, Yunnan, Tianjin, Beijing, Chongqing, Shaanxi.	8,000	1.00

Note. Reprint from “China Family Panel Studies User Guide (3rd edition)”, by Xie, Y. et al., 2017, China Family Panel Studies, p.18. Copyright 2017 by Peking University Open Research Data.

At the stage of sampling implementation, each sub-sample of the 25 regions is collected via three stages: first, the Primary Sampling Unit (PSU) is composed of administrative districts/counties—at the county level; the Second-stage Sampling Unit (SSU) is based on administrative neighbourhood/villages—the community level; the Third-stage Sampling (TSU) is the household level.

The PSU and SSU of CFPS are based on the Chinese administrative divisions, while TSU is based on Probability Proportional to Size (PPS) Sampling of housing units according to the street listing. Detailed information on the three-stage sampling of CFPS 2010 can be found in Table 4-2. Specifically, Shanghai has its own sampling frame.

Table 4-2 The three-stage sampling of CFPS 2010

Sampling stage	“Large sample” region: Shanghai	“Large sample” region: Liaoning, Henan, Guangdong, Gansu,	“Small sample” region	Total
Primary	32 streets	16*4=64 counties	4*20=80 counties	144 counties+32 streets
Second	32 * 2 communities=64 communities	64 * 4 communities =256 communities	80 * 4 communities =320 communities	640 communities
Third	640 * [28,42] households			19986 households

Note. Adapted from “China Family Panel Studies User Guide (3rd edition)”, by Xie, Y. et al., 2017, China Family Panel Studies, p.19. Copyright 2017 by Peking University Open Research Data.

4.2.1.2 Questionnaire design and the key concepts of “family” and “family members”

The CFPS is conducted at three levels and the questionnaire of CFPS 2010 is composed of four sub-questionnaires: *Community Questionnaire*, *Screening Questionnaire*, *Family Questionnaire* (including the family roster questionnaire), and *Individual Questionnaire*. Individual Questionnaire is further divided into Child Questionnaire, and Adult Questionnaire. The structure of the questionnaire design of CFPS 2010 is illustrated in Figure 4-2.

Accordingly, the *Community Questionnaire* is used to obtain information at the village or urban community level, providing an overall picture of the characteristics of the sampled villages and urban communities, including information on their social services and infrastructure, population, economy, community committee and policy implementation, housing, and so on.

The *screening questionnaires* used by CFPS to select its target respondents is composed of two parts, the Residence Screening and Household Screening. Screening Questionnaire, also known as Filtering Questionnaire, is made of a series of questions that help researchers find out the qualified respondents for the survey. Before the field interview of CFPS, non-residential housings, vacant houses, and non-family households are firstly screened out. After this, households that do not meet the three requirements are eliminated. The requirements are: 1) the number of independent economic units within the sampled residence is determined; 2) the eligible family households are determined among the independent economic units and those belong to mainland China.

If there are more than passed the Screening Questionnaire, the computer system randomly chooses one for the survey. A family member who best knows the information about the household is asked to fill up the *Family Roster*. This family member also answers the *Family Questionnaire*, which covers areas relating to housing, as well as social and economic information relevant to the household.

At the individual level, individuals who are identified as family members of the sampled households are surveyed, those aged 16 and above answering the *Adult Questionnaire* and otherwise answering the *Child Questionnaire*. All the individuals are required to answer the *Public module*, which covers schooling, time use, mobile phone and internet use.

It is important to note that the definition of a household and a family member in CFPS refers to an economic unit that is registered in a residential community with at least one family member having a Chinese *hukou*. Regarding being a family member of a sampled household, the person must be financially dependent on immediate relatives or non-immediate blood/marital/adoptive relatives who are financially correlated. To identify family members and the family relationships within a household, CFPS developed and used T-tables, as illustrated in **Table 4-3**.

According to the CFPS T-1, members whose starting code was “1” are those related to the household via blood/marriage/adoption, should also be listed in T-2 and might be interviewed with the individual questionnaire. Members whose code started with “3” were those not related to the family through blood/marriage/adoption, including housekeepers, drivers, tenants, and other residents, would not be listed in T-2 and would not be interviewed. T-2 recoded family relationships among those who lived together when the research was conducted, whereas T-3 recoded the information of those family members who do not live in the sampled households.

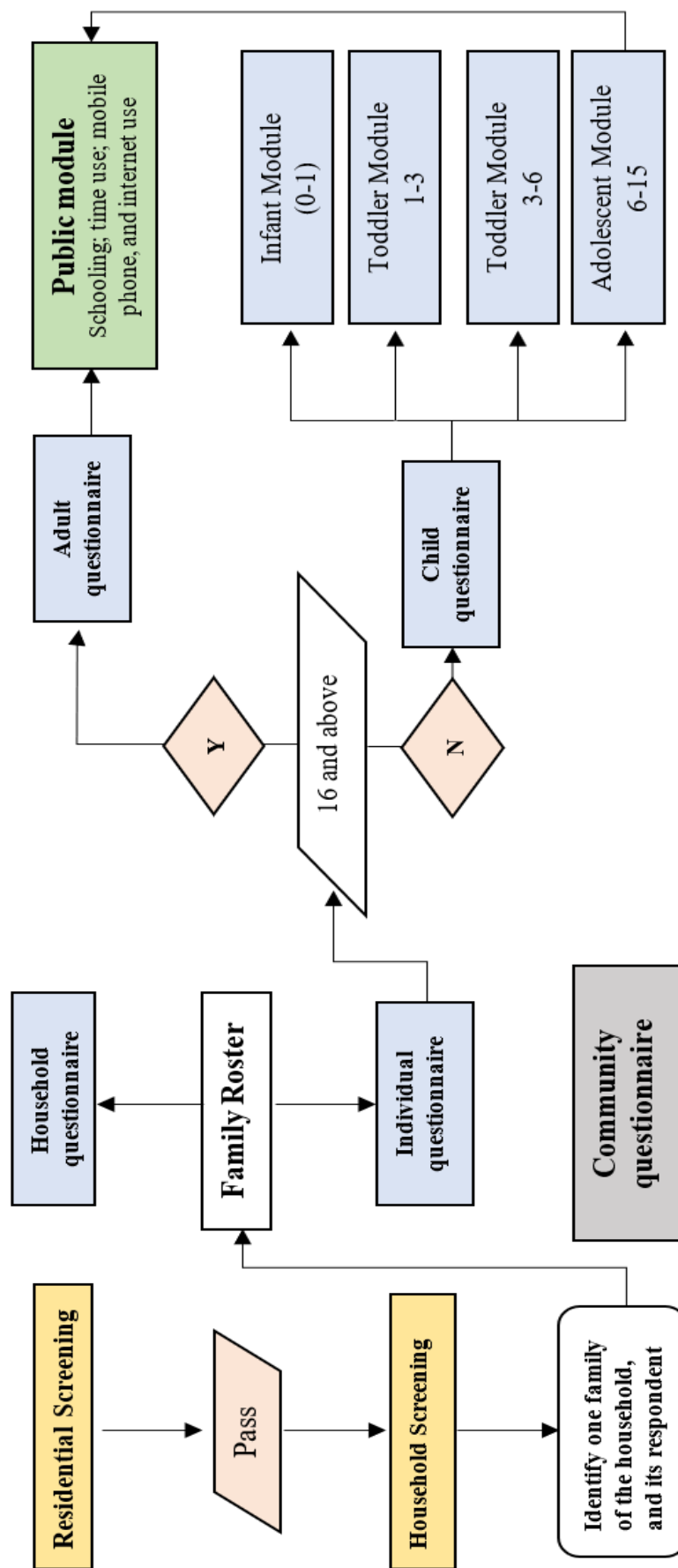


Figure 4-2 The flowchart of the questionnaire design of CFPS 2010

Note. Adapted from “China Family Panel Studies User Guide (3rd edition)”, by Xie, Y. et al., 2017, China Family Panel Studies, p.23. Copyright 2017 by Peking University Open Research Data.

Table 4-3 Illustration of CFPS T-tables

Co-Resident Family Members (Table T1)									
Person code	Name	Birth date	Sex	Marital status	Highest education	Primary occupation	Administrative/managerial position	...	Household head?
101									
102									
...									
301									
302									
...									
Relationship table for the lineal family members who live together (Table T-2)									
Person code	Name	Father	Mother	Spouse	Child 1	Child 2	Child 3	...	Child 10
101									
102									
...									
Information on the lineal family members who do not live together (Table T-3)									
Person code	Name	Birth date	Gender	Marital status	Highest education	Primary occupation	Administrative/managerial position	...	Household registration (<i>Hukou</i>)
201									
202									
...									

Note. Reprint from “China Family Panel Studies User Guide (3rd edition)”, by Xie, Y. et al., 2017, China Family Panel Studies, p.30-31. Copyright 2017 by Peking University Open Research Data.

Given that CFPS has wide survey coverage with a large sample size based on a complicated survey design, traditional chapter surveys are neither practical nor feasible. The CFPS adopted Computer Assisted Personal Interviewing (CAPI) technology in 2010. In the follow-up surveys starting from 2012, CFPS also adopted Computer Assisted Telephone Interviewing (CATI) technology. The national baseline survey of CFPS was launched in 2010 after three-year pilot studies between 2007 and 2009. The CFPS 2010 successfully interviewed 14,960 households, leading to a 93.5% successful rate. Within these households, 33,600 adults and 8,990 children were interviewed. It is from these 8,990 children and 33,600 adults that the research samples for Chapter 5 and Chapter 6 are selected, respectively. The rationale is explained in 4.3 Sample Selection and key research measures.

4.2.2 The CHFS project

China Household Financial Survey (CHFS) is a national survey project, designed to document household financial and economic activities. Chaired by the Survey and Research Center for China Household Finance, at the Southwest University of Finance and Economics, CHFS focuses on the economic wellbeing of the Chinese people and households. The survey covers substantive areas such as income and employment, assets and liabilities, income and expenditure, social benefits and insurance, and public opinion on financial and economic issues.

The provision of detailed and high-quality information of the financial and economic lives of Chinese people enables academic researchers and policymakers to dive deep into the social facts and

better understand how the lives and livelihoods of Chinese people have been shaped by financialisation. Meanwhile, CHFS provides information to investigate the extent to which the financial and economic policies issued by the Chinese central government for more effective and equal redistribution have been implemented, to what extent these policies have affected people's economic wellbeing, and to what extent urbanisation, rural-urban integration, and broader issues of social equality and justice have been affected.

Research on social changes occurring in China not only provides valuable findings to promote a better understanding of China, but also presents the potential to challenge the premises behind the modernisation of Western countries and thus bring changes to the course of world development.

4.2.2.1 Sampling Design

Like the sampling design of CFPS 2010, the sample area of the first wave of CHFS conducted in 2010 is also based on 25 Chinese provinces/cities/autonomous regions, Hong Kong, Macao, Taiwan, Xinjiang, Xizang, Qinghai, Inner Mongolia, Ningxia, and Hainan. CHFS also implemented Probability-proportional-to-Size Sampling (PPS) along with implicit stratification and three-stage sampling.

The Primary Sampling Unit (PSU) was composed of 2585 administrative districts/counties; the Second-stage Sampling Unit (SSU) consisted of administrative neighbourhood/village communities, and the Third-Stage Sampling (TSU) consisted of households. Each stage of the sampling was based on PPS, weights being the population density (or the number of households in the survey region). On the implementation stage, the number of counties to be sampled was calculated through the reverse deduction method. First, according to the socioeconomic development of regions, the number of households sampled at the third stage varied between 20 and 50. Thus the average number of the households was 25; the number of communities sampled on the second stage was set as four, and thus the number of counties sampled was 80 ($8000 / (4 \times 25)$).

As reported by the Survey and Research Center for China Household Finance, the descriptive statistics on the GDP per capita of the sampled 80 counties in 2011 were close to the results based on China census data in 2011. Meanwhile, the refusal rate of interviewees was lower than another representative Chinese survey, China Health and Retirement Longitudinal Study (CHARLS), and much lower than Consumer Expenditure Survey (CEX) and Survey Household Income and Wealth (SHIW). Thus, the data quality of CHFS is reliable.

In fact, it is the second wave of CHFS which forms the basis for Chapter 7, because of its broader coverage and data scale. As mentioned, the sample area of the first wave of CHFS conducted in 2010 is based on 25 Chinese provinces/cities/autonomous regions, Hong Kong, Macao, Taiwan, Xinjiang, Xizang, Qinghai, Inner Mongolia, Ningxia, and Hainan. Starting from the second wave in

2013, the CHFS sampling area has included Inner Qinghai, Mongolia, Niang Xia, and Hainan, therefore having increased the sampled Chinese provinces/cities/autonomous regions to 29.

Figure 4-3 displays the sources and the sampling density of CHFS 2013 at the provincial level. This change has increased the number of sampled households from 8438 in CHFS 2011 to 28141 in CHFS 2013. Also, the number of interviewed individuals increased from 29,324 to 97,906. Since a large sample size would be more beneficial for the research with respect to the accuracy and representativeness of the analyses, Chapter 7 applies CHFS 2013 for the investigation of household financial inclusion in urban China.

Only the weight of household drawn in the community level is provided by the survey team, in the master data set: *swgt*. Its calculation is based on a three-stage process: $1/P_1 * 1/P_2 * 1/P_3$. P_1 is the probability to be drawn of a city and a county within a province/perceptual city, P_2 is the probability to be drawn of the district/village administrated by the city/county, and P_3 is the probability to be drawn of the community administrated by the district/village. The analysis of Chapter 7 includes three levels, Level 1—the household, Level 2—the city, and Level 3—the province.



Figure 4-3 The Sources of CHFS Samples at the Provincial Level

Note. Created by author based on data from China Household Financial Studies 2013, City-level data.

4.2.2.2 Questionnaire design of CHFS

The questionnaire of CHFS 2013 is composed of four parts: **Demographic Characteristics, Assets and Debts, Insurance and Social welfare**, and **Income and Expenditure**. Information collected in the dataset has been divided into three parts: household, individual, and city-level data. Information on the city-level, including sampling weight, region, province, the label of the city is provided by the team of CHFS survey team.

Demographic Characteristics comprises two sections: the Filter Questionnaire and the Family Roster. A household will be selected for the survey when the answers to the following five questions are “yes”. First, “*Is the address the ‘loaded address’*”; second, “*Can this place be considered as a residence*”; third, “*Are the family’s main economic activities are carried out in this city/county*”; fourth, “*Has anyone in the family lived in this city/county for more than six months over the past year*”; and finally, “*Does anyone in the family hold citizenship of a foreign country, or a passport from Hong Kong, Macao, or Taiwan?*”. Similarly to CHPS, if there is more than one family in the household, interviewers can just randomly select one family to represent the household for the rest of the questionnaire.

The **Demographic Characteristics** section yields two datasets, the individual-level data on each family member’s demographic and SES information and part of the household-level dataset. The individual selected as respondent to this section is the person who has the best knowledge of the family’s financial situation. Family members’ relationships and basic information of each family member is also answered by this selected person, who is the ‘ego’ of the family structure.

This design of primary information collection about family members is different from the design of CFPS. However, it is not problematic in the context of the chapter on financial inclusion, since the family relationship is not the primary concern of the research in Chapter 7. The respondent who has the best knowledge of the household continued to answer the remaining three parts of the survey, **Assets and Debts, Insurance and Social welfare**, and **Income and Expenditure** at the household level.

4.2.3 The complementary dataset

The socioeconomic development level of regions is also included in the statistical analysis of Chapter 7. SES development, measured as GDP per capita at the provincial level in 2013, is obtained through the China Census. Table 4-4 displays the GDP information of the 29 provinces.

Table 4-4 GDP information of the 29 provinces

Province	Province ID	Total GDP	Rank of total GDP	per capita GDP	Rank of per capita GDP
Guangdong	44	62,163.97	1	58,678.47	8
Jiangsu	32	59,161.75	2	74,699.37	4
Shandong	37	54,684.3	3	56,463.64	10
Zhejiang	33	37,568.49	4	68,593.19	5
Henan	41	32,155.86	5	34,186.54	22
Hebei	13	28,301.40	6	38,835.49	16
Liaoning	21	27,077.70	7	61,694.46	7
Sichuan	51	26,260.77	8	32,516.25	23
Hubei	42	24,668.49	9	42,686.43	14
Hunan	43	24,501.70	10	36,906.26	18
Fujian	35	21,759.64	11	58,056.67	9
Shanghai	31	21,602.12	12	90,748.81	3
Beijing	11	19,500.60	13	94,237.66	2
Anhui	34	19,038.90	14	31,795.09	25
Inner Mongolia	15	16,832.38	15	67,603.99	6
Shaanxi	61	16,045.21	16	42,752.00	13
Heilongjiang	23	14,800.00	17	38,601.98	17
Guangxi	45	14,378.00	18	30,709.10	26
Tianjin	12	14,370.16	19	101,688.85	1
Jiangxi	36	14,338.50	20	31,835.53	24
Jilin	22	12,981.46	21	47,017.24	11
Chongqing	50	12,656.69	22	42,976.88	12
Shanxi	14	12,602.20	23	34,901.12	21
Yunnan	53	11,720.91	24	25,157.57	27
Guizhou	52	8,006.79	25	22,981.60	29
Gansu	62	6,300.00	26	24,668.15	28
Hainan	46	3,146.46	27	35,491.06	19
Ningxia	64	2,600.00	28	40,173.67	15
Qinghai	63	2,101.05	29	35,491.06	20

Note. Retrieved from China Census (2013)

4.3 Sample selection and key research measures

4.3.1 Research sample and key measures for Chapter 5

4.3.1.1 Research sample

Chapter 5 investigates the effect of school boarding experiences on children's mental health, wellbeing, academic performance, and self-efficacy in China, the research being motivated by two major social and institutional changes in China: the 'Rural School Merging Program' and the ongoing rural-urban internal migration. As discussed in Chapter 2, those rural-to-urban migrant workers, confronted with the difficulty of bringing their children to cities, must decide whether to choose 'surrogate caregivers' in the form of boarding schools. The research questions are:

- Q1. How does attending boarding school influence children's outcomes?*
- Q2. Does the influence of boarding school differ between children whose parents have, and have not, migrated for work?*
- Q3. Is the decision over whether a child should attend boarding school subject to selection effects which should be accounted for in analytical models?*
- Q4. If so, what are the effects of boarding school and parental migration on child outcomes, controlling for selection effects?*

This study uses the baseline survey of the longitudinal and population-based data from China Family Panel Studies (CFPS 2010) to investigate the factors influencing four aspects of children's outcomes. There are primary reasons for using only the baseline data. First, the key measures of mental health have adopted different measurements in different waves of the survey. For example, CFPS 2010 applies six five-point Likert items for mental health, whereas CFPS 2012 applies 20 four-point Likert items. Second, the data attrition is considerably high--10 to 15 per cent loss of participants in each wave, as Xie and et al. (2017) reported.

The sample selection is largely decided by the availability of these key measures. As mentioned above, 8990 youths aged under 16 were interviewed for the *Child Questionnaire* in the baseline survey of CFPS in 2010. It is important to note that the *Child Questionnaire* itself was divided into four modules according to the age group of the children. The key measures in Chapter 5 are four dependent variables (mental health, wellbeing, academic performance, and self-efficacy), one independent variable (boarding), and one moderator (parental migration), which are not available for all 8990 children. Table 4-5 illustrates the availability of these key measures by age according to the design of the *Child Questionnaire*.

Since mental health, wellbeing, and efficacy are all available only for children aged between 10 and 15 years old, the research sample is narrowed to this group of children, the initial sample size of

which is 3464. After dropping some observations due to missing values, the financial analytical sample size will be smaller than 3464.

Table 4-5 Key research measures and their availability in CFPS2010

Key measures	Infant Module	Toddler Module	Adolescent Module	
	0–1-year-old	1-6 years old	7-9 years old	10-15 years old
Mental health	×	×	×	√
Wellbeing (self-rated)	×	×	×	√
Academic performance	×	×	√	√
Efficacy	×	×	×	√
Boarding status	×	×	×	√
<i>N</i>	294	3049	2183	3464

4.3.1.2 Key variables and the measures

The four dependent variables in Chapter 5 are mental health, wellbeing, academic performance, and self-efficacy. Each independent variable is derived from a set of measures available in CFPS 2010, as shown in Table 4-6.

In the survey, children aged between 10 and 15 were asked a set of six questions to measure their mental status in the past one month, four questions to rate their general wellbeing level, a set of mathematical questions and a set of Chinese language questions which tested the academic performance. Specifically, for the measure of the self-efficacy of children, not only had the children been interviewed according to a set of six questions, but also their caregivers were asked a similar set of questions, as displayed in Table 4-6. The alpha value (of Cronbach's) of these four dependent variables are 0.79, 0.71, 0.72, and 0.81, indicating a high level of reliability of these measures.

Essential control variables also include community-level indicators, including the type of the community (urban vs. rural), population density, the accessibility of public facilities (measured by the distance between the home and the nearest town), and the economic development level, which together may influence whether children become boarders, and may also be related to whether *the Merging Program* had affected the community. These covariates on household and community levels are available at the household level and may be merged into the children's dataset by using household ID. A detailed description of data cleaning and the coding of variables can be found in the *Data and Methods* section of **Chapter 5**.

Table 4-6 CFPS 2010 Survey Questions of the dependent variables of Chapter 5

Variables	Component Measures
Mental health (10–16-year-old)	N4 The following are some descriptions of people’s mental statuses. Please select according to your statuses in the past month. 1. <i>Almost every day</i>, 2. <i>2-3times a week</i>, 3. <i>2-3time a month</i>, 4. <i>Once a month</i>, 5. <i>Never</i> N401 Feel depressed and cannot cheer up no matter what I am doing N402 Feel nervous N403 Feel upset and cannot remain calm N404 Feel hopeless about the future N405 Feel everything is difficult N406 Think life is meaningless
Wellbeing (10–16-year-old)	M3 Please answer the following questions according to your own situation. M301 Do you think you are popular? (<i>Not popular at all</i>)1—2—3—4—5(<i>very popular</i>) M302 Are you happy? (<i>Very unhappy</i>)1—2—3—4—5(<i>Very happy</i>) M303 Are you confident about your future? (<i>Not confident at all</i>)1—2—3—4—5(<i>Very confident</i>) M304 Is it easy for you to get on well with others? (<i>Very hard</i>)1—2—3—4—5(<i>very easy</i>)
Academic performance (6–16-year-old)	24 mathematical questions (Note, children in primary and beneath answer Q1-Q24; children in middle school answer Q5-Q24; children in high school and above answer Q13-Q24) (Right=1, Wrong=0) 34 Chinese language questions (Note, children in primary and beneath answer Q1-Q34; children in middle school answer Q9-Q34; children in high school and above answer Q21-Q34) (Right=1, Wrong=0)
Academic self-efficacy (10–16-year-old)	F8 The following questions are related to your daily observations of *** (Child’s name). Please answer according to the actual situation. 1. <i>Strongly agree</i>, 2. <i>Agree</i>, 3. <i>Disagree</i>, 4. <i>Strongly disagree</i>, 5. <i>Neither agree or disagree</i>, 6. <i>Do not know</i> F801 This child studies very hard. F802 This child checks his/her homework several times after it is finished to make sure it is correct. F803 This child does not play until he/she finishes his/her homework. F804 This child can concentrate his/her attention when he/she is doing something. F805 This child obeys the rules. F806 Once he/she starts to do something, this child will complete it no matter what happens. F807 This child likes to arrange his/her own things in order. S6 For each of the following statements, please tell me your opinion. 1. <i>Strongly disagree</i>, 2. <i>Disagree</i>, 3. <i>Neither agree nor disagree</i>, 4. <i>Agree</i>, 5. <i>Strongly Agree</i>, 79. <i>Not applicable</i> S601 I study hard. S602 I concentrate on studying while in class S603 I check my homework several times to make sure it is correct before handing it in S604 I abide by the school rules and regulations. S605 I like to put my things in order at school. S606 I finish my homework before I can play.

4.3.2 Research sample and key measures for Chapter 6

4.3.2.1 Sample selection

Chapter 6 investigates the temporal effects of the migration of adult children on the emotional health of rural elderly parents who stay in rural villages. The two research questions:

Q1: Whether or not adult child migration type is associated with rural elders' self-evaluated emotional health differently?

Q2: Whether or not the duration of adult child migration is associated with the emotional health of rural elderly parents in a nonlinear way? And if yes, whether the nonlinear impacts vary across migration types?

The analysis in Chapter 6 is based on the CFPS baseline survey data of **Adult Questionnaire**. The motivations of using only the baseline survey are two-fold. First, as mentioned above the data attrition is the issue. Second, the key measure—migration duration, can be obtained through the retrospective enquiries on the historical information about family members' being away, which is accurately measured by year and date. Thus, cross-sectional data can satisfy the investigation. The sample selection criteria are decided by the target research population—elders who (1) are aged 60 and above, (2) registered as rural *hukou*, (3) currently living in rural areas, and (4) having at least one economically correlated adult child. Figure 4-4 displays the sample selection process. The number of individuals who meet the four criteria is 3014. But the final research sample for Chapter 6 is smaller due to missing values on other key measures, which is 2937.

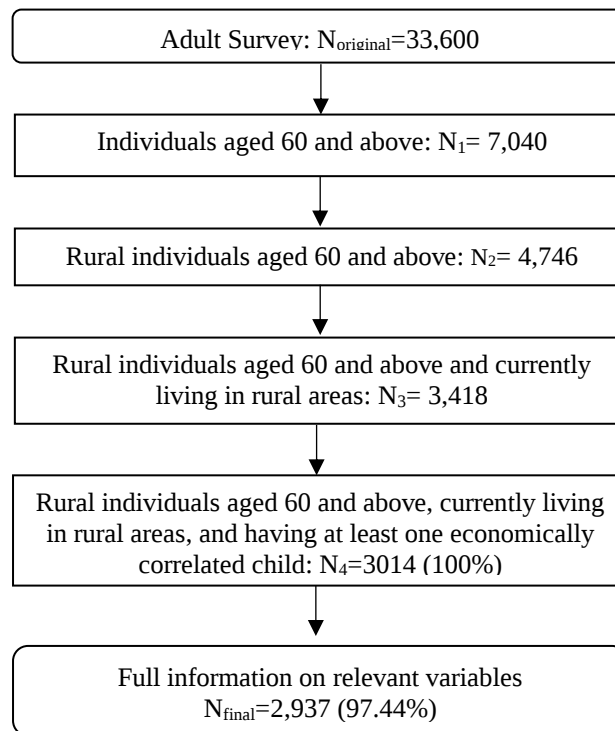


Figure 4-4 The flowchart for sample selection of Chapter 6

4.3.2.2 Key variables and the measures

The emotional health of elderly parents can be measured by two sets of questions in CFPS 2010, indicating the mental status and general wellbeing. These questions are listed in Table 4-7. Descriptive statistics of the research sample are in the **Data and Methods** of Chapter 6.

Table 4-7 CFPS 2010 Survey Questions of the dependent variables in Chapter 6

Variables	Component Measures
Mental health (16-year-old and above)	Q6 The following are some descriptions of people's mental statuses. Please select according to your statuses in the past month. <i>1. Almost every day, 2. 2-3times a week, 3.2-3time a month, 4. Once a month, 5. Never</i>
	Q601 <i>Feel depressed and cannot cheer up no matter what I am doing</i>
	Q602 <i>Feel nervous</i>
	Q603 <i>Feel upset and cannot remain calm</i>
	Q604 <i>Feel hopeless about the future</i>
	Q605 <i>Feel everything is difficult</i>
	Q606 <i>Think life is meaningless</i>
Wellbeing (16-year-old and above)	K8 Please answer the following questions according to your own situation.
	K801 <i>Do you think you are popular?</i> <i>(Not popular at all)1—2—3—4—5(very popular)</i>
	K802 <i>Are you happy?</i> <i>(Very unhappy)1—2—3—4—5(very happy)</i>
	K803 <i>Are you confident about your future?</i> <i>(Not confident at all)1—2—3—4—5(very confident)</i>
	K804 <i>Is it easy for you to get on well with others?</i> <i>(Very hard)1—2—3—4—5(very easy)</i>

4.3.3 Research sample and key measures for Chapter 7

4.3.3.1 Research sample

Chapter 7 applies the second wave of CHFS survey data. The investigation of financial inclusion in Chinese cities is no longer at the individual level, instead, it is at the household level.

One of the criteria for whether a household can be selected into the research sample is the availability of household SES information. SES is measured as the SES characteristics of the household heads, including employment, education, and party membership; however, not all the respondents of CHFS survey are household heads. The two research questions are:

Q1: Wther the level of financial inclusion is determined by the hukou hierarchy via institutional barriers and non-local discrimination mechanism?

Q2: Whether economic development at the province and city level can modify how hukou hierarchy shapes financial inclusion?

As can be found in Table 4-8, the percentage of respondents who are identified as the household head is around 77 per cent in the urban sub-sample, which is slightly higher than of the total sample, and about three per cent higher than that of the rural sub-sample. The second-largest group of respondents answering the questionnaire are the partners of the household heads, whose proportion ranges between 17 and 20 per cent among different samples, followed by the parents and children. It would certainly cause data censorship and affect estimation accuracy if households whose respondents are not household heads are not included in the research sample.

Table 4-8 The distribution of the survey respondent and the household head

A1014.What is the relationship between the respondent and the household head?	Urban		Rural		Total	
	Freq	%	Freq	%	Freq	%
1. Himself/herself	14,767	76.9	6,524	73.0	21,291	75.66
2. Spouse or Partner	3,341	17.4	1,760	19.7	5,101	18.1
3. Parents	322	1.7	268	3.0	590	2.1
4. Parents-in-law	34	0.2	12	0.13	46	0.2
5. Grandparents (-in-law)	5	0.03	4	0.04	9	0.03
6. Children	494	2.6	231	2.6	725	2.6
7. Daughter/Son-in-law	146	0.8	95	1.1	241	0.9
8. Grandchildren	21	0.1	9	0.1	30	0.1
9. Grandchildren-in-law	4	0.02	1	0.01	5	0.02
10. Brothers and/or Sister	32	0.8	20	0.2	52	0.2
11.Other	41	0.2	8	0.1	49	0.2
Missing	2	0.01	0	0.0	2	75.7
Total	19,209	100	8,932	100	28,141	100

Note. Adapted from CHFS2013 Questionnaire

I use the dyadic family relationship to pin down the household head's information from their partners, parents, and children. For example, if the respondent is the spouse or partner of the household head, another household member, who is the "Spouse/Partner" on the question "A2001. *What is the relationship of the family member to the respondent?*", must be the household head. In the same logic, through the dyadic relationship of parent-child, household members who are household heads but are not the respondent of the survey are pinned down.

Table 4-9 displays the sample size for the two-stage sample selection. Data loss due to not being able to obtain the information of the household head is less than 3 per cent. After this, the research sample is refined twice. The first is to drop households whose heads are over 60; by doing this, this study focuses on people aged between 16 and 60 years old. Second, households whose household heads' *hukou* are unknown are dropped out of the sample since *hukou* is the key measure of the research. The final research sample for Chapter 7 is 13138.

Table 4-9 Percentage of sample size at different stages of data-cleaning

Data-cleansing	Urban community	Rural community	Total	Percentage
Stage 1				
The original household data set	19,209	8,932	28,141	100
Pin down household heads through dyadic partner-partner and parent-child relationship	18,751	8,720	27,427	97.5
Stage 2				
Drop households, whose household heads aged above 60-year-old or beneath 16-year-old	14,025	6,125	20,150	100
Drop households whose household heads <i>hukou</i> type were unknown	13,138	5,712	18,850	93.6

4.3.3.2 Key variables and the measures

Promotion of financial inclusion has become one of the essential government works in China for rural-urban integration; at the same time, the rural-urban dichotomous division has become less efficient in the investigation of the diversified structure of *hukou* and citizenship due to intra-provincial and inter-provincial migration.

With the development of economic reform and the decentralisation of fiscal expenditure and *hukou* policy, *hukou* has become more hierarchically city-oriented after the decentralisation of central government. However, little is known about how this diversified and stratified *hukou* shapes financial inclusion; neither has been well studied on whether city development modifies how *hukou* divides financial inclusion. Thus, Chapter 7 applies the second wave data of China Household Financial Studies to explore financial inclusion in urban China, that is, access by individuals to the services provided by financial institutions such as banks, insurance, and investment firms at the household level.

Financial inclusion is captured by six aspects: having a bank account; formal saving behaviours; financial investments; commercial insurance; the use of formal credit; and the use of informal credit. each representing a different aspect of financial inclusion: Questions related to these components are listed in **Table 4-10**. Detailed descriptive statistics of variables for Chapter 7 can be found in the *Data and Research Methods* section of that chapter.

Table 4-10 Questions related to the dependent variables from CHFS2013 survey

Variables	Component Measures
Bank account	[D1101] <i>Does the family currently have immature RMB time deposits?</i>
	[D2101] Does the family currently have immature RMB time deposits
Formal savings	[D1105] What is the total balance of the above-mentioned accounts? (Unit: RMB)
	[D2104] What is the total worth of above-mentioned time deposits (Unit: RMB)
Financial investment	
Stocks	[D3101] Does your family have any stock accounts
Bonds	[D4100a] Does your family currently have any bonds (like other Treasury bonds, local government bonds, financial bonds and corporate (corporate) bonds)
Funds	[D5102] Does the family have any funds now
Derivatives	[D6102] Does your family currently own any financial derivatives?
Financial products	[D7102] Has your family had any wealth-management products offered by your bank now?
Other financial products	[D7107] Does your family have other wealth-management products (for example, from security brokers, trusts, and so on)?
Non-RMB denominated Assets	[D8100] Did your family hold any non RMB assets last year for example, foreign currency savings deposits, foreign currency cash on hand, B / H shares and so on)
	[F6001] What commercial insurance do you (the family member) have? (Multiple choice)
Commercial insurance	1. Commercial life insurance
	2. Commercial health insurance
	3. Commercial pension insurance
	4. Commercial property insurance (excluding car insurance)
	5. Other commercial insurance
	6. None
Formal credit	
Agricultural/business loan	[B3001] Does the family currently have any bank loans for the above mentioned agricultural/business activities?
House loan	[C2024] Does the family have any outstanding loans for purchasing, decorating, remodelling, or expanding the house
Car loan	[C7014] Did the family take out a bank loan to buy this vehicle
Education loan	[E1001] Has your family taken out any educational loans
Informal credit	
	[C3001] Aside from bank loans, did the family borrow money from any other sources for the purchase, construction, or renovation of this house
	[C3004] What is the source of the largest non-bank loan for this house?
	1. Parents/parents in law
	2. Children
	3. Brothers and sisters
Housing borrows	4. Other relatives
	5. Friends/colleague
	6. Private financial institutions
	7. Small loan companies
	8. A person or institute which has had a prior partnership
	9. Other (please specify)

(Table 4-11 continuation)

Car borrows	[C7047] In addition to the bank loans, did your family borrow other money to buy this vehicle (unit: RMB)
	[C7048c] What is the source of the largest non-bank loan for this vehicle?
	1. Parents/parents in law
	2. Children
	3. Brothers and sisters
	4. Other relatives
	5. Friends/colleague
	6. Private financial institutions
	7. Small loan companies
Educational borrows	8. A person or institute which has had a prior partnership
	9. Other (please specify)
	[E1020] In addition to bank loans, does your family currently borrow money from other people or organisations for your children's education
	[E1028] What is the source of the biggest non-bank educational loan?
	1. Parents/parents in law
	2. Children
	3. Siblings
	4. Other relatives
	5. Friend(s)/colleague
Borrows for other purposes	6. Private financial institutions
	7. Small loan companies
	8. A person or institute which has partnership with before
	9. Other (please specify)
	[E3001] Has your family taken out any other loans in addition to the previously mentioned housing, automotive, commercial, educational, and credit card financing?
	[E3004] What was the source of the debt? (Multiple choice)
	1. Parent s/parents in law
	2. Children
	3. Brothers and sisters
	4. Other relatives
	5 Friends/colleagues
	6 Bank/credit union
	7. Small loan companies
	8. Private financial institutions

4.4 Statistical Methods: overview

4.4.1 Ordinary Least Square regression (OLS)

Ordinary Least Square (OLS) regression is the most used statistical technique for linear models when investigating the relationship between two or more variables where the dependent variable is continuous. Mathematically, it may be expressed as:

$$Y_i = \beta_0 + X_{1i}\beta_1 + X_{2i}\beta_2 + \cdots + X_{ki}\beta_k + \varepsilon_i \quad (4-1)$$

Where Y is the dependent or outcome variable, X indicates a set of explanatory variables that explain the changes in Y ; the β s refers to the regression parameters, in which β_k can be interpreted as the additive effect on Y caused by the one-unit increase in the corresponding explanatory variable X_k , while holding other explanatory variables constant. Hence, the expected value of the dependent variable for the i^{th} individual is $Y_i = \beta_0 + X_{1i}\beta_1 + X_{2i}\beta_2 + \cdots + X_{ki}\beta_k + \varepsilon_i$, and the individual deviations from the expected values—that is, the residuals—are represented in equation 4-1 by the values of ε_i .

The residuals are assumed to follow a normal distribution with mean 0 and variance σ^2 , and uncorrelated with any of the explanatory variables in the model. OLS, as the classical linear regression, enables a systematic examination of the key measures this thesis is interested in.

4.4.2 Instrumental variables estimation (IVE)

In Chapter 5, instrumental variables estimation (IVE) can be used in order to produce consistent estimation as it can be suspected that there may be selection effects relating to the decision to send a child to boarding school.

In the classical normal regression, the residuals are assumed to be uncorrelated with any of the regressors, which could be violated in many situations. Examples include models containing variables which are measured with errors, models of treatment effects, models involving variables that are unobserved and/or omitted, and so on. In these cases, the consistency or unbiasedness of the least square estimator is no longer guaranteed. Greene (2014, Chapter 8) argues that the disturbances can be concluded into four aspects: the omitted variables (the observed or unobserved), feedback effects, dynamic effects, and endogenous sample design. He proposes two general solutions to construct a consistent estimator, one of which is instrumental variables estimation. In this scenario, the method of instrumental variables can be used to estimate causal relation the explanatory variables are correlated with the error terms.

However, there are two requirements for using IVE. First, the instrumental variables must be correlated with the endogenous independent variable and not with the dependent variable, conditional

on other explanatory variables. Second, the instrumental variables are not correlated with the error terms, conditional on other covariates. The OLS modelling equation can be developed into the following:

$$Y_i = \beta_0 + X_1\beta_{1i} + X_2\beta_{2i} + \cdots + X_k\beta_{ki} + \varepsilon_i, \quad (4-2)$$

$$\text{Whereas } X_i = \pi_0 + \pi_1 Z_{1i} + \pi_2 Z_{2i} + \cdots + \pi_j Z_{ji} + \gamma_j. \quad (4-3)$$

Suppose variables X_k may be correlated with ε_i , and meanwhile, there is another set of variables Z_m is correlated with X_i only, not with ε_i . Although the estimation of β_k would be biased if using OLS, the uncorrelation between Z_m and ε_i would allow researchers to construct a consistent estimator of β_k .

4.4.3 Propensity score matching (PSM)

Propensity score matching (PSM) is another technique used to deal with the potential selection effects of boarding school attendance. Results of PSM will be compared with that from models with instrumental variables.

PSM was first introduced by Rosenbaum and Rubin (1983). It relies on comparisons between two groups of people: the “treated” group, who have undergone an intervention, and a “non-treated” group, who have not. In an ideal experiment, the observations in the treated and non-treated groups would be randomly assigned and would in aggregate be identical except for their allocation to the treated and non-treated groups. Any difference between the two groups could be explained solely by the treatment. This idea of attaining random allocation of the treatment is impossible outside an experimental context. Children are not randomly assigned to boarding schools, and it would be extremely expensive and very likely unethical to do such an experiment. PSM creates unbiased estimates via a quasi-experimental situation – that is, by simulating an experiment in which individuals in the treated group are matched with individuals in the non-treated group with similar observable characteristics.

Abadie and Imbens (2006) outline four steps to doing PSM estimation. (1) estimate the propensity score—the probability of an individual being in the treated group – by an allocation of pre-treatment indicators, with the equation of estimating the propensity score written as $\Pr(D_i = 1|X_i) = \Phi\{h(X_i)\}$. Φ denotes the normal (logistic) cumulative distribution function (CDF), and $h(X_i)$ is a cluster of pre-treatment specifications, which includes all the covariates as linear terms without interactions or higher orders; (2) construct the two comparison groups, the treated and the non-treated, according to the matching algorithm; (3) examine the covariate balance between the treated and untreated group; (4) estimate the treatment effects by comparing the means of the two groups.

4.4.4 Multilevel modelling (MLM)

Chapter 7 applies multilevel modelling to estimate the influence of the *hukou* hierarchy together with economic development (measured at the levels of the province and the city) on household financial inclusion.

Multilevel modelling, also known as hierarchical regression, involves two or more levels/stages of relationships among the variables of research interests (Heck & Thomas, 2020). Ordinary regression modelling, which involves only one level of the hierarchy, represents a special case. In fact, multilevel modelling does not require stronger assumptions than ordinary modelling and instead it use more relaxed assumptions. Here in the case of Chapter 7, there are three levels: the household, which is embedded in the clusters of cities, which in turn are embedded in a higher cluster data structure—provinces. Thus, multilevel modelling can accommodate this hierarchical characteristic of the inquiry of household financial inclusion.

Following typical notation for multilevel modelling, level-1 coefficients are defined as the Greek letter π , level-2 coefficients as β , and level-3 coefficients as γ , with i denoting the household, j the city, and p , the province, the mathematical equations of three-level modelling are written as:

$$Y_{ijp} = \pi_{0jp} + \sum_1^m \pi_{mj p} A_{mijp} + \varepsilon_{ijp}, \quad (4-4)$$

$$\pi_{mj p} = \beta_{m0p} + \sum_1^n \beta_{mnp} X_{njp} + u_{mj p}, \quad (4-5)$$

$$\beta_{mnp} = \gamma_{mn0} + \sum_1^s \gamma_{mns} W_{sp} + V_{mnp}, \quad (4-6)$$

Y denotes household financial inclusion observations; A refers to a number of m variables measured at the household level; X refers to a number of n variables measured at the city level and W refers to a number of s variables measured at the province level. $\pi_{mj p}$ are the estimated coefficients combined of three levels. β_{mnp} are the coefficients of city-level variables, and γ_{mns} are the coefficients of province-level variables. ε_{ijp} denotes the random effect, representing the deviation of a household ijp 's score from the predicted mean. $u_{mj p}$ is the random effects at the city level, and V_{mnp} the random effects at the province level.

Chapter 5 Parental Migration and School Boarding Experience: An investigation of children's mental health, academic performance, and academic self-efficacy in China

5.1 Introduction of boarding school system

5.1.1 Boarding schools and *school merging programme*

The history and development of boarding schools in China differs from European and other developed countries. Rather than being designed to serve the offspring of the social elite, boarding schools were initially funded and built by the Chinese government to educate and accommodate children from the most disadvantaged areas and ethnic minorities. The expansion of boarding schools began during the 1990s, when the number of school-age children had significantly dropped due to the decline of fertility (Lavelly & Freedman, 1990), and many rural schools had become undersubscribed.

In many rural primary schools, the curriculum became restricted to just Chinese and Mathematics, with limited funds meaning that teachers could not be hired to teach the sciences, English, art, music, and other subjects. Over time these underfunded subjects gradually became non-essential and less likely to be taught to rural students. In these schools, poor funding resulted in overworked teaching staff, who often taught multiple grades and subjects, and in extreme cases one teacher would be responsible for teaching and managing the entire school (Zhuo, 2006). This was a stark contrast to town schools, which receive significantly more funding from their local governments.

In the early 2000s, the China Ministry of Education (CMOE) initiated a programme of adjustment in the provision of rural compulsory schools (Mei et al., 2015), and local governments in rural areas started the “Rural School Closure and Merging Programme” (the Merging Programme thereafter) with the aim of merging primary and middle schools in small villages into larger ‘central’ schools in towns or large villages (CMOE, 2005). The purpose of the Merging Programme was to improve central township schools by aggregating educational investments and facilities in rural areas, by creating scale benefits (Shan & Wang, 2015).

As local schools were incorporated into the well-funded town schools as part of the Merger Programme, teachers could focus on students in a single grade and on a single course, under a richer curriculum compared to remote rural schools. This aimed to significantly improve the efficiency of the primary school system, and the satisfaction and wellbeing of both teachers and students. With scattered educational funds aggregated into a larger one, facilities could be built and equipped to higher quality standards, and better teachers could be hired with higher payment offers (Z. Sun & Zheng, 2021).

However, issues began to emerge from *the Merging Programme*, with the most critical being extreme commuting distance. According to the Ministry of Education of the People's Republic of China (2007), by 2005, more than 125,000 primary schools in rural China had been closed, occupying about 25 per cent of the 490,000 schools in 2001. More than 80 per cent of the schools closed were rural ones. As most of the new centralised schools were in towns, many students from rural regions had to travel a long way to attend school, although according to the policy, schools merging had to satisfy one of the conditions that the commuting time for students on foot should be within 40 minutes⁷. However, most of these rural students had to commute for more than an hour because their schools could not provide school buses due to limited budgets or no proper roads for buses in the village regions. In many cases, rural students had to spend four or five hours commuting between township schools and their homes every day. Safety was undoubtedly a concern for their parents, especially due to the hazardous environmental conditions⁸.

To deal with students' lengthy daily commutes and the potential security risks involved, the Chinese government introduced new policies in 2003⁹, 2004¹⁰, and 2006¹¹. Based on these social policies, the Chinese central government had officially provided local governments with more funds and made solving the problem of long commutes an essential governmental task. Between 2004 and 2007, the Chinese Central Treasury poured 10 billion RMB (about 5.9 billion US Dollars¹²) into the project of the rural boarding school building, which in turn accelerated the process of *the Merging Programme*. By 2007, more than 30 million primary and junior high school students in rural areas were boarding students (Ministry of Education of People's Republic of China, 2009), which corresponded to approximately 21 per cent of China's total school population. Among the 30 million rural boarding children, the boarding rate for primary students was about eight per cent, while for junior high school students, the rate was about 45 per cent. By 2010, about 230,000 primary schools in rural China had been closed, and 29,000 out of the 39,000 junior high schools were closed; the rate of closure was 52

⁷ According to the policy introduced by General Office of the State Council of the People's Republic of China in 2001, named "Decisions on the reforms and development of compulsory education" (关于基础教育改革与发展的决定), after merging, the catchment radius of new schools should be within the distance of 40 mins on foot. http://www.gov.cn/gongbao/content/2001/content_60920.htm

⁸ No proper roads or bridges are built in most mountainous rural areas of China due to challenging environment and limited budgets of local rural government. Source: <https://news.163.com/photo/view/00AN0001/2288172.html>

⁹ In 2003, the General Office of the State Council of the People's Republic of China introduced a new policy named "Decisions on how to strengthen rural education" (关于进一步加强农村教育工作的决定). http://www.gov.cn/gongbao/content/2003/content_62440.htm

¹⁰ In 2004, Ministry of Education together with Ministry of Finance introduced new policy, "Suggestions on further support on 'the two bases' in rural areas" (关于进一步加强农村地区 '两基' 巩固提高工作的意见). http://www.moe.gov.cn/s78/A06/jcys_left/moe_706/s3321/201001/t20100128_81822.html

¹¹ In 2006, Ministry of Education of the People's Republic of China introduced policy to promote boarding services across the country based on the successful polite project in west China. The document is called "Notice on solve the long school travel in rural areas" (关于切实解决农村上学远有关事项的通知) http://www.gov.cn/gzdt/2006-06/12/content_307899.html

¹² The Purchasing Power Parity was around 4.7 times the actual exchange rate of US dollars in around 2002. Source: <https://www.rieti.go.jp/en/china/03032001.html>

per cent and 27 per cent, respectively (Ministry of Education of People's Republic of China, 2002; 2012).

Amidst news reports on school bus accidents, prohibitive commuting time, poor school management, and worsening mental health, cognitive behaviours, and academic performance in children, the Chinese public had become hostile to the rapid implementation of *the Merging Programme*. In 2012, *the Merging Programme* was halted, but boarding schools and boarding services were kept functioning, to be improved and developed under the supervision of the Chinese Central Government (General Office of the State Council of the People's Republic of China, 2012).

5.1.2 Boarding schools and parental migration

Given the ever-increasing number of children attending boarding schools, especially in rural areas, the issues of mental health, well-being, and academic performance in relation to boarding school choice have been an active topic of research in China.

Boarding schools could provide children with fine substitute for parental monitoring (Crouter & Head, 2002) and attachment figures. From the perspective of parents who are rural-to-urban migrants, sending their children to boarding schools could be an appealing choice, for a number of reasons. Hellmann (2015) reported that since the 1980s, up to 200,000 children have been abducted yearly in China; abductors are more likely to target children of migrant workers because these children are usually unsupervised or neglected by their surrogate caregivers. Also due to negligence, accidents happened to the rural left-behind children. For instance, Miller (2015) reported that some left-behind children took their own lives by drinking pesticides or hanging themselves at home due to loneliness; other left-behind children accidentally lost lives because of drowning (W. Xu & Wang, 2015).

In addition, left behind children are more likely to live with grandparents, whose knowledge of parenting, and whose ability to provide life and study supervision, may be outdated (Wang et al., 2016; Zhang et al., 2015). Rural-to-urban migrant workers worry about the safety of their children but also feel powerless. Therefore, for these parents, if their left-behind children can attend boarding schools, with headteachers and other school staff looking after them, would be a great relief. Compared with elderly grandparents, headteachers and other school staff at boarding schools are more likely to have updated knowledge in caring for and supervising their school-age children. Boarding schools appear to be lifesavers.

From the perspective of the left-behind children, their feeling of neglect may improve in boarding schools where they are surrounded by peers facing similar identity as being left-behind (Zhu, 2021). Similar observations were made by Reynolds (2007) in her research on Caribbean young people in Britain, in which she describes how friendships and bonding are more likely to be established among the youth who share the same ethnic background and values. In boarding schools, these rural left-behind

children could obtain more peer and teacher support, which has been found to benefit them socially, emotionally, and academically (Roeser et al., 2000). Another appealing consequence of sending children to boarding schools is more free time to study and recreation. Based on the China Health and Nutrition Survey, Chen (2013) found that left-behind children spent more time doing household chores. This is consistent with Sudworth's findings on rural left-behind children's time allocation; most left-behind children are obliged to take on extra workloads besides their studies (Sudworth, 2016).

Thus, for rural children, attending boarding schools could potentially be an escape from household duties and/or farm work. Although living on a school campus means that these young rural children can no longer receive supervision, guidance, and support from their parents and might mentally suffer from the loss of their attachment figures (Ainsworth, 1979), boarding schools could potentially provide children with a pseudo home for children to study and live; this might be especially for left-behind children.

5.1.3 Fractured families: boarding schools and parental migration

Given that the focus of this chapter is boarding schools, how does this fit into a thesis on internal migration in China? I would argue that it does so for three reasons. First, the large number of rural Chinese children who attend boarding school in itself constitutes an internal migration of huge proportions, which has been brought about by government policy. Second, the decision to send children to boarding school may be linked to the decisions of rural parents to migrate for work. That migrant workers send their children to boarding schools has been discussed in many media and policy reports (e.g.: CGTN, 2021; International Labour Organisation, 2015), although the analysis in this chapter finds only a rather weak relationship between parental migration and the decision to send children to boarding school. Third, there may be interactions in the associations between children of parental migration and boarding: children who experience both have experienced family fracture in more than one dimension. These interactions are explored in this chapter.

5.2 Literature review

5.2.1 Boarding school and child outcomes in developed countries

In many countries, it is a rarity for a child to attend boarding school. However, boarding school is a relatively common choice in the United Kingdom, North America, Australia, and a number of former British colonies. The reasons that children are sent to boarding school vary between countries. Across Anglophone countries, there is a tradition of boarding schools serving the children of privileged elites, although children may also attend boarding schools for other reasons, for example because they have

special educational needs, or because their parents are geographically mobile (e.g. those in the armed forces). In the 18th and 19th centuries, boarding schools formed a major part of the “cultural assimilation” programmes for indigenous populations in the USA, Canada and Australia (Jacobs, 2006); most boarding schools for indigenous children have now been closed, although some remain open (Reyhner, 2018)

It is perhaps the Australian context which most closely mirrors the Chinese experience. The large land mass and concentration of populations centres in Australia mean that many rural families rely on boarding provision because no local schools are available. For rural Australians, the decision on whether to send their children to boarding schools is complex. There is a high level of anxiety among parents regarding their children’s safety, daily routine and social-life capability, and therefore, their wellbeing in boarding schools (Baker & Andrews, 1991; Mander, 2015; A. McCarthy, 2007; M. McCarthy, 2016).

Many investigations of children’s experience in boarding schools have uncovered negative experiences (Duffell, 2000; Partridge, 2007, 2012; Schaverien, 2011; Standish, 2011). Schaverien (2011) coined two concepts to describe the influence of boarding school on the mental health of boarding children. The first is ‘boarding school syndrome’, characterised by a general sense of depression and distress due to the loss of familial bonds and broken attachment, leading to broken relationships, and marital or work-related problems in the future. The second is ‘multigenerational trauma’, which documents the persisting effects of boarding experience beyond the attendees. Schaverien (2011) points out that abusive and traumatic experience in boarding schools can be passed on to children and grandchildren. These negative multigenerational and multigenerational effects of boarding experience are consistent with other studies (Barton et al., 2005; Pember, 2007; Hirshberg, 2008; Elias et al., 2012).

Pfeiffer and Pinquart’s (2014) cross-sectional study in Germany found that boarding students were more likely to be bullied than their non-boarding peers. Bullying also had more substantial negative impacts on life satisfaction for boarders. Two years later, Pfeiffer et al. (2016) compared the social relationships, prosocial behaviours, and perceived social support between boarders and non-boarders. Having sampled 701 high school students, the authors found that students from boarding schools showed higher success in gaining autonomy from parents and forming romantic relationships than day school students. In contrast, students from day schools were found to have integrated into school life better than students from boarding schools. No significant difference was found in terms of prosocial behaviour between these two groups. Boarders reported more support from teachers, whereas non-boarders reported more support from parents.

Downs (2001) and Bramston and Patrick (2007) report that boarding students experience a significant increase in life satisfaction, sense of meaning, and purpose of life when growing up. However, Martin et al. (2014) found that students who attend boarding school in their first year scored

lower in social adaptation and emotional stability. However, over the course of the first academic year, there were few significant gains or declines in students' engagement, motivation, and psychological wellbeing. Mander and Lester (2017) also reported that over time, there were no significant differences found in the level of depressive symptoms between boarding students and non-boarding students when they moved from grade seven to grade nine. These findings indicate the potential dynamic pattern of the association between children's individual development and boarding experience over time.

5.2.2 Boarding school boarding and child outcomes in China

The existing literature on the influence of boarding experience on children can be grouped into studies dealing with academic performance, physical health/nutritional status, well-being/mental health, and behavioural and interpersonal aspects. Findings of the impact of boarding school experience on these aspects are mixed.

An assessment of the Merging Programme by the Chinese Government revealed several concerns. The assessment was conducted by the National Audit Office of the People's Republic of China (2013), and was based on 25,127 schools (18,217 primary schools and 6910 junior high schools), in 1185 counties of 27 provinces. It describes four central issues:

1. School travel became more time-consuming and tedious for students given that about 70 per cent of these schools' catchment radius increased to about 8.34 km on average while less than 10 per cent of these schools provide school buses. This is in line with other related studies (Zhao & Barakat, 2015).
2. Boarding services cannot accommodate all students in need; in 2013, more than 5.5 million students applied for boarding places and about 4.6 million were accommodated. Although accommodated, many students suffered as the boarding conditions in more than half of the schools were reported to be poor, over-crowded and without privacy, sanitation facilities, accommodation officers, or healthcare staff.
3. Family educational expenditure increased from just tuition fees, to also include boarding services and further transportation costs.
4. After being merged, most township schools became oversubscribed, classrooms cramped, and teachers overloaded. From the number of closed schools, it seemed the Chinese Central Government had managed, along with the local governments, to achieve its target for school closures in rural areas, but qualitatively, neither optimizing the distribution of educational resources nor improving the quality of living and learning life had been achieved.

Meanwhile, a large body of existing studies have consistently pointed out that boarding imposes negative effects on children's academic performance (Mo et al., 2012; Wang et al., 2016; Long et al., 2020) and wellbeing or mental health (Wang et al., 2016; Chen et al., 2020) Social-emotional

competence of children living on campus reported fewer beneficial social-emotional competence skills than their peers who commute between school and campus (Wang et al., 2017). Boarding school students exhibit a higher level of violent and aggressive behaviours (Pang & Han, 2005) and behavioural problems (Zhu et al., 2008), including drinking and smoking. Lastly, due to low quality food provided in boarding schools (R. Luo et al., 2009), insufficient entertainment and sports activities (Z. Li, 2013), along with inadequate accommodation facilities (X. Li, 2013; Yue et al., 2014), the physical health of boarding children is generally worse as well.

Some latest studies, however, suggest that boarding has little effects on physical health or mental health. For instance, Chen and et al (2020) use instrumental variables estimation and suggest boarding has little impact on physical health. Based on propensity score matching and difference-in-difference methods, Tang et al. (2020) report no significant effect from boarding is found on mental health, although a tendency of increased loneliness is spotted.

The reasons explaining mixed research findings on the impacts of boarding experience on children are three-fold. First, most of the existing literature has focused on one aspect of child outcomes boarding—that is either on academic performance, physical health, or mental health. Only few (Wang et al., 2016; Liu & Villa, 2020) have systematically investigated different but correlated aspects of child outcomes. A large number of studies left-behind children are found to be worse off on multiple dimensions (Li et al., 2015; Ren & Treiman, 2016; Meng & Yamauchi, 2017; Wang et al., 2017; Chen et al., 2020).

Second, the existing literature has not investigated the effects of family and school processing together, which is greater than a person's demographic characteristics granted by family (Bronfenbrenner, 1988). A majority of the studies have either focused on how boarding school experience affect child outcomes or how parental migration makes a difference on child outcomes, however, parental migration plays a critical role of why and how boarding school experience make a difference on child outcomes. Only a few studies have taken parental migration into the study of boarding school and child outcomes; however, a binary measure of parental migration is not a fine capture of attachment loss (Adam & Chase-Lansdale, 2002). Regarding research findings, Tang et al. (2020) and Liu & Villa (2020) report that neither the mental nor the physical conditions of boarding students are not worse off when parental migration status is included. By contrast, Wang and et al. (2017) find that left-behind children living on campus score lower on the social-emotional than the left-behind but commuting children. This inconsistency of research can be explained by the last reason.

The last explanation could be the inconsistency of research methods. Some studies use Propensity Score Matching, others use instrumental variables estimation. Some studies are based on national datasets (Liu & Villa, 2020), whereas the others are based on regional datasets (Wang et al., 2017; Tang et al., 2020). Few (Liu & Villa, 2020) have applied longitudinal analyses, whose research

samples, however, suffer from a sizable data loss between waves and the inconsistency of key measures like parental migration. Findings based on different modelling and different datasets can yield different statistical findings.

Given the large amount of research on the effects of parental migration on child outcomes, and a number of recent chapters on the effects of boarding school, what does the current chapter add to the state of knowledge? This chapter makes a new contribution in two ways. First, I study multiple outcomes: children's mental health, wellbeing, academic performance, and academic self-efficacy. Academic self-efficacy (or more briefly, simply "self-efficacy") is a constellation of behaviours likely to bring about academic success. This outcome has not yet been studied in the literature. In addition, I use a measure of parental migration which distinguishes one-parent from two-parent migration, so as to distinguish between different levels of attachment loss (Ainsworth, 1979; Adam & Chase-Lansdale, 2002). Third, motivated by bioecological theory (Bronfenbrenner, 1988) and intersectionality approach (Cho et al., 2013; Strompolis et al., 2019), I study the multi-layered and intersecting interplay of boarding school and parental migration.

5.2.3 Research questions

Based on the discussion above, this chapter investigates a group of Chinese children whose life choices and experience are dramatically influenced by two types of social changes:

1. The still ongoing large-scale internal migration which began in the 1990s due to industrialisation and urbanisation.
2. The 'Rural Primary School Merging Programme' launched by China's Ministry of Education (CMOE) in rural regions between 2001 and 2012.

This chapter focuses on four aspects of development outcomes of children— mental health, wellbeing, academic performance, and self-efficacy, and I pose the following research questions:

1. How does attending boarding school influence children's outcomes?
2. Does the influence of boarding school differ between children whose parents have, and have not, migrated for work?
3. Is the decision over whether a child should attend boarding school subject to selection effects which should be accounted for in analytical models?
4. If so, what are the effects of boarding school and parental migration on child outcomes, controlling for selection effects?

5.3 Data and Methods

5.3.1 Data

This chapter applies data from the China Family Panel Studies (CFPS), a longitudinal study conducted by Beijing University in the year of 2010 and technically supported by Princeton University. This dataset was described in detail in Chapter 4; in this section I will discuss the sample and the measures used for the analysis in the current Chapter.

The CFPS includes information at three levels: the community, the household, and the individual. At the individual level, the questionnaire is divided into two: a *Children Questionnaire* and an *Adult Questionnaire*. CFPS 2010 sampled 8990 children aged between 0 and 15. Since in this research I am interested in children's mental health, wellbeing, academic performance, and self-efficacy, and mental health and self-efficacy were only collected for children aged between 10 and 15 years old. Hence, I first reduced the sample to include only this age group ($N = 3351$). After dropping 394 observations because of missing values on the key research variables at both household and community levels, I further restricted the research sample to 3054 observations, with the rate of data loss at 9.03 per cent.

5.3.2 Measures

5.3.2.1 *Dependent, independent, and moderator variables*

This study investigates how boarding experience affects children's outcome on four indicators: mental health, wellbeing, academic performance, and self-efficacy. The questions from CFPS 2010 used to measure the four dependent variables can be found in section 4.3.1. Details about the loadings of items measuring the four child outcomes are displayed in Table 5-1, which I explain in the rest of this section.

Mental health. This is measured as a composite index based on six items as displayed in Table 5-1. It shows that the Cronbach's alpha of the six items is 0.796, nearly 0.80, indicating a high level of internal consistency of measuring mental health. The item-test correlation tells that each item is relatively closely correlated with the overall scale. The last column displays the alpha values, indicating how much the reliability of the scale would change if the item on the row is deleted. As shown, the alpha value decreases when deleting any of the items, i.e., lower than 0.796. Therefore, the six items are used to form the scale—a composite index—to measure children's mental health. This composite index is then standardised and used as a continuous variable in the following analyses.

In a similar way, measures of mental health, wellbeing, academic performance, and self-efficacy are also based on composite indices based on several items, with a relatively high internal

consistency. The alpha values are 0.708, 0.775, and 0.808, respectively. These three composite indices are also standardised and measured as scale variables in the regressions. It is worth mentioning that interviews were not conducted in boarding schools; instead, they were conducted during weekends when children came back from school. This could potentially cause bias because people's subjective evaluation of wellbeing would vary across spaces (J. De Vos et al., 2013; Schwiedrzik et al., 2011).

Also, it's worth mentioning that in this study, children's self-efficacy is measured by integrating children's self-rated items as well as those designed for caregivers. The notion of self-efficacy was originally proposed by (Bandura et al., 1999), who defined it as "beliefs in one's capabilities to organise and execute to produce given attainments". He also provides a guide to measure children's self-efficacy (Bandura, 2006), which covers nine aspects, including self-efficacy in enlisting social resources, efficacy for academic achievement, self-regulated learning and social networking. The scale used here is constructed from questions available in the CFPS questionnaire and focuses on behaviours rather than self-belief. Responses by children (six questions) and by their caregivers (seven questions) are included in this scale. Details of these component items can be found in Chapter 4. The value of Cronbach's alpha based on the 13 items is 0.81. The aggregated composite index has a mean of 3.48 (SD=0.50), with higher scores indicating higher academic self-efficacy.

Boarding. The key independent variable is the boarding status of children, which is coded as a binary variable, with 1 referring to children who were in boarding schools when they were interviewed in 2010, and 0 otherwise.

Parental migration. It is measured as a three-categorical variable, neither parent has migrated (reference category), father/mother alone has migrated, and both mother and father have migrated. According to the literature, gender of the parent migrated and parental marital status matter for child outcomes (Graham & Jordan, 2011; S. Su et al., 2013), which, however, are not included in the research. Because the focus of research is parental migration type, for both-parent migration, it is not possible to distinguish gender. As for parents' marital status, since more than 95 per cent of children's parents self-claimed being legally wed in this research sample; thus, parents' marital status is not included.

Table 5-1 Cronbach alpha and loadings of the items measuring the four child outcomes

Item	N	Sign	Item-test correlation	Item-rest correlation	Average interitem covariance	alpha
Mental health						
Depressed	3,178	+	0.7440	0.5788	0.3106	0.7579
Nervous	3,186	+	0.7592	0.5925	0.3001	0.7544
Upset	3,185	+	0.7413	0.6003	0.3219	0.7521
Hopeless	3,182	+	0.6470	0.5153	0.3720	0.7739
Difficult	3,185	+	0.7038	0.5366	0.3310	0.7678
Meaningless	3,185	+	0.6353	0.5052	0.3780	0.7764
<i>Test scale</i>					0.3356	0.7956
Wellbeing						
Popular	3,188	+	0.7279	0.4898	0.2781	0.6459
Happy	3,189	+	0.7413	0.5059	0.2693	0.6377
Confident	3,185	+	0.7155	0.4696	0.2883	0.6604
Get on well	3,184	+	0.7379	0.5091	0.2723	0.6359
<i>Test scale</i>					0.2770	0.7079
Academic Performance						
<i>Test scale</i>					0.2014	0.7755
Dyadic efficacy						
<i>From caregiver</i>						
Study hard	3,179	+	0.6561	0.5498	0.1833	0.7845
Check homework	3,058	+	0.6529	0.5414	0.1825	0.7855
Finish homework	3,155	+	0.5870	0.4784	0.1926	0.7915
Concentrate	3,160	+	0.6121	0.5047	0.1895	0.789
Obey rules	3,157	+	0.3883	0.3057	0.2154	0.8044
Once start, will complete	3,128	+	0.5347	0.4190	0.1976	0.7967
Self-management	3,182	+	0.5664	0.4423	0.1921	0.7948
<i>From children</i>						
Study hard	3,183	+	0.5630	0.4569	0.1962	0.7933
Concentrate	3,189	+	0.5366	0.4367	0.2004	0.7953
Check homework	3,181	+	0.5848	0.4679	0.1911	0.7923
Obey rules	3,189	+	0.3758	0.2804	0.2150	0.8059
Self-management	3,185	+	0.4790	0.3661	0.2039	0.8006
Finish homework	3,184	+	0.5408	0.4297	0.1976	0.7956
<i>Test scale</i>					0.1967	0.8076

Note. CFPS did not provide the exact information on the results of 24 mathematical questions and 34 Chinese language questions. Instead, it has aggregated the answers of these two set of questions into two variables, the mathematical test scores and the Chinese language test scores. Thus, academic performance in this chapter, as a composite index, is based two components. If the composite index is based on less than three items, loadings of the items are not provided; hence only the test scale of academic performance is displayed in the table.

5.3.2.3 Instrumental variables

One means of accounting for selection bias is the instrumental variables technique; this requires instruments which are correlated with the endogenous variable (the boarding decision) but not to the outcome variable.

The two instruments in this study are the distance to the nearest town (*distance to town*) and whether schools provide boarding services (*providing boarding services*). Both these instruments are

correlated with children's boarding decision, but hypothetically not correlated with the four child outcomes. Because whether a school provides boarding services (dictated by the Merger Programme), and the distance from a child's home to the nearest town are both out of family control.

Distance to town is measured as a scale variable, with km as the unit; *providing boarding services* is measured as a binary variable, with 1 referring to boarding services provided by the school, and 0 otherwise.

5.3.2.4 Covariates

Covariates included in this study are children's demographics, household socio-economic status, and community characteristics.

Children's demographic variables include gender, ethnicity, *hukou* type, birth order, and the number of siblings. Ethnicity is measured as a binary variable: Han and non-Han (the reference category). The current *hukou* type is measured as a binary variable: urban citizens and rural citizens (the reference category). It's possible that some children, who are urban *hukou* holders, become boarders, too, because of parental migration, as urban-to-urban migration is also on the rise (Duan et al., 2008; X. Ma et al., 2014; Cheng & Duan, 2021). That's why children who are urban *hukou* holders are included in this study. Sibling is coded as a binary variable, with 0 referring to no siblings and 1 for having at least one sibling. Birth order is measured as a scale variable, ranging from 1 to 4. Gender of siblings is not included. As whether having siblings, birth order, and gender of the interviewed children can capture distribution of household resources to children, which affected child outcomes.

Household-level indicators are parental education, household structure, and the number of children at home. *Parental education* is measured as a three-categorical variable: lower than middle school (reference category), lower than college and above college. Firstly, both father's and mother's education are also measured, and then the higher one selected as the value of the measure of *parental education*.

Hospital born and *kindergarten attendance* (at the age of three) were the two variables that measure household SES when children were young, in an attempt to capture the influence of household SES on child mental health (B. Yan, 2017). *Hospital born* is a binary variable, with children born in the hospital taking the value 1 and children born at home being the reference category; *kindergarten attendance* was also a binary variable with non-attendance as the reference category. *Household income* is measured as the sum of the salary of the household head, the taxable income of the spouse and other household members, and other non-salary income to the family, and is then equivalised to take account of household composition by dividing by the square root of family size according to OECD's standard (2008). I then take the logarithm of equivalised income as the measure used in the analysis.

Multigenerational cohabitation is measured as binary, with having at least one grandparent cohabiting in the household coded as 1 and otherwise 0.

The scale of the community and the accessibility of facilities in the community is highly associated with the self-motivation, engagement, and psychological well-being of children (Antonishak & Reppucci, 2017; Coulton et al., 1995; Goldfeld et al., 2019; Letourneau et al., 2013). Therefore, this study includes community-level characteristics: population (in logarithmic form); the distance from the community to the closest town; and the interviewer's perception of whether the community is rural (the reference category) or urban (including outskirts, town, and city). Also, educational resources and investments in a community are highly related to regional economic development; thus, the region as a macro-level variable is also included in the analysis. In line with the region division based on socioeconomic development in the CFPS survey, this study uses the west region (the least developed) as the reference, and the remaining three categories are the middle, northeast, and southeast (the most developed).

5.3.3 Analytical methods

The objective of this research is to examine the relationship between boarding school experience, parental migration status, and child outcomes. I employ three approaches in order to obtain accurate and robust estimates. First, ordinary least squares (OLS) regression is used with a rich set of characteristics at the child, family, and community-level as controls. Second, instrumental variables estimation is used to detect the causal link between boarding school experience and child outcomes. Finally, propensity score matching is applied to compare outcomes between boarding and non-boarding children and outcomes within the children subsample of rural *hukou*, from rural communities, and having migrant parents, so as to check the robustness of estimates.

The OLS regression model is applied to conduct an initial investigation on whether boarding is significantly associated with child outcomes and whether parental migration status ties into these effects. These analyses are found in subsection 5.4.2. This is followed by logistic regression models, (section 5.4.3) which explore the indicators which influence children's school boarding decisions. These logistic regressions can help identify potential sources of selection originating from children, household, and community-level characteristics, but cannot directly deal with the potential self-selection effects. However, they form the basis for the creation of propensity scores.

The decision of whether a child is sent to boarding school is not random, and is likely to be determined by factors which are also correlated with the outcome variables; the logistic regressions in Section 5.4.3 confirm this. To overcome potential bias from this non-random allocation, two techniques are used in an attempt to obtain consistent estimates of the boarding experience on mental health and other child outcomes. The first is the instrumental variables technique, where the endogenous variable (boarding

school attendance) is instrumented with variables which are correlated with the endogenous variable but not with the outcome variable; IV regressions are discussed in subsection 5.4.4.

The second technique used to account for non-random allocation to boarding school is propensity score matching (PSM), as proposed by Rosenbaum and Rubin (1983). Results are presented in section 5.4.5. Propensity scores are produced from the logistic regressions in subsection 5.4.3. $Pr(D_i = 1|X_i) = \Phi\{h(X_i)\}$ is the equation, with Φ denoting the normal (logistic) c.d.f. and $h(X_i)$ the cluster of pre-treatment specifications. Calliper matching is chosen to estimate average treatment effects and it is used in all of the comparison units within a predefined propensity score radius. To produce smaller estimation bias, in this study, a calliper is used, calculated as one-fourth of the standard error of the propensity score as suggested by Abadie and Imbens (2002). This allows the use of extra units when good matches are available and fewer units when good matches are not available, given that the numbers of children attending boarding school are smaller than the numbers not attending boarding school. Both the standard errors of the treatment effect and regression treatment effect are computed using a bootstrap technique with 100 replications. Finally, a robustness check based on *hukou* type, community type, and parental migration is produced in subsection 5.4.6.

5.4 Empirical Research Findings

5.4.1 Descriptive analysis

Table 5-2 displays descriptive statistics for all the variables used in the research, firstly for the whole research sample and then by boarding status. The final column presents the differences in the means between the boarding and non-boarding samples, together with an indicator of statistical significance of these differences.

Two of the outcome variables differ significantly between the boarding and non-boarding populations: mental health is significantly poorer among boarders, while academic attainment is higher. A majority of children in this sample do not have migrant parents, the portion of children having at least one parent out-migrated approximates to 16 per cent. Averagely, the distance between the children's house to the nearest town is about 22 km, and about 40 per cent of the schools these children attended provide boarding services. The sampled boys and girls are half and half. More than 85 per cent of the children are of Han ethnicity; about 80 per cent of the sampled children are registered as *rural*, in line with the percentage of children having a rural *hukou* in the original children's data in CFPS2010 (sample size=8990). The average age of the research sample is 12.51, about 51 per cent have siblings and the average birth order is 1.54.

Table 5-2 Descriptive statistics across boarding status

Variables	Overall N=3,192		Boarders N=744		Nonboarders N=2,448		Between- group Difference
	%/mean	(SD)	%/mean	(SD)	%/mean	(SD)	
Outcome variables							
Mental Health (standardised)	0.01	(1.000)	-0.124	(1.080)	0.044	(0.970)	-0.17***
Wellbeing (standardised)	0.00	(1.000)	-0.016	(0.951)	0.009	(1.013)	-0.03
Academic Performance (standardised)	0.01	(1.000)	0.432	(0.842)	-0.118	(1.000)	0.55***
Efficacy (standardised)	0.00	(1.000)	0.074	(0.958)	-0.025	(1.005)	0.10*
Independent variable							
Boarding status (<i>ref.no</i>) %	23.3		-		-		-
Moderator (%)							
No migration	84.4		82.8		84.8		-2.0
One parent (<i>ref. no migration</i>)	11.6		12.2		11.4		0.8
Both parents	4.0		5.0		3.8		1.2
Instrumental variables							
Distance to town (km)	22.0	(22.646)	27.1	(21.670)	20.4	(22.709)	6.710***
Providing Boarding Services (%)	40.5		100		22.4		77.7***
Covariates							
Male (%)	50.5		48.8		51.1		-2.4
Han Ethnicity (<i>ref. minorities</i>) (%)	89.1		89.9		88.8		1.1
Rural <i>hukou</i> (%)	79.7		93.7		75.4		18.2***
Age	12.5	(1.719)	13.4	(1.530)	12.2	(1.681)	1.170***
Have siblings (<i>ref. no siblings</i>) (%)	51.4		57.5		49.6		7.9***
Birth order	1.5	(0.782)	1.7	(0.802)	1.5	(0.773)	0.144***
Hospital born (%)	52.1		42.6		55.0		-12.3***
Kindergarten attendance (%)	60.7		51.7		63.5		-11.7***
Parental education (<i>ref. Less than Primary</i>) (%)	62.0		57.0		63.5		-6.5**
Household income (standardised)	0.00	(1.000)	-0.07	(0.951)	0.03	(1.008)	-0.095***
Intergenerational cohabitation (%)	21.1		21.0		21.2		0.20
Urban Community (<i>ref. rural</i>) (%)	26.3		9.5		31.5		-21.91***
Economic development (%)							
West (<i>reference</i>)	34.3		34.8		35.7		-0.90
Middle	22.7		33.4		19.2		15.21***
Northeast	10.1		4.6		11.8		-7.24***
Southeast	32.9		27.2		33.3		-6.14**

Note. Standard errors in parentheses; ! $p < 0.1$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

About half of the children are born in a hospital, which is much higher than the proportion about several decades ago when giving birth at home was the dominating choice (B. Yan, 2017). 60 per cent of the children have attended kindergarten, which is also higher than the proportion in previous decades (B. Yan, 2017). These two indicators suggest that the socioeconomic status of Chinese families is improving. About 62 per cent of their parents have graduated from middle school and above. About 21 per cent of children have at least one grandparent cohabiting in the family. Last, as for community

characteristics, less than 30 per cent of the sampled children are living in urban communities; around 34 per cent of the are from regions in the west—the least developed region, followed by 22.7 per cent in the middle region, 10 per cent in the northeast part, and around 32 per cent from the southeast—the most economically developed region in China.

The between-group difference tests show that there are some significant differences between the boarders and non-boarders. The tests on the four child outcomes suggest that boarding experience has different effects on child development. Regarding children's demographics, no gender or ethnicity difference is found between boarding and non-boarding students, but the differences on *hukou*, age, whether having siblings, and the birth order are significant. The statistics on these demographic indicators show that boarders are rural *hukou* holders, a bit senior, having siblings but younger than other siblings.

As for the difference on household socioeconomic status, it can be found the proportions of boarders on four indicators (*hospital born*, *kindergarten attendance*, *parental education*, and *household income*) are significantly less than non-boarders, indicating that boarders are more likely to come from less socioeconomically advantaged. Also, a significant more boarders are from rural communities, which are far from the town, with smaller populations, and located in the west and middle of China.

5.4.2 Results of OLS regressions

Table 5-3 shows the OLS regression results on mental health, wellbeing, academic performance, and self-efficacy. Regressions are built up, with the first model including no controls, to a 5th model with controls on three levels (individual, household, and community) and a 6th model containing an interaction term between boarding status and parental migration status. Full regression results including all coefficients for each dependent variable can be found in Table 5-A1, Table 5-A2, Table 5-A3, and Table 5-A4, respectively in the Appendix.

As illustrated in Table 5-3, boarding experience is significantly associated with poorer mental health, better academic performance, but has no significant association with wellbeing or self-efficacy. Although with more controls included the coefficient size from boarding on mental health slightly decreases from 0.168 to 0.147, the association is still significant at 1% level. On average, children in boarding schools score 0.15 standard deviations (SD hereafter) lower on the mental health scale. Similarly, the impact from boarding on academic performance has dropped from 0.549 to 0.247 from Model Academic 1 to Model Academic 6, the significance maintains.

On average, boarding children score substantially and significantly higher on academic performance than non-boarders, and substantially and significantly more poorly on the indicator of mental health. Boarding has no significant relationship with children's wellbeing, and the relationship

with self-efficacy disappears when children's demographics are included. Parental migration displays different associations with different child outcomes but what remains consistent is that two-parent migration has larger impact size than one-parent migration. Compared to children with no migrant parents, only children with both-parental migration scored lower on mental health at a marginal significant level (Coeff. = -0.195, $P < 0.1$) in Model Mental 2, which has entirely disappeared when indicators at children, household, and community level are included. Likewise, the negativity of boarding experience on wellbeing (Coeff. = -0.299, $P < 0.01$ in Model Wellbeing (2) and academic performance (Coeff. = -0.298, $P < 0.001$ in Model Academic (2) gradually disappears when child demographics, household socioeconomic indicators, and community covariates are included. However, the impact remains significant on self-efficacy (Coeff. = 0.298, $P < 0.01$ in Model Efficacy (2) with a slight decrease when covariates are included (Coeff. = 0.220, $P < 0.05$ in Model Efficacy (6).

Table 5-4 displays and compares the results of the full models (based on Mental 6, Wellbeing 6, Academic 6, and self-efficacy 6 respectively). The interaction items reveal the modifying associations of parental migration on boarding experience. As shown in the table, only two interactive items are significant, boarding with one-parent migration on academic performance (Coeff. = 0.191, $P < 0.05$), and boarding with both-parents migration on self-efficacy (Coeff. = 0.288, $P < 0.05$).

Although other interaction items are not significant, the trends are clear that children with migrant parents are better off in relation to their mental health and wellbeing when they attend boarding schools. Based on the OLS regression results, it can be concluded that boarding experience is negative on child mental health but positive on academic performance. Parental migration has no significant impact on the four child outcomes except on self-efficacy and this positive impact on self-efficacy is significantly augmented by boarding experience. Besides, boarding children with only one-parent migration have better academic performance.

Regarding the covariates, having a rural *hukou* was associated with better mental health (Coeff. = 0.131, $P < 0.05$) but significantly worse academic performance (Coeff. = -0.185, $P < 0.001$), and no association with wellbeing (Coeff. = -0.033, $P > 0.05$) or self-efficacy (Coeff. = -0.075, $P > 0.05$). Boys score significantly lower than girls respecting their wellbeing (Coeff. = -0.155, $P < 0.001$), academic performance (Coeff. = -0.127, $P < 0.001$), and self-efficacy (Coeff. = -0.423, $P < 0.001$) and but no difference regarding mental health (Coeff. = -0.029, $P > 0.05$).

Table 5-3 Nested OLS Regression Results of children's outcomes (N=3192)

Mental health	Mental (1)	Mental (2)	Mental (3)	Mental (4)	Mental (5)	Mental (6)
Boarding (<i>ref. no</i>)	-0.168*** (0.044)	-0.165*** (0.044)	-0.121* (0.047)	-0.119* (0.047)	-0.136*** (0.047)	-0.147** (0.051)
Parental migration (<i>ref.no migration</i>)						
One-parent		-0.062 (0.059)	-0.063 (0.059)	-0.051 (0.059)	-0.034 (0.059)	-0.036 (0.066)
Two-parents		-0.195! (0.102)	-0.201! (0.104)	-0.179! (0.104)	-0.158! (0.105)	-0.223 (0.128)
Interaction	×	×	×	×	×	√
Child demographics	×	×	√	√	√	√
Household indicators	×	×	×	√	√	√
Community factors	×	×	×	×	√	√
Wellbeing	Wellbeing (1)	Wellbeing (2)	Wellbeing (3)	Wellbeing (4)	Wellbeing (5)	Wellbeing (6)
Boarding (<i>ref. no</i>)	-0.025 (0.040)	-0.021 (0.040)	0.035 (0.043)	0.036 (0.043)	0.026 (0.044)	0.027 (0.047)
Parental migration (<i>ref.no migration</i>)						
One-parent		-0.019 (0.055)	0.020 (0.055)	0.027 (0.055)	0.030 (0.055)	0.041 (0.062)
Two-parents		-0.277** (0.091)	-0.200* (0.091)	-0.174! (0.090)	-0.157! (0.089)	-0.189! (0.105)
Interaction	×	×	×	×	×	√
Child demographics	×	×	√	√	√	√
Household indicators	×	×	×	√	√	√
Community factors	×	×	×	×	√	√
Academic Performance	Academic (1)	Academic (2)	Academic (3)	Academic (4)	Academic (5)	Academic (6)
Boarding (<i>ref. no</i>)	0.549*** (0.037)	0.553*** (0.037)	0.269*** (0.032)	0.271*** (0.031)	0.272*** (0.031)	0.247*** (0.034)
Parental migration (<i>ref.no migration</i>)						
One-parent		-0.133* (0.052)	-0.059 (0.042)	-0.042 (0.041)	-0.032 (0.041)	-0.079 (0.049)
Two-parents		-0.298*** -0.133* (0.074)	-0.089! -0.059 (0.074)	-0.063 -0.042 (0.074)	-0.044 -0.032 (0.074)	-0.052 (0.074)
Interaction	×	×	×	×	×	√
Child demographics	×	×	√	√	√	√
Household indicators	×	×	×	√	√	√
Community factors	×	×	×	×	√	√
Self-efficacy	Efficacy (1)	Efficacy (2)	Efficacy (3)	Efficacy (4)	Efficacy (5)	Efficacy (6)
Boarding (<i>ref. no</i>)	0.099* (0.041)	0.094* (0.040)	0.036 (0.042)	0.036 (0.042)	0.036 (0.043)	0.019 (0.048)
Parental migration (<i>ref.no migration</i>)						
One-parent		0.142** (0.050)	0.103* (0.049)	0.100* (0.049)	0.112* (0.049)	0.105 (0.057)
Two-parents		0.298*** (0.084)	0.279*** (0.082)	0.276*** (0.082)	0.302*** (0.082)	0.220* (0.101)
Interaction	×	×	×	×	×	√
Child demographics	×	×	√	√	√	√
Household indicators	×	×	×	√	√	√
Community factors	×	×	×	×	√	√

Note. Standard errors in parentheses; ! $p < 0.1$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 5-4 OLS Regressions on children's outcomes (N=3192)

	Mental Health (6)		Wellbeing (6)		Academic Performance (6)		Efficacy (6)	
	β	(SE)	β	(SE)	β	(SE)	β	(SE)
Boarding (ref. no)	-0.147**	(-0.051)	0.027	(-0.047)	0.247***	(-0.034)	0.019	(-0.048)
Parental migration (ref. no migration)								
One-parent migration	-0.036	(-0.066)	0.041	(-0.062)	-0.079	(-0.049)	0.105	(-0.057)
Two-parents migration	-0.223	(-0.128)	-0.189	(-0.105)	-0.052	(-0.074)	0.220*	(-0.101)
Boarding # Parental migration								
Boarding# One parent	0.004	(-0.142)	-0.046	(-0.132)	0.191*	(-0.08)	0.025	(-0.106)
Boarding# Both parents	0.23	(-0.217)	0.112	(-0.196)	0.031	(-0.14)	0.288*	(-0.166)
Rural hukou	0.131*	(-0.064)	-0.033	(-0.065)	-0.185***	(-0.041)	0.075	(-0.065)
Male	-0.027	(-0.035)	-0.156***	(-0.035)	-0.129***	(-0.026)	-0.420***	(-0.035)
Han ethnicity (ref. minorities)	-0.013	(-0.061)	0.193**	(-0.059)	0.273***	(-0.048)	0.085	(-0.06)
Age	-0.355*	(-0.177)	-0.395*	(-0.176)	0.789***	(-0.127)	-0.027	(-0.172)
Age squared	0.013	(-0.007)	0.015*	(-0.007)	-0.018***	(-0.005)	0.002	(-0.007)
Sibling (ref. no)	0.078	(-0.053)	-0.073	(-0.05)	-0.04	(-0.037)	-0.07	(-0.05)
Birth order	-0.073*	(-0.035)	-0.039	(-0.03)	-0.054*	(-0.023)	0.046	(-0.03)
Parental education (ref. primary or less)	-0.047	(-0.04)	0.123**	(-0.039)	0.201***	(-0.029)	-0.026	(-0.039)
Household income	0.063**	(-0.022)	0.053**	(-0.02)	0.042**	(-0.014)	-0.039*	(-0.017)
Hospital born (ref. no)	0.058	(-0.041)	0.104*	(-0.041)	0.241***	(-0.029)	-0.007	(-0.04)
Kindergarten attendance (ref.no)	0.026	(-0.043)	0.147***	(-0.042)	0.109***	(-0.031)	0.044	(-0.042)
Cohabitation of grandparents (ref.no)	0.004	(-0.045)	-0.046	(-0.042)	-0.090**	(-0.033)	-0.029	(-0.043)
Population (log)	-0.017	(-0.021)	-0.065**	(-0.021)	-0.036*	(-0.015)	-0.065**	(-0.021)
Distance to town (km)	-0.002	(-0.001)	0.00	(-0.001)	-0.001	(-0.001)	-0.003**	(-0.001)
Urban Community (ref. rural)	-0.036	(-0.057)	0.087	(-0.06)	0.093*	(-0.041)	-0.063	(-0.06)
Region (ref. West)								
Middle	0.181***	(-0.054)	0.019	(-0.054)	0.049	(-0.037)	-0.03	(-0.053)
Northeast	0.241***	(-0.066)	0.132*	(-0.066)	0.153***	(-0.045)	0.178**	(-0.066)
Southeast	0.136**	(-0.049)	-0.178***	(-0.05)	-0.042	(-0.036)	-0.031	(-0.049)
Constant	2.391*	(-1.086)	2.315*	(-1.086)	-7.287***	(-0.784)	0.115	(-1.07)
R^2	0.032		0.061		0.498		0.071	

Note. Standard errors in parentheses; ! $p < 0.1$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

The relationships between age and three of the outcome variables are significantly nonlinear. mental health, decreases with age until 14 years of age ($-b/2a = -(-0.355)/(2*0.013)$), and for wellbeing, the turning point is at about 13-year-old ($-b/2a = -(-0.395)/(2*0.015)$). One plausible explanation could be that boarding students gradually adjust themselves and become used to the new living environment and

then their poorer mental health status would bounce back. Academic performance increases with age until it reaches the predicted turning point in this research sample, which is at around age 21 ($-b/2a = -0.789 / (2 \times -0.018)$) – thus over the age range considered, academic performance increases with age. Birth order is negatively associated with mental health and academic performance but not with wellbeing or self-efficacy, consistent with the birth order theory (Easey et al., 2019).

As for household socioeconomic characteristics, measured as *hospital born*, *kindergarten attendance*, *parental education*, and *household income*, it can be found that income is significantly associated with all the child outcomes. The other three are significant with wellbeing and academic performance, but not with mental health or self-efficacy. Cohabiting with grandparents is only correlated with academic performance, negatively.

Community characteristics significantly contribute to the difference in child outcomes. Population size is negatively and significantly correlated with the three indicators of children's development but not mental health. Distance to the nearest town is negatively correlated with the four child outcomes but only significant from the self-efficacy perspective. Living in urban communities is significantly positively related to academic performance but not to other outcomes. There are significant differences between regions on all child outcomes.

5.4.3 Results of logistic regressions predicting boarding decision

In this section, I use logistic regression analysis to explore the determinants of a child attending boarding school. Nested logistic regression results are displayed in Table 5-5.

As shown in Table 5-5, rather than parental migration status, it is the *hukou* type and community-level indicators that are significantly correlated with boarding decisions. Most of the child demographics and family SES characteristics are not significantly associated with boarding, although some indicate positive associations and others suggest negative correlations.

First, the odds of rural children to board are about five times higher than urban children in Model Boarding (2), although this decreases to around two when community-level covariates are included. However, *hukou* status remains to be the most important indicator regarding boarding decisions, which is in line with the significance of community type ($OR=0.525$, $P<0.001$) on boarding.

Family SES indicators do not show any significant associations. Parental educational attainment, family income, sibship, birth order, grandparent cohabitation status, and household income did not impose any significant impacts on boarding decisions, either.

For the indicators at community level, population size, distance to the nearest town, and region all displayed significant influence on children attending boarding schools. The plausible explanation can be that the number of school-age children tends to be larger if a community has a larger population density; hence, the school in the community is less likely that is going to be merged into schools in

town. The distance between the village and the centre of the nearest town/city has displayed statistically positive significance (OR=1.523, $p < 0.001$). This shows that children whose home is far from the town are more likely to attend a boarding school, which is the motivation of schools providing boarding services, and children from rural/outskirts regions are more likely to become boarders.

Table 5-5 Logistic regression of attending a boarding school (N=3192)

	Boarding (1)		Boarding (2)		Boarding (3)	
	OR	(SE)	OR	(SE)	OR	(SE)
Parental migration (<i>ref.no migration</i>)						
One-parent migration	1.126	(0.144)	0.870	(0.123)	0.784 [!]	(0.116)
Two-parents migration	1.334	(0.266)	1.047	(0.239)	1.056	(0.247)
Rural hukou			4.592***	(0.834)	2.066***	(0.454)
Male			0.990	(0.095)	0.968	(0.096)
Han ethnicity (<i>ref. minorities</i>)			1.158	(0.175)	0.770	(0.128)
Age			1.301	(0.652)	1.350	(0.703)
Age squared			1.007	(0.020)	1.007	(0.021)
Sibling (<i>ref. no</i>)			1.245	(0.168)	1.232	(0.169)
Birth order			1.017	(0.081)	0.960	(0.077)
Household born (<i>ref. no</i>)			0.927	(0.099)	0.935	(0.104)
Kindergarten attendance (<i>ref.no</i>)			0.989	(0.104)	1.143	(0.131)
Parental education (<i>ref. primary or less</i>)			1.018	(0.104)	1.090	(0.114)
Family income			0.996	(0.050)	1.026	(0.057)
Cohabit with grandparent (<i>ref.no</i>)			0.862	(0.102)	0.872	(0.108)
Population					0.742***	(0.044)
Distance to town					1.523***	(0.177)
Urban Community (<i>ref. rural</i>)					0.525***	(0.100)
Region (<i>ref. west</i>)						
Middle					3.329***	(0.485)
Northeast					0.647 [!]	(0.149)
Southeast					1.380*	(0.201)
Constant	0.295***	(0.014)	0.001*	(0.002)	0.001*	(0.002)
N		3,192		3,192		3,192
Pseudo R ²		0.000		0.123		0.174

Note. Reported coefficients are odds ratio. Standard errors in parentheses; ! $p < 0.1$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Although children from the less developed west region are likely to become boarders compared with the rest three regions, within the other three parts, it is clear that a more complex pattern which is different from our expectation that from the west to the middle and from the middle to the east, the odds ratio of attending boarding school would consistently decrease. Children in the middle region are more likely to attend boarding school (OR=3.329, $p < 0.001$) when compared with the west, followed by children in the most developed regions (OR=1.380, $p < 0.05$). Children in the northeast cluster are less likely to become boarders (OR=0.647, $p < 0.01$).

5.4.4 Results of instrumented regressions

In this subsection, I analyse the results from instrumented regressions. The two instruments are the distance to the nearest town (*distance to town*) and whether schools provide boarding services (*providing boarding services*)– these are chosen as being correlated with the “problem” variable (the

child goes to boarding school) but uncorrelated with the outcomes. The first-stage regressions on each of the four child outcomes can be found in Table 5-A5 in the Appendix.

Results are shown in Table 5-6, which differ in some respects from the OLS regressions. Boarding is marginally associated with mental health (Coef. = -0.156, $P < 0.1$), whereas its nonsignificant impact on self-efficacy in the OLS model turns out to be marginally and negatively significant (Coef. = -0.145, $P < 0.1$). The positive and significant impact of boarding on academic performance remains in the instrumented model (Coef. = 0.439, $P < 0.001$).

Table 5-6 Instrumented regression results of child outcomes (N=3192)

	Mental health (6')		Wellbeing (6')		Academic performance (6')		Efficacy (6')	
	β	(SE)	β	(SE)	β	(SE)	β	(SE)
Boarding (<i>ref. no</i>)	-0.156[!]	(0.084)	0.129	(0.083)	0.439***	(0.060)	-0.145[!]	(0.082)
Parental migration (<i>ref. no migration</i>)		(0.066)	0.064	(0.065)	-0.036	(0.047)	0.062	(0.064)
One-parent migration	-0.041	(0.066)	0.064	(0.065)	-0.036	(0.047)	0.062	(0.064)
Two-parent migration	-0.235*	(0.107)	-0.166	(0.106)	-0.013	(0.077)	0.165	(0.105)
Boarding # Parental migration								
Boarding#One-parent	0.001	(0.141)	-0.138	(0.139)	0.015	(0.101)	0.152	(0.138)
Boarding#Two-parent	0.244[!]	(0.207)	0.020[!]	(0.204)	0.139[!]	(0.149)	0.449*	(0.203)
Rural hukou	0.126*	(0.063)	-0.041	(0.062)	-0.202***	(0.046)	0.078	(0.062)
Male	-0.029	(0.036)	-0.155***	(0.035)	-0.127***	(0.026)	-0.423***	(0.035)
Han ethnicity (<i>ref. minorities</i>)	-0.005	(0.061)	0.197***	(0.060)	0.285***	(0.044)	0.094	(0.059)
Age	-0.363*	(0.176)	-0.384*	(0.174)	0.806***	(0.127)	-0.058	(0.173)
Age squared	0.013 [!]	(0.007)	0.015*	(0.007)	-0.019***	(0.005)	0.004	(0.007)
Sibling (<i>ref. no</i>)	0.076	(0.051)	-0.075	(0.050)	-0.045	(0.037)	-0.072	(0.050)
Birth order	-0.071*	(0.031)	-0.038	(0.031)	-0.051*	(0.023)	0.048	(0.031)
Parental education (<i>ref. primary or less</i>)	-0.042	(0.040)	0.123**	(0.039)	0.202***	(0.028)	-0.014	(0.039)
Household income	0.064***	(0.018)	0.054**	(0.018)	0.043**	(0.013)	-0.039*	(0.018)
Hospital born (<i>ref. no</i>)	0.064	(0.041)	0.107**	(0.040)	0.250***	(0.029)	-0.000	(0.040)
Kindergarten attendance (<i>ref. no</i>)	0.031	(0.043)	0.146***	(0.042)	0.111***	(0.031)	0.055	(0.042)
Population (log)	0.005	(0.044)	-0.044	(0.043)	-0.087**	(0.031)	-0.028	(0.043)
Urban Community (<i>ref. rural</i>)	-0.013	(0.021)	-0.061**	(0.021)	-0.026 [!]	(0.015)	-0.064**	(0.021)
Region (<i>ref. west</i>)								
Middle	0.200***	(0.053)	0.007	(0.052)	0.034	(0.038)	0.023	(0.052)
Northeast	0.243***	(0.069)	0.136*	(0.067)	0.161**	(0.049)	0.176**	(0.067)
Southeast	0.144**	(0.049)	-0.179***	(0.048)	-0.040	(0.035)	-0.014	(0.048)
Constant	2.370*	(1.088)	2.255*	(1.072)	-7.411***	(0.782)	0.163	(1.065)
R^2	0.032		0.059		0.474		0.062	

Note. Standard errors in parentheses; ! $p < 0.1$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

The association between parental migration and child outcomes are also slightly different. Compared with children with no parental migration, children with two-parent migration have less favourable mental health (Coef. = -0.235, $P < 0.05$), but children with one-parent migration have no difference with

children with no parent migration. Besides, parental migration as the moderator imposes marginally significant impacts on mental health (boarding # both-parent migration, Coef. = 0.244, $P < 0.1$), wellbeing (boarding # both-parent migration, Coef. = 0.020, $P < 0.1$), academic performance (boarding # both-parent migration, Coef. = 0.139, $P < 0.1$), and significant impacts on self-efficacy (boarding # both-parent migration, Coef. = 0.449, $P < 0.05$). The plausible explanation for the marginally “protective” effects of boarding at campus for children could be those children are no longer burden by house chores and they found more company in the campus than being left behind at home.

The instrumental variables used were chosen on the basis that they were demonstrably associated with the decision to attend boarding school. It is also necessary that instruments may not be correlated with the outcome variables. As Bound and et al (1993) mentioned that there are problems in the use of weak instruments (that is, instruments which have low explanatory power over the problem variable). The authors pointed out that the lack of precision introduced by the use of a weak instrument may be worse than the bias introduced by an endogenous regressor.

Table 5-7 shows the results of endogeneity tests for the instrumental variables used. These tests suggest that boarding services and distance are decent instruments in the regressions for mental health and wellbeing, but not for the regressions on academic performance and self-efficacy. That is, the instrumented regression may not be reliable on explaining how boarding has affected academic performance and academic efficacy. Therefore, in the next subsection, I applied Propensity Score Matching to investigate the association between boarding and the four outcome variables of children.

Table 5-7 Tests of endogeneity of instrumented regressions

H0: Variables are exogenous	Mental health (6')	Wellbeing (6')	Academic performance (6')	Academic Efficacy (6')
Durbin (score) chi2(1)	0.005459 (p = 0.9411)	2.37091 (p = 0.1236)	15.967 (p = 0.0001)	5.70615 (p = 0.0169)
Wu-Hausman F (1,3168)	0.005418 (p = 0.9413)	2.35483 (p = 0.1250)	15.9266 (p = 0.0001)	5.67339 (p = 0.0173)

5.4.5 Propensity Score Matching

Since the instrumental variables used in the previous section are not ideal, to make more reliable inference, propensity score matching is a good option. Based on Model Boarding (3) in Table 5-5, the propensity score for the boarding decision is created and used for matching. Results of PSM on each indicator of child outcome are illustrated in Table 5-8.

The table displays estimates of the average treatment effect on the treated (ATT) – that is, estimates of how the “treatment” (going to boarding school) changed the outcomes of those who went to boarding school, compared with an alternative scenario in which those same children did not go to boarding school.

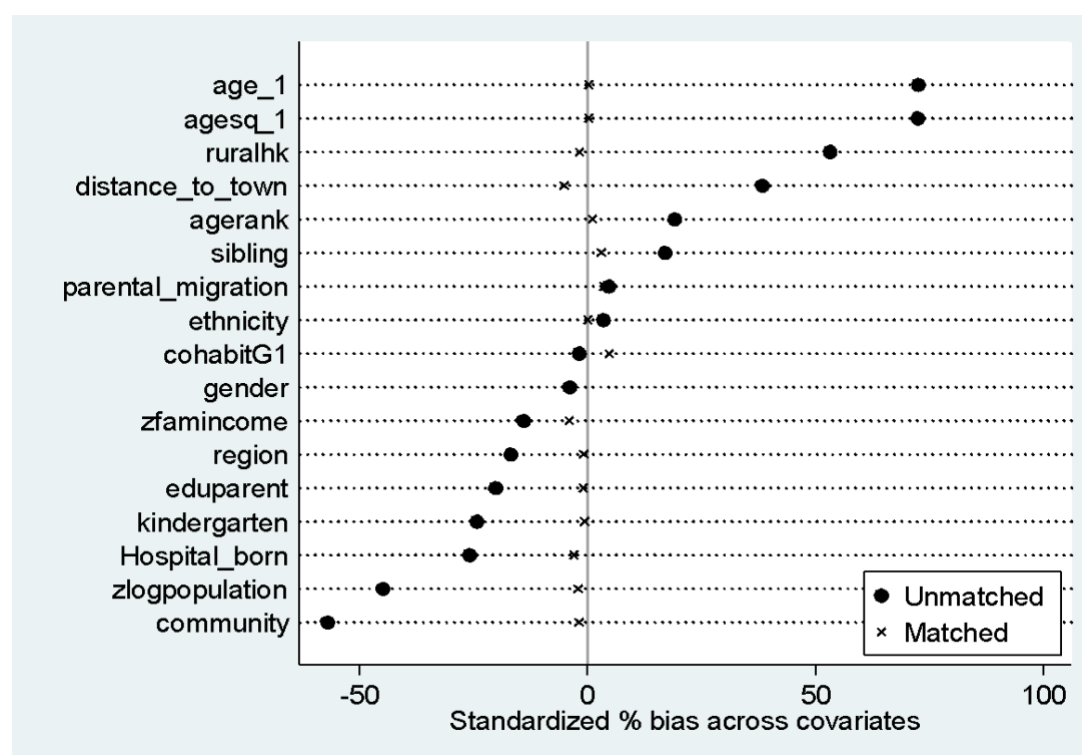
Table 5-8 Propensity Score Matching Results (Bootstraps Replications =100)

	ATT (Coef.)	Bootstrap Std. Err.	Z	P>Z	95% Confidence Interval
Mental health	-0.171	0.055	-3.09	0.002	[-0.2799529 -0.0628082]
Wellbeing	-0.040	0.058	-0.70	0.486	[-0.1536467 0.0730863]
Academic performance	0.225	0.049	4.57	0.000	[0.1286583 0.3216690]
Efficacy	0.033	0.053	0.62	0.537	[-0.0711252 0.1366494]

Note. N=3192, Treated =704 Untreated=2448; On support=3189, off support=3

The ATT of boarding on mental health is around -0.17 and significant at the 5% level. This means children who attend boarding school are found to score about 0.17 SD lower than their non-boarding peers. Boarding school experience can impose statistically significant adverse effects on a child's mental health with potential endogenous variables controlled. By contrast, boarding school is significantly correlated with better academic performance, as shown by the ATT coefficient, which is 0.290 and significant at 1% level and beyond. However, boarding school attendance is neither significantly or significantly associated with wellbeing (ATT = -0.04, P = 0.486) or self-efficacy (ATT = 0.033, P = 0.537).

Postestimation tests suggests that in the process of estimating PSM regressions, bias arising from differences between the boarding and non-boarding children has been largely eliminated. As illustrated in Figure 5-1, before matching, differences in observable variables between the treated and untreated groups (black dots) are large, and often far from the zero axis; after matching, differences on all indicators between the two groups (the crosses) are systematically close to the zero axis.

**Figure 5-1** Post-estimation checks—bias across covariates

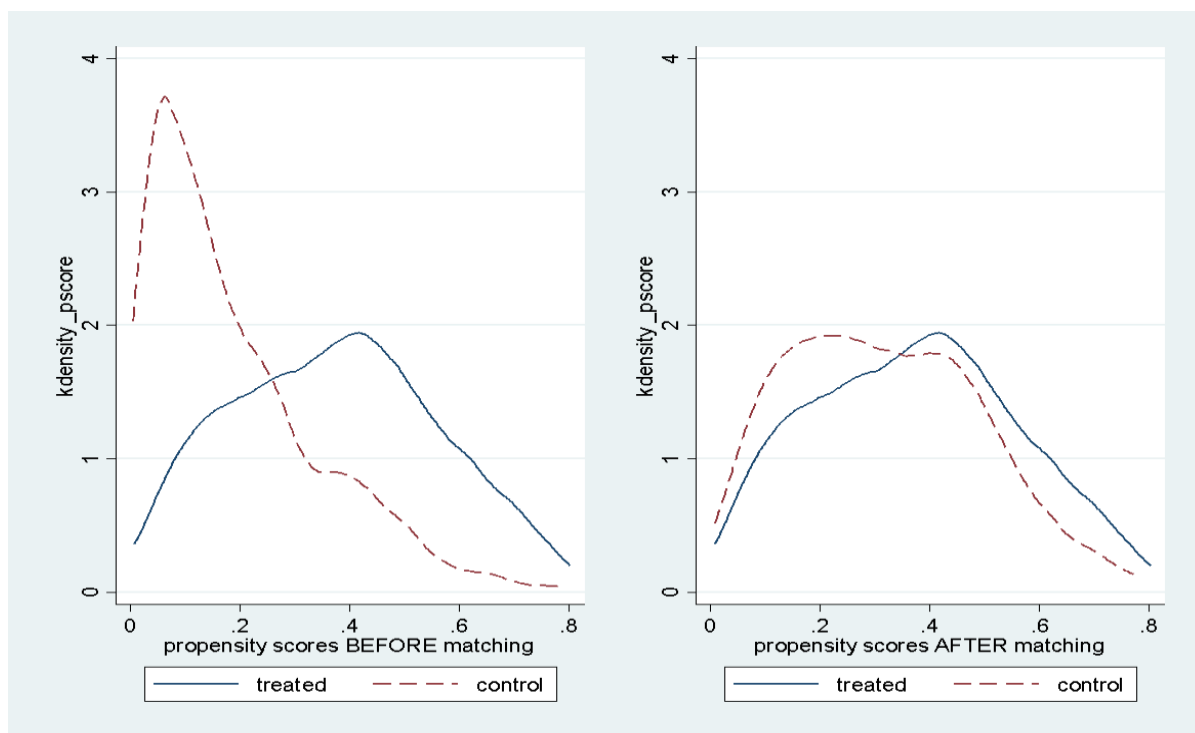


Figure 5-2 Before and after matching

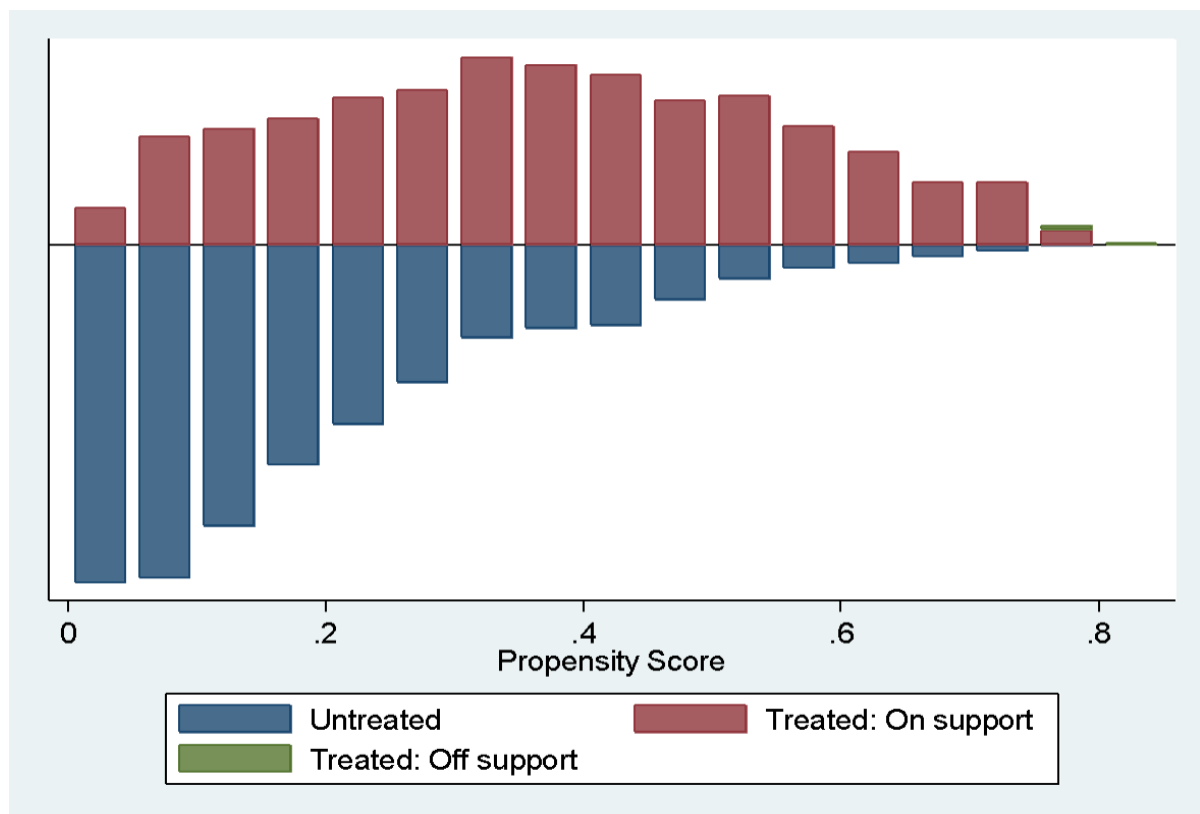
Figure 5-2 shows density distributions of estimated propensity scores (that is, the estimated probabilities that a child would be in boarding school). The left-hand panel shows the distribution of scores before the matching exercise – unsurprisingly, the “untreated” (non-boarding-school) group showed a much lower propensity to attend boarding school than the “treated” (boarding school) group. The right-hand panel shows the distribution of scores following the matching exercise. The “untreated” group now consists of individuals whose observable characteristics are very close to the characteristics of children in the “treated” group, and as a result the distributions of the propensity scores are now much closer between children who do and do not go to boarding school. These two figures together suggest that propensity score matching is effective in correcting the selection bias of children attending boarding school.

The post-estimation statistical test displayed in Table 5-9 shows that the mean on each variable is not significant after matching, suggesting no statistical difference between the treated (attend boarding schools) and the untreated group (not attend boarding schools). If there is any difference between these two groups in terms of the dependent variable—child mental health, it is most likely due to the treatment—boarding school experience. The post-estimation balance as shown in Figure 5-3, suggests the overlaps between the treated and untreated group according to the propensity scores are large, and the match has a fairly large common support for the two groups.

Table 5-9 Post-Estimation Balance Check

				Mean	T-test			
Variable				Treated	Control	% bias	T value	P> t
Parental migration				1.216	1.199	3.60	0.64	0.52
Gender				0.937	0.943	-1.80	-0.49	0.62
Han_ethnicity				0.491	0.513	-4.30	-0.80	0.43
Rural hukou				0.896	0.896	0.00	0.00	1.00
Age				13.410	13.407	0.20	0.04	0.97
Age square				1.822	1.821	0.20	0.04	0.97
Hospital born				0.415	0.430	-3.10	-0.57	0.57
Attended Kindergarten				0.515	0.518	-0.70	-0.13	0.90
Parental education				0.597	0.602	-0.90	-0.18	0.86
Household income				-0.105	-0.067	-4.00	-0.79	0.43
sibling				0.576	0.562	3.00	0.55	0.58
Birth order				1.662	1.653	1.10	0.19	0.85
Cohabit with grandparent				0.210	0.191	4.70	0.88	0.38
Population of the community				-0.321	-0.302	-2.10	-0.42	0.68
Distance to the nearest town				0.654	0.679	-5.10	-0.98	0.33
Urban Community				0.096	0.103	-1.90	-0.45	0.65
Region				1.224	1.235	-0.90	-0.17	0.86
Sample	Ps R2	LR chi2	p>chi2	Mean Bias	Med Bias	B	R	Var (%)
Unmatched	0.140	447.53	0.000	28.8	20.2	98.7*	0.58	50
Matched	0.003	6.31	0.991	2.2	1.9	13.6	0.97	0

Note. U: Unmatched, M: Matched, if variance ratio outside [0.85; 1.17] for U and [0.85; 1.17] for M

**Figure 5-3** Figure of common support between the treated and untreated

5.4.6 Robustness check

In this section, I report on robustness checks which perform the PSM procedure on a number of subsamples: (a) children with a rural *hukou*; (b) children living in rural communities; (c) children whose parents have migrated; and (d) children whose parents have not migrated. In each case, ATT estimates were obtained, as before, for the children in the subsample.

The results are shown in Table 5-10. The results are broadly similar in all the subsamples, with boarding found to exert a significant negative association with mental health, and a significant positive association with academic performance. The one exception is that the association with mental health is not significant for children whose parents have migrated. This may be due to the relatively small sample size for this group (the ATT for the children of non-migrant parents is around the same size and statistically significant). However, it may also be due to the possibility that boarding school exerts its negative effects due to the fragmentation of family bonds, and that where parents have migrated, those bonds have already been compromised.

It is also interesting to compare the results on academic performance between the migrant and non-migrant groups. The association between boarding and academic performance for children whose parents have migrated is almost double the size of the association for children whose parents have not migrated. When children attend boarding school, they gain access to school-based resources, but lose access to parental help and mentoring. Children of migrant parents have less to lose in the way of home-based resources, resulting in a much larger net association.

Table 5-10 Results of PSM results on rural children, rural community, and parental migration

		Bootstrap Std.			95% Confidence	
	ATT (Coef.)	Err.	Z	P	Interval	
Children with rural hukou (N=2544)						
Mental health	-0.122	0.057	-2.16	0.031	[-0.2325818	-0.0110729]
Wellbeing	-0.032	0.065	-0.49	0.626	[-0.1587596	0.0955875]
Academic perf.	0.276	0.051	5.42	0.000	[0.1758458	0.3752823]
Efficacy	0.055	0.051	1.08	0.278	[-0.044512	0.1548219]
Children in rural community (N=2531)						
Mental health	-0.183	0.057	-3.240	0.001	[-0.2940880	-0.0723943]
Wellbeing	-0.044	0.061	-0.720	0.472	[-0.1642502	0.0760788]
Academic perf.	0.287	0.053	5.380	0.000	[0.1827393	0.392066]
Efficacy	0.043	0.056	0.760	0.446	[-0.0670392	0.1521893]
children with migrant parent(s) (N=499)						
Mental health	-0.127	0.177	-0.720	0.471	[-0.4735279	0.2188476]
Wellbeing	-0.045	0.126	-0.360	0.721	[-0.2921515	0.2021068]
Academic perf.	0.435	0.142	3.060	0.002	[0.1568065	0.7132664]
Efficacy	0.123	0.140	0.880	0.379	[-0.1516163	0.3985739]
children with non-migrant parent(s) (N=2693)						
Mental health	-0.135	0.068	-1.98	0.047	[-0.2675341	-0.0015761]
Wellbeing	0.036	0.063	0.58	0.560	[-0.0861314	0.1589512]
Academic perf.	0.233	0.500	4.66	0.000	[0.1349314	0.3310803]
Efficacy	0.308	0.071	0.43	0.666	[-0.1088501	0.1703488]

Note. ! $p < 0.1$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Figures of common support suggest that there is large overlap between the treated and untreated groups. PSM estimation by rural *hukou*, rural community, and parental migration can be found in Figure 5-A1, Figure 5-A2, and Figure 5-A3 in the Appendix for Chapter 5.

5.5 Discussion and Conclusions

The systematic quantitative analyses in this chapter suggest that boarding school experience is associated with poorer child mental health but better academic performance. However, boarding school experience appears to have no significant association with wellbeing or self-efficacy of children.

A plausible explanation for negative association between boarding school experience and children's mental health could be explained by a shortage of staff as well as a lack of mental health services—boarding schools cannot provide students with enough or quality monitoring, neither support for mental health. This plausible explanation is supported by the Chinese governmental report on compulsory education and boarding schools in rural areas (National Audit Office of the People's Republic of China, 2013) as well as qualitative studies (Wang et al., 2017; Yue et al., 2014; Luo et al., 2009) of rural boarding schools in middle and west regions of China. Although these qualitative studies cannot represent all the boarding schools in China, their research population are from rural and less developed areas are in line with the oversampling of less developed communities in this research sample.

As to why the academic performance of boarding students significantly surpasses that of their non-boarding peers, it can be explained by three reasons. First, boarding schools provide children with an escape from household chores and/or farming work (Sudworth, 2016). Second, boarding at school can also directly help children save their time and physical energy spent on daily commuting (Ministry of Education of People's Republic of China, 2007). Third, in boarding schools, children can get more help from teachers and/or their peers and more supervision for self-regulation and discipline. Therefore, with more studying time, less distractions, and more academic support, boarding children might be more motivated and focused on studies (Pfeiffer et al., 2016). This can possibly explain why children's academic performance is improved in boarding schools.

Regarding why boarding has an ignorable positive but not significant association with self-efficacy, it can be plausibly explained by the trade-off association between the negative association with mental health and the positive association with academic performance. Although boarding children are more likely to do well academically, they are more likely to suffer from poorer mental health, leading to the down-ward grading on their self-efficacy and wellbeing. This is supported by several psychological studies, which point out that emotionally disturbed individuals are more likely to negatively view their study performance than their peers who are mentally healthy (Connolly, 1989; Grotan et al., 2019).

That family and school process together, which is greater than a person's demographic characteristics granted by family (Bronfenbrenner, 1988) cannot be rejected in this research. The intersectional effects (Cho et al., 2013; Strompolis et al., 2019) of two identities of children—being left behind and being a student in boarding schools due to changes in micro- and mesosystem (family life and school type)—are observed. Parental migration alone is found to have displayed limited and almost insignificant influence on children's developmental outcomes, but for children who have both parents out-migrated, boarding in campus tends to be protective for their mental health, wellbeing, academic performance, and self-efficacy, although the protective effect is only significant on self-efficacy.

The selection effect, which originates from the societal setting—the 'Rural School Merging Programme', exists in children's boarding experience in this research. Parental migration and being left behind did not necessarily indicate a higher likelihood for children to boarding schools as the chapter suggests. Boarding children are more likely to be late teenagers (in middle schools), registered as *rural hukou* holders, currently living in rural communities that are in the least economically developed regions of China. That is to say, in rural China, the main indicators for children's boarding are their *hukou* and community type—registered as rural and living in rural communities. Children's boarding experience in China are socially structured and decided rather than a family plan (Wen & Lin, 2012). As Xiang (2007) has mentioned, that rural communities have been left behind socially and economically is the fundamental cause for the hardships experienced by the rural left-behind population; migration has just exacerbated the hardship.

This research can empirically and theoretically enrich the understanding of the association between boarding school experience and mental health, academic performance, and academic self-efficacy of children from a contextual perspective. This research provides policymakers with evidence to prevent and tackle the mental health issues boarding children could confront and therefore improve these children's self-efficacy.

Children's interest can no longer be ignored (Z. Zhao, 2011); interventions are suggested, such as providing mental health care for the boarding children and training sessions for the school staff, or even these children's parents, to learn how to communicate and support their children. More funds should be invested in rural boarding schools to provide boarding students with more quality facilities, staff, and more available help. For example, increasing the salary for rural teachers can attract more teachers to work in rural boarding schools and reduce the student-teacher ratio to provide students with much timely help and support. New policies targeting all rural students are needed since the absolute levels of outcomes on almost all aspects of child development are lower for students in rural schools than in township schools, regardless of boarding status (A. Wang et al., 2016).

The research design of this chapter has some limitations. First, constrained by CFPS survey design, this study has only studied adolescents' development outcomes, not younger children who are

under 10 years old. This means research in this chapter has not touched on how boarding experiences make an impact on developmental outcomes of younger children. Similarly, constrained by data, this study has not investigated how living, and studying conditions affect children's developmental outcomes because CFPS survey did not cover characteristics of boarding schools (school staff and their work qualifications, food supply, dormitory conditions, and medical and health care services), which are certainly highly associated with child outcomes. Second, the long-term influence of boarding schools on child mental health has not been investigated because of inconsistent measures of child outcomes, especially the measure of mental health. The last limit of this research is the use of weak instruments (distance between children's homes and boarding schools). The lack of precision introduced by the use of a weak instrument may be worse than the bias introduced by an endogenous regressor (Bound et al., 1993). However, results produced by propensity score matching and the robustness check are quite close to that from instrumental estimations, indicating estimations are reliable.

For future research direction, longitudinal studies to investigate the short and long-term influence of boarding experience on child outcomes are suggested. And given children at very young age are attending boarding school their developmental outcomes should also be taken into the consideration of survey research. Prospective future work on boarding duration and its interactions with boarding can help investigate the nonlinearity of the boarding school experience (Mander, 2015; Mander & Lester, 2017) and whether or not the 'boarding school syndrome' (Schaverien, 2011) exists in the Chinese context.

Chapter 6 The effects of adult child migration and migration duration on the emotional health of rural elderly parents

6.1 Research background

By 2019, the total number of rural-to-urban migrant workers in China reached 291 million, occupying about 3 per cent of the total Chinese workforce (National Bureau of Statistics of China [NBSC], 2020). This represents a near twofold increase in under a decade, since the number of migrant works was just 153 million in 2010 (NBSC, 2011).

This large-scale demographic change in China has raised a great number of concerns over the support, health, and wellbeing of rural elderly parents. Key questions that are raised here include: who is providing for the care of the elderly in rural areas, what are the consequences of adult child migration on the physical and mental health of rural elderly parents and so on. While there is plenty of evidence in the literature to link the migration of younger generations to a deterioration in rural elderly parents' mental health and wellbeing, the variable of migration duration rural elderly parents in this relationship remains relatively unexplored. This study explicitly focusses on the temporal dimension of the experience of migration, in order to determine whether rural elderly parents' emotional health worsens or recovers when their adult children's migration becomes an accepted fact over time.

The reasons why rural elderly parents are left behind are two-fold. Firstly, the most widely acknowledged reason is that people registered as rural *hukou* very limited accessibility to social welfare in cities, and this hinders rural adult children from bringing their elderly parents to cities when they migrate (Cai, 2006; Xia & Zhang, 2006) Secondly, some qualitative studies report that most rural elderly parents prefer to stay at home due to attachments to their villages where they have lived, worked, and built social networks, as well as feeling daunted by the prospect of life in cities (Wu, 2002). Regardless of being involuntarily or voluntarily left behind, these rural elderly parents feel a great sense of loss, loneliness, and abandonment when their children migrate. This is especially the case for older generations who grew up in the traditional Chinese culture that highly values filial piety epitomised in one of the most famous Confucius epigrams, "while his parents are alive, the son may not go abroad to a distance".

In China, rural people are disadvantaged in comparison to urban peers on personal income and social support. According to the National Bureau of Statistics of China report (NBSC, 2011), urban citizens earned an annual average of 42359 Chinese RMB currency (100 RMB = 12 USD), which was only 16021RMB for rural citizens. This is less than 40 per cent of urban citizens' salaries and about 50 per cent of the Per-Capita GNP of China (30733 RMB). The disadvantage of having less accumulated

income among rural citizens can be exacerbated when they are old, both because they have less disposable income and because they cannot rely on the social welfare and/or pension systems, which are far less developed in rural areas(Xu, 2001).

For rural people, relying on their grown-up children is ‘second nature’ when they become old. First, social norms and values of traditional old age security are heavily embedded in rural families. For example, the old folk saying, “Bringing up children to provide against old age” (“养儿防老”, Yǎng er fánglǎo) illustrates the instrumental perspective between the parent-child relationship in traditional Chinese culture. Second, the public social services and welfare system in rural areas are less developed; and so rural elderly parents relying on public old-age care is impossible. In more industrialised and modernised urban areas of China, the traditional reliance on family and children for old-age-security has largely changed. A significant number of urban elderly parents now rely on social support and have accepted living in nursing homes rather than expecting their adult children to provide as much daily care and family support as before. However, this may not be “acceptable” in rural areas.

Set against this context, the questions this chapter will address include: Are rural elderly parents with migrant children impaired in terms of their emotional health, due to the clash with their traditional values of filial piety? If so, is there an observable difference in the magnitude of the emotional impact rural elderly parents according to the type of their children’s migration? Some rural elderly parents could have seen all their adult children migrate, whereas other rural elderly parents might have had some of their children move away whilst some stay and work at home. Thus far, there is little literature that explores these specificities. Similarly, there have been very few studies concerning whether and how the duration of the adult children’s migration can impact the emotional health of these rural elderly parents. Thus, to gain a better understanding of how migration impacts on the emotional health of rural elderly parents, this chapter aims at investigating the relationships between adult-child migration, duration of the migration, and the emotional health of rural elderly parents.

6.2 Literature review and research questions

6.2.1 Mixed effects of migration on the emotional health of rural elderly parents

In many developing countries, deprived families are using labour migration as one of the most efficient ways to break the poverty cycle (Clemens, 2011). However, due to the geographic distance created by the migration, the frequency of intergenerational interaction and exchanges of assistance between the two generations decrease significantly, leading to adverse effects on intergenerational solidarity (Bengtson & Roberts, 1991) and the health of left-behind family members (Lu, 2013).

Much of the literature has reported that offspring migration is detrimental to the health and wellbeing of the left-behind rural elderly parents. Antman (2010) uses data from Mexican Health and Ageing Study to examine the relationship between children's migration status and parental health outcomes, and reports that left-behind older parents in Mexico are more likely to experience poor physical and mental health if their children migrate to the U.S. Similarly, based on a Thai national survey of older people, Adhikari et al. (2011) also found that the older people who had migrant children were more likely to report symptoms of mental health issues than their counterparts with no out-migrated adult children. However, their study claimed there were no significant impacts on the physical health of left-behind rural elderly parents.

Meanwhile, other researchers have argued that there are positive associations between adult-child migration and rural elderly parents' health. Böhme et al. (2015) used data from Moldova, which has one of the highest emigration rates in the world, reported positive effects of adult-child migration on self-reported health and body mass index (BMI) of the elders left behind and found no effects on mental health or cognitive abilities.

In China, the volume of literature investigating the social consequences of offspring migration has increased steadily since 2000, and most researchers have confirmed that adult-child migration can significantly impair both the physical and mental health of the left-behind senior parents (Huang et al., 2016; Shu & Tong, 2017; Ao et al., 2016)

6.2.2 Channels of how migration makes a difference

As the literature evolves, an increasing number of studies are investigating the mechanisms or channels of how adult-children's migration can make a substantial impact on left-behind rural elderly parents' health physically and/or mentally. For example, Antman (2010) argues in his study that intergenerational support from migrant children, including remittances, physical support, and emotional support can significantly affect the physical and mental health of rural elderly parents with migrant children.

Böhme and et al (2015) explain that the positive migration effects they found are linked to an income effect. Increased income can significantly improve the senior person's diet, decrease the time needed for farm work, and thereby increase leisure and sleep time. Therefore, it can compensate for the negative effects of decreasing social contact when the elderly parents' family members migrate. The income mentioned by Böhme is the remittance sent by migrant children, which has become one of the central considerations when evaluating the overall effect of migration on the health of the rural elderly who are left behind.

The positive effect brought by remittances can help explain why some studies have found that the migration of adult children does not impose adverse impacts on the wellbeing of the elderly left

behind, which runs contrary to popular belief (Gassmann et al., 2012). Two of the latest studies on remittances and migration have reported that remittance can partly compensate for the negative effects brought by migration (Yi et al., 2019; Pan & Dong, 2020). However, these two studies hold different opinions on the overall effects of migration on the physical and mental health of the left-behind rural elderly. Yi et al (2019) conclude that overall, migration benefits left-behind parents both physically and mentally despite the loss of labour due to migration, because the remittances sent back from migrant children can compensate for the adverse effects on physical and mental health. Pan and Dong (2020) report that remittances can only compensate for around 15 per cent of the loss in self-reported health and about 20 per cent of mental health, arguing that overall, adult children's migration is detrimental to rural elderly parents. Since the migration effects have not been fully explained, researchers are investigating other channels to obtain the whole picture of how migration has an influence on the health of the rural elderly left behind.

The number of migrant children is one of the considerations. Guo et al. (2009) use survey data from one of the provinces with the largest migration population in China, and find that after controlling for inter-generational support, older parents with more migrant children reported significantly higher depression and lower life satisfaction. This finding is supported by Ao, Jiang and Zhao (2016), who find that with instrumental variable correction, one additional adult child who migrates for work can increase the likelihood of rural elderly parents' health being "poor" by around 8 per cent ¹.

Meanwhile, living arrangements have also been considered by many researchers because it directly reflects the change of intergenerational support—the physical and emotional support. Due to labour-related migration in the rural working-age population, the proportion of non-traditional households has increased significantly, including empty-nest households, skipped-generation households (SGHs, grandparents living with grandchildren without the middle generation) (Goldstein et al., 1990; Gui, 1988; Huang, 2006; Zhang, 2013). Empty-nest rural elderly parents are reported to be suffering from serious mental health issues (Liu & Guo, 2007; Su et al., 2012), and older people living in SGHs have also reported a lower level of happiness and mental health compared with their counterparts living in a traditional three-generational household (Silverstein et al., 2006). Researchers used a dataset from China Family Panel Studies (CFPS), the most nationally representative survey in China, that reported that rural older individuals living in three-generation families have better mental health than those living in SGHs (Ren & Treiman, 2015; Wen et al., 2019).

6.2.3 Chinese context and research hypotheses

To understand the association between children's migration and the psychological wellbeing of older parents living in rural areas of China, researchers must refer to the country's unique social and cultural background.

Intergenerational co-residence reflects both the instrumental and the symbolic practices of filial piety. As acknowledged by Efklides et al. (2003), the presence of children in a family contributes to higher social support and closer relationships. Providing financial support to parents is an essential manifestation of filial piety in China, so is the emotional and moral support of children, besides its function of organising a family's economy and agriculture and labour support. Unlike urban seniors, whose later life is strongly supported by a public pension plan and medical coverage, the rural elderly parents have no such access to state welfare services. For them, living in a multigenerational household is still a symbol of success in old age: being cared for, respected, and supported by their children. Thus, faced with ageing body and physiological changes (Amarya et al., 2018), absence of adult children at home can be detrimental to their emotional health and wellbeing (Lloyd et al., 2014), by taking the intersectionality (Crenshaw, 2013; McCall, 2005) into consideration.

Therefore, beneath the surface of parent-child separation and SGHs whereas decreased intergenerational support and quality of parent-child relationship, it is the rising conflicts between modernisation and traditional family, the filial piety dilemma (Yeh, 1995; Yeh & Bedford, 2004; Yeh & Yang, 2009). If intergenerational co-residence is one of the expressions of embedded cultural values according to filial piety that affect the wellbeing of rural elderly parents in a household, then it is expected that with the same amount of material support from adult children, rural elderly parents have the worst self-evaluated wellbeing and life satisfaction when all their coresident children have migrated, whereas rural elderly parents with any of their coresident children out-migrated would probably have a similar evaluation with rural elderly parents who have no migrant children.

However, the association between adult-child migration and emotional health of rural elders can be a positive pattern, as the making of rural-urban migration of adult children can be perceived as improved social status, which brings honours to elderly parents (Deutsch, 2006) and thus is regarded as filial. Because the cultural framing of the urban as being modern and global has formed an important motivation for rural-to-urban migration, especially in the recent cohorts; the spatial mobility from less developed rural areas to more developed and prosperous cities symbolises social mobility. Lu (2022) reported a significant positive association between migration and intergenerational subjective social status mobility, especially between 2007 and 2021. The increased subjective social status can be explained by decreased economic inequality (X. Shi et al., 2010) based on increased financial returns from non-agricultural work (N. Zhu & Luo, 2010) and more opportunities for upward social mobility (Ye Liu et al., 2015) because of increased social capital and employment ratio (C. Lu, 2022). Thus, rural-urban migration could impose positive impacts on emotional health of rural elders because increased financial support and intergenerational subjective social status mobility are in line with the practises of filial piety. Therefore, I propose a pair of contrasting research hypotheses accordingly:

Hypothesis 6-1a: Rural elderly parents for whom *all* their coresident children out-migrated have the lowest level of self-evaluated emotional health, while those with *any but not all* of their coresident children migrated have a similar self-evaluated emotional health with rural elderly parents with no child migration.

Hypothesis 6-1b: Rural elderly parents for whom *all* their coresident children out-migrated have the highest level of self-evaluated emotional health, followed by those with *any but not all* of their coresident children have migrated; elders with no migrant children have the lowest level of subjective emotional health.

My second hypothesis responds to the fact that little is known, theoretically or empirically, about how the duration of migration is impacting the emotional health of rural elderly parents. Most literature has confirmed that the physical and/or mental health of rural elderly parents are affected by consequential changes followed by migration, including the decreased physical and emotional support while the increased remittance. However, what are the temporal effects of these life changes on the wellbeing of those who have “traditional” expectations of their children? Will the rural elderly adapt after their children have migrated, in accordance with the theory of social adaptation (Kahle, 2013)? Thus, to better understand the impact of migration, another purpose of this chapter is to investigate the effects of migration duration, the linear and nonlinear effects on emotional health. The second research hypothesis is:

Hypothesis 6-2: The emotional health of rural elderly parents is negatively affected if all their adult children have out-migrated, but the negative influence decreases with time, that is to say there is a turning point of the effects of migration duration.

6.3 Data and Research Methods

6.3.1 Data

The analysis of this chapter is based on the first wave of China Family Panel Studies (CFPS 2010), an authoritative and nationally representative survey conducted by Peking University. This dataset was described in detail in Chapter 4; in this section I will discuss the sample and the measures used for the analysis in the current Chapter.

First, how family is defined in CFPS is critical for the measure of adult child migration in this study. CFPS defines family members as “coresidents” bonded by blood ties or marriages, who “share an oven”, that is, being economically dependent within a dwelling unit, the household. Thus, adult children who have left home because of work are still considered household members. In contrast, those who have married off or have established their own households are no longer considered as household

members (Xie et al., 2017). CFPS did not ask for current socio-economic information of adult children who have married off or have established their own households, nor their migration information, but it obtained primary demographic data from the elderly parents. Not including children who are no longer household members but potentially living nearby could cause potential issues in the study of the emotional wellbeing of elders.

This chapter follows the existing literature (Wang & Li 2011; Ren & Tang 2014) based on Chinese social context, supporting that members of the same household are more likely to provide instrumental and/or emotional support. Therefore, not including adult children who are no longer economically co-dependent and co-resident with elderly parents would not cause substantial information loss.

The research sample of the chapter was first narrowed down to 3418 observations by selecting rural elderly parents aged 60 and above by two variables: *hukou* (rural=0, urban=1) and age (in years). Second, observations with no financially co-dependent adult children were further dropped (N=3014). And finally, due to some random missing cases from used variables, the final sample size is 2937. The (simplified) sample selection process is displayed in Figure 6-1 below. For more details, please refer to Figure 4-4 in Chapter 4.

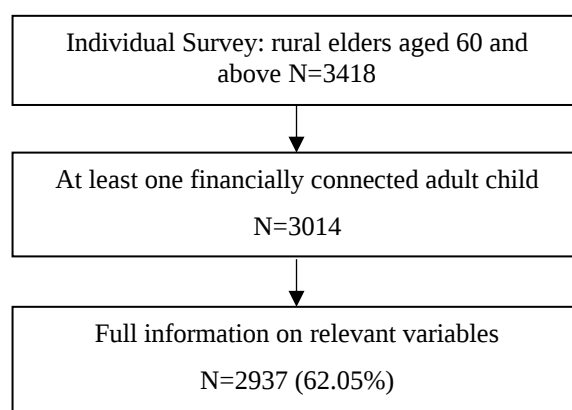


Figure 6-1 Selection of the analytical sample

6.3.2 Measures

Dependent variable. Emotional health in this study is measured in two aspects: self-reported depression and subjective wellbeing (hereafter, depression and wellbeing) as psychological wellbeing measured as depression and self-reported subjective wellbeing have been an important issue in the research on healthy and resilient ageing (Kim et al., 2021; Netz et al., 2005; Ruuskanen & Ruoppila, 1995).

Depression is an aggregated indicator based on six items ¹³ from the widely accepted Centre for Epidemiological Studies Depression Scale (CES-D scale) (Radloff, 1977). The original scale is composed of 20 items, but the reliability and validity of the Chinese modified version of the CES-D scale have been approved by Zhang et al. (2010) through 16047 Chinese participants from 39 cities in 21 provinces. In this study, the aggregated score is reserved, making it ranging from six (the least depressed) to thirty (the most depressed), which is then standardised. The reliability coefficient for these items is 0.87. Wellbeing was also aggregated and standardised by using two survey questions, self-reported happiness ¹⁴ and life satisfaction ¹⁵.

Two independent variables. The two independent variables in this research are adult child migration and migration duration. As mentioned above (see Section 6.3.1), rural elderly parents are selected by having at least one financially co-dependent adult child, from which a three-categorical variable of migration type is also created.

To code adult child migration, first of all, I coded migration status for elderly parents' adult children who are still co-dependent. Since CFPS asked participants the reasons why *child_i* ($i=1/10$) who is co-dependent is away, and if *child_i* has migrated to other places for work, *migration_child_i* is coded as 1 and 0 otherwise. Afterwards, according to the combination of migration status of all co-dependent children, adult child migration is coded as a three-categorical variable. “No migration” means “none of the adult children who were financially co-dependent with their older parents had migrated in 2010”, “any migrated” refers to “any of the adult children who were financially co-dependent with their older parents had migrated in 2010”, and “all migrated” means “all of the adult children who were financially co-dependent with their older parents had migrated in 2010”. Hereafter “no migration”, “any migrated”, and “all migrated” are used, especially in the following Results section for ease of writing.

Migration duration is coded as a scale variable, with month as the unit. In CFPS, respondents were asked: “how many months has *child_i* been living away from home”, which is the item used to capture migration duration if *child_i* is living away due to migration. Given that some elderly parents have more than one migrant children, in this study migration duration is calculated as the mean of migrated children's not being at home. The square of migration duration is also calculated and included because of the potential nonlinear effects of migration duration.

¹³ Six indicators for depression level are: 1) Feel depressed and cannot cheer up. 2) Feel nervous. 3) Feel agitated or upset and cannot remain calm. 4) Feel hopeless about the future. 5) Feel that everything is difficult. 6) Think life is meaningless. The five-Likert Scale is: 1 (Almost every day) -2 (Often)-3 (Half of the time)-4 (Sometimes)- 5 Never

¹⁴ Self-reported happiness is measured according to the survey question, “How happy are you”, (very unhappy)1-2-3-4-5(very happy).

¹⁵ Self-reported life satisfaction is measure according to the survey question, “How satisfied are you with your life” (very unsatisfied)1-2-3-4-5(very satisfied).

Mediators and moderators. Since intergenerational support, like economic support or remittance from migrant children, can compensate for the negative effects of migration; taking care of grandchildren can help alleviate feelings of depression in rural elderly parents (Ren & Treiman, 2015; Silverstein et al., 2006; Wen et al., 2019). Financial support is measured by the number of children instead of the exact amount of money as a proxy. Because the survey only asked participants whether they have received any economic support from their children but did not ask amount of remittances received from adult children. Thus, it is measured as whether they have received any remittances. Childcare is captured by the number of grandchildren rural elderly parents were taking care of when the survey was conducted.

Deviation of parent-child emotional closeness is the moderator. Silverstein et al. (2006) report that stronger parent-child emotional closeness could positively influence rural older persons' wellbeing. However, instead of including the maximum value of the parent-child relationship, this chapter is more interested in the within-family dispersion of the parent-child relationship. Emotional closeness, thus, is measured through the self-reported item of relationship closeness in CFPS2010¹⁶. The deviation of emotional closeness with all children is included in the model as the moderator.

Control variables. Sociodemographic variables that can affect wellbeing were also included as explanatory variables. Variables at the individual level include gender, marital status, age (in years), educational attainment, physical health¹⁷ status, personal annual income (thereafter income)¹⁸. Medical insurance and social old pension accessibility at the individual level were also included because of the progress of pension reform in rural China and the confirmed positive effects on rural elderly parents' life quality (Liu et al., 2015).

The number of children alive is included because it reflects one aspect of traditional Chinese culture which speaks highly of the importance and benefits of having more offspring, reflected by the Chinese folk "more children bring more happiness" (*duozi duofu* '多子多福'), although the children have left the rest of their parents and the empty-nest rural elderly parents usually suffer from serious mental health (Liu & Guo, 2007; Su et al., 2012). The analytical framework of this study is displayed in Figure 6-2.

¹⁶ Respondents were asked to rate their relationship with each family members according to the Family Roster, on a five-point Likert Scale: 1 "not close at all", 2 "Not very close," 3 "Fair," 4 "Close," and 5 "Very close". Scores were included in calculation when the relationship was identified as parent and child.

¹⁷ Physical healthy is measured by the survey question: "How would you rate current state of health (compared to people at the same age as you)? 1-Excellent 2-Good 3-Average 4-Poor 5-Very Poor", with "Excellent" and "Good" coded as 0 and "Average", "Poor", and "Very Poor" coded as 1.

¹⁸ Personal annual income is coded into dummy, with more than 4500RMB (which is the mean of personal annual income in the research sample) coded as 1 and 0 otherwise.

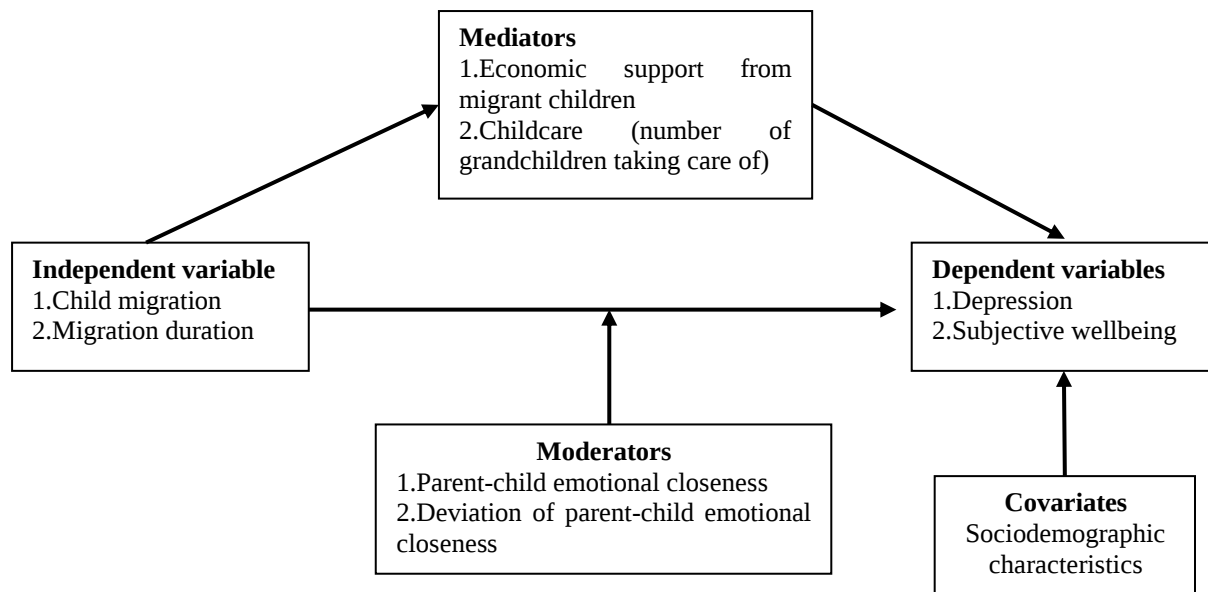


Figure 6-2 Analytic framework for elderly emotional health and adult child migration

6.3.3 Analytic strategy

To investigate how adult child migration affects the emotional health of rural elderly parents, this study first used figures and pairwise comparisons of the mean to examine the association between the two aspects of emotional health and covariates. Second, nested OLS regression models are applied to investigate the main effects of migration and the duration on depression and wellbeing, the effect size and level of mediating effects (financial support and childcare), and moderating effects (standard deviation (SD) of emotional closeness).

6.4 Empirical Results

6.4.1 Descriptive statistics

Table 6-1 presents the descriptive statistics of the research sample. *Depression* and *wellbeing* were the measures of Emotional health, which were both standardised, with a mean close to zero and a standard deviation (S.D. hereafter) close to 1.

In this research sample, around 4 per cent of rural elderly parents had seen some, but not all their children migrate, while more than 20 per cent had seen all their children migrate. The high percentage of rural elderly parents with children migration is consistent with the increased migration from Chinese rural areas. The average duration of migration in the whole sample was about five months, with a large SD (19.073), which is reasonable since this is the SD of the entire sample with rural elderly parents with *no migration* included.

Table 6-1 Descriptions of analytical variables (N=2937)

Variables	Mean	SD	Notes
Depression	0.301	1.244	Standardised, aggregated based on six items, Cronbach alfa=0.87
Subjective wellbeing	0.057	1.011	Standardised, aggregated based on two items, Cronbach alfa=0.75
Independent variables			
Adult child migration			1(no migration),
<i>any</i> migrated (<i>ref. no migration</i>)	4.02%	-	2(<i>any</i> economically related children migrated), 3(<i>all</i> economically related children migrated)
<i>all</i> migrated	22.23%	-	
Migration duration	4.505	19.063	0(min), 240(max), unit: month
Square of mean migration duration	383.565	3066.799	0(min), 57600(max)
Mediator			
Financial support	0.351	0.557	1(min), 3(max)
Childcare	0.402	0.631	0(min), 6(max)
Moderator			
Deviation of emotional closeness	0.192	0.366	0(min), 2.310(max)
Controls			
Age	68.560	7.148	60(min), 97(max)
Male	47.7%	-	0(female), 1(male)
Married	69.6%	-	0(no), 1(yes)
Primary school and above	38.0%	-	0(no), 1(yes)
Has chronic disease	23.3%	-	0(no), 1(yes)
Income (≥ 4500 yuan)	16.1%	-	0(no), 1(yes)
Has medical insurance	85.1%	-	0(no), 1(yes)
Has old pension	11.7%	-	0(no), 1(yes)
Number of Children alive	3.237	1.507	1(min), 10(max)

In this sample, rural elderly parents had an average of one child providing economic support and a maximum of three. The mean number of grandchildren taken care of by rural elderly parents ranged from zero to six. The mean of emotional closeness deviation reported by rural elderly parents was 0.192, ranging from 0 to 2.310.

Around 48 per cent of these rural elderly parents were males with an average of three adult children; about 70 per cent of them were married or in cohabitation status; around 23 per cent of them have been diagnosed of having any chronic diseases in the last six months; 38 per cent of them had been to primary school and above; and only 16 per cent of them had an annual income higher than 4500 RMB Chinese Currency. About 85 per cent had at least one kind of medical insurance, while less than 12 per cent had an old age pension.

Figure 6-3 displays the distribution of depression and wellbeing in quintiles. It can be found that rural elderly parents with *no* migration and *all* migrated had a similarly low level of depression (the first quintile). It was rural elderly parents with *any* migrated has occupied more than 30 per cent of the medium-high depression level (fourth quintile). Meanwhile, the figure shows that larger percentages of rural elderly parents with *any* migrated rated themselves in a low and medium level of wellbeing than rural elderly parents with *no* migration and *all* migrated. Whereas, at the medium-high and high level

of wellbeing, rural elderly parents with *no* migration have surpassed rural elderly parents with some experience of adult-child migration.

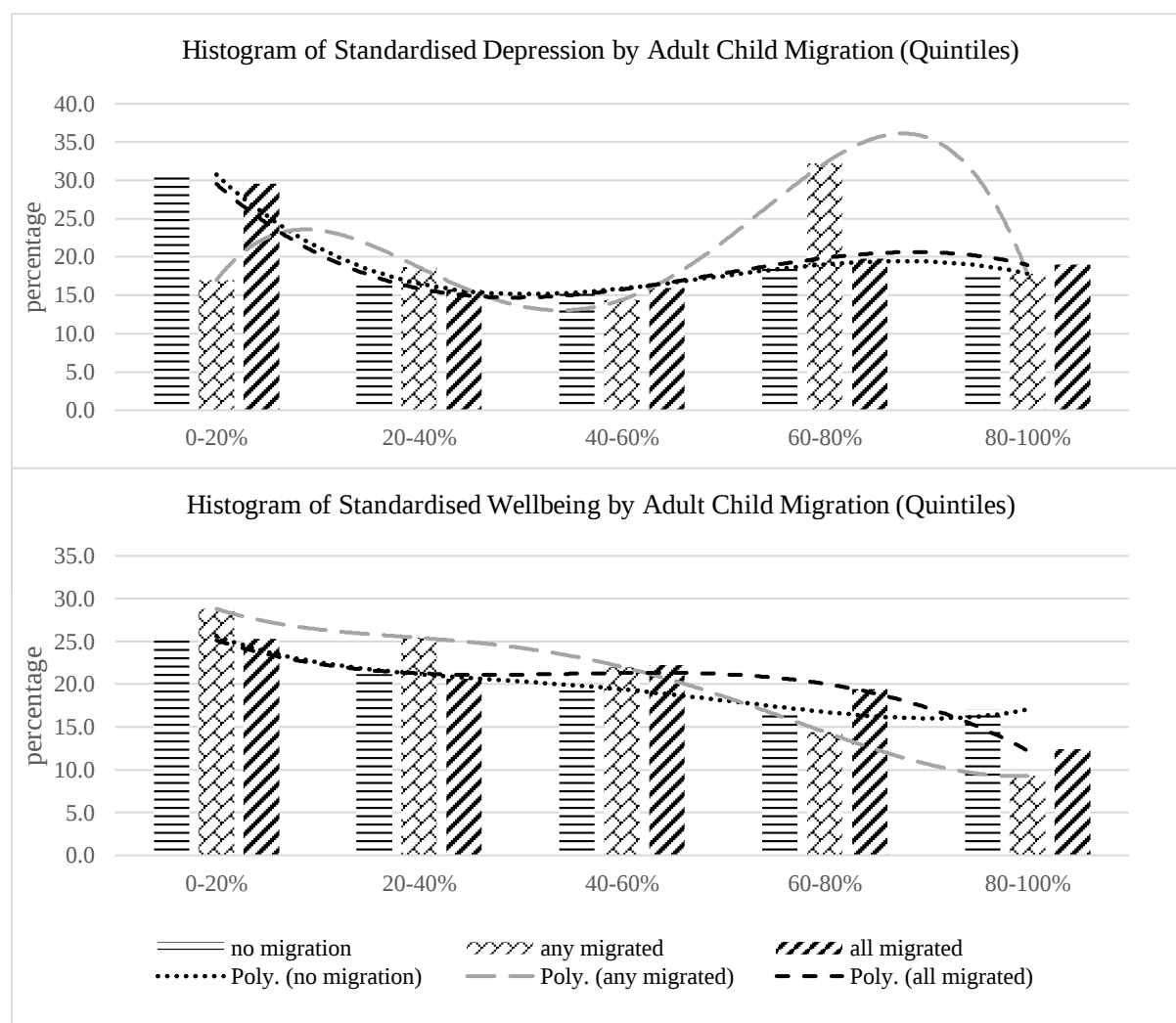


Figure 6-3 Histogram of Depression and Subjective Wellbeing by Adult Child Migration Type

Note. Poly is the abbreviation of polynomial.

Figure 6-3 reveals the nonlinear effects of migration duration on depression and wellbeing. Also, given the possible heteroskedasticity shown by the wide confidence intervals, this study underwent the White tests, and the tests rejected homoskedasticity ($P < 0.05$). Thus, robust analyses were performed in this study. Table 6-2 presents the pairwise comparisons of all explanatory variables by children migration status. The second column displays the mean and S.D. of rural elderly parents with no migration. The third and fourth columns display pairwise comparisons of the other two types of rural elderly parents.

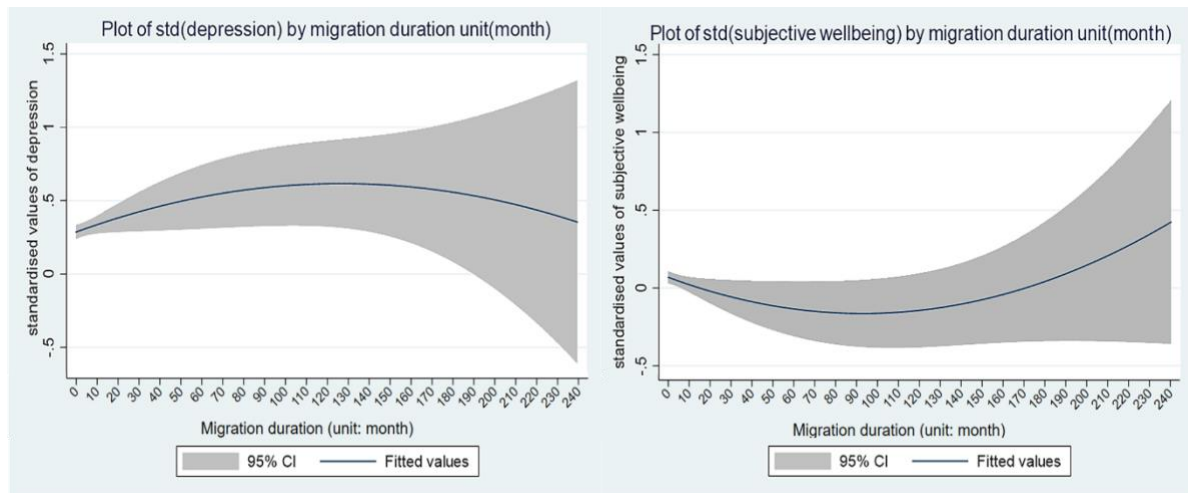


Figure 6-4 Two-way scatter plot of depression and wellbeing on migration duration

Table 6-2 T-test of variables used in this research by adult child migration

Explanatory variables	Mean (ref.no migration)	Any migrated-No migration	All migrated - No migration
Independent variables			
Migration duration	/	16.653* (1.655)	17.252* (0.782)
Square of migration duration	/	1257.798* (283.532)	1497.873* (133.902)
Mediator			
Financial support	0.306 (0.489)	0.270* (0.052)	0.153* (0.025)
Childcare	0.358 (0.619)	0.184* (0.059)	0.162* (0.028)
Moderator			
Deviation of emotional closeness	0.185(0.356)	0.151* (0.034)	0.005 (0.016)
Controls			
Age	69.347 (7.475)	-3.881*(0.664)	-2.839* (0.314)
Male	0.452 (0.498)	0.150*(0.047)	0.086* (-0.022)
Married	0.657 (0.475)	0.190*(0.043)	0.140* (0.020)
Has chronic disease	0.233 (0.423)	0.013 (0.040)	-0.003 (0.019)
With some education	0.367 (0.482)	0.031 (0.046)	0.048* (0.022)
Income (>=4500yuan)	0.159 (0.365)	0.003 (0.035)	-0.010 (0.016)
Number of Children alive	3.237 (1.535)	0.059 (0.142)	-0.012 (0.067)
Has medical insurance	0.849 (0.358)	0.024 (0.034)	0.002 (0.016)
Has old pension	0.118 (0.323)	-0.042 (0.030)	0.043 (0.032)

Note. N=2937, Standard Deviation in parenthesis; *p<0.05

Descriptive statistics from Table 6-2 show that controlled variables, including gender, marital status, and age, were all differentiated from the reference in two comparisons (*any* migrated VS *no* migration; *all* migrated VS *no* migration): rural elderly parents with migrant children were more likely to be males, younger, marital status, and education in the group of the rural elderly with *all* migrated. No significant difference was found regarding other important controls. This preliminary analysis could indicate that the household migration decision is potentially correlated with older parents' demographic

characteristics, as Pan and Dong (2020) report that adult children whose older parents are healthier, younger, or living with a spouse are more likely to migrate.

In the next section, this chapter explores the effects of all variables of interest systematically in the regression analyses. The empirical results are unfolded in two parts: first, the regression analyses of depression followed by wellbeing. Each component is divided into two subsections. As previously discussed, there could be a potential systematic difference between rural elderly parents with *any* migrated and those with *all* migrated. If the two types of children migration status were not separated in the regression, differentiated effects of migration duration on rural elderly parents' emotional wellbeing might not be investigated.

6.4.2 Estimating the influence of migration on rural elderly parents' emotional health by migration type

As displayed in Table 6-3, the influence of migration on the emotional health of rural elderly parents differs according to the migration status of their adult children.

Table 6-3 Regression of depression and wellbeing (Full sample size)

Variables	Depression		Wellbeing	
	(1)	(2)	(1)	(2)
Adult child migration				
Any migrated (ref. no migration)	0.161! (0.097)	0.193* (0.096)	-0.340*** (0.093)	-0.328*** (0.094)
All migrated	0.037 (0.046)	0.069 (0.046)	-0.120** (0.044)	-0.118** (0.045)
Covariates				
Age		0.002 (0.003)		0.005 (0.003)
Male		-0.074! (0.041)		-0.028 (0.040)
Married		-0.048 (0.046)		0.042 (0.045)
Chronic disease		0.291*** (0.044)		-0.036 (0.043)
With some education		-0.228*** (0.043)		0.128** (0.042)
Income_4500RMB		-0.144** (0.053)		0.157** (0.052)
Number of Children alive		0.022! (0.013)		0.01 (0.013)
Has medical insurance		-0.150** (0.053)		0.197*** (0.052)
Has old pension		-0.004 (0.059)		0.177** (0.057)
Constant	0.029 (0.022)	0.07 (0.229)	0.062** (0.021)	-0.553* (0.223)

Note. N=2937. Robust Standard errors in parentheses; ! p < 0.1, * p < 0.05, ** p < 0.01, *** p < 0.001.

Regarding depression, it is marginally significant when no other explanatory variables are included, and when other socioeconomic and demographic variables are included, the effect becomes significant, and the size of the impact has also slightly increased. Interestingly, it is rural elderly parents with *any* migrated children more depressed rather than rural elderly parents with *all* migrated children. Concerning wellbeing, the data shows that with or without other controls, it is significantly and negatively impacted by migration, regardless of the migration type of adult children.

6.4.3 Estimating the influence of migration duration on rural elderly parents' depression

Having established the differentiated effects of migration on emotional health, both on depression and wellbeing, we can now consider migration duration by migration type. This chapter investigates the effects of migration duration on depression and wellbeing by migration type with rural elderly parents with no migration as the reference in sections 6.4.3 and 6.4.4, respectively.

As displayed in Table 6-3, Depression (1) is the base model with only controls; Depression (2) is the mediating model with controls and mediators; Depression (3) is the moderating model with both controls and moderators and Depression (4) is the full model, with mediators, moderators, and controls. It can be concluded that both the duration of migration and its square display significant effects on depression throughout all models: the results are marginally significant ($p < 0.1$) in the base model and mediating model while significant ($p < 0.05$) in the moderating and full model.

The coefficient of migration duration in Depression (4) can be interpreted as: with every one-month increase in the duration of migration (*any* migrated), the standardised aggregated depression of rural elderly parents significantly increased by 2 per cent of a S.D. compared with rural elderly parents with no child migration. However, the level of depression diminishes over time, since the coefficient of the square of migration duration is significantly negative (Coeff. = $-2.27e-04^{**}$ at 95% CI). The turning point is at around the 44th month ($-b/2a = -0.020 / (2 * -2.27e-04)$ approximate to 44), indicating that when the migration duration of adult children is prolonged, rural elderly parents' depression keeps increasing by around 1 unit S.D. ($0.02 * 44 = 0.88$) before it starts to decrease at the 44th month.

Although the inclusion of mediators does not change the coefficient size of migration duration as shown in Depression (1) and Depression (2), it does show that taking care of grandchildren is significantly related to depression: taking care of one more grandchild can decrease 10 per cent of a S.D. in the depression level. With moderators included, the coefficient of migration duration increases from 0.014 (in Depression (1) to 0.020 (in Depression (3))). The deviation of emotional closeness between the parent and children has a strong correlation with the depression level: every unit increase in the deviation of emotional closeness leads to an increase in depression of 19 per cent of a S.D. Also, the interaction is positive and significant, indicating the existence of moderating effects of emotional closeness.

Intriguingly, the social demographics of age, gender, and marital status have shown no significant effects on depression. If a potential positive selection exists, the real effects of migration duration on rural older persons' depression could be larger than those in Table 6-4. Meanwhile, among the sociodemographic variables that show no difference between the categories of migration, most display significant effects on depression (see Table 6-3). Rural elderly parents diagnosed with any chronic diseases display depression levels around 30 per cent of a S.D. higher than those with no chronic diseases. Education, income, and medical insurance, on the other hand, protect rural elderly parents from being more depressed: rural elderly parents with more than 4500 RMB annual income report 17 per cent of a S.D. lower depression level, rural elderly parents with at least some primary education report averagely 23 per cent of a S.D. lower than those are illiterate; having medical insurance also helps decrease about 23 per cent of a S.D. However, no significant effect is found from the number of children alive or old pension.

Within the subsample of rural elderly parents with *all* migrated, the effect size of migration duration on rural elderly parents' depression level stays steadily even when mediators, moderators, or both are included in the regression. When mediators (Depression (3')) and moderators (Depression (4')) are introduced, migration duration becomes marginally significant (at 95% CI). The effect of the square of migration duration also becomes statistically significant (Coeff. = -2.85e-05, at 95% CI). The turning point was the 88th month ($-b/2a = -0.005/(2 \times -2.85e-05)$), indicating that rural elderly parents with *all* migrated need twice the time to recover from depression.

Regarding the two mediators and moderators, they have also displayed differentiated effects according to migration types. First, taking care of grandchildren can reduce depression for rural elderly parents with *any* migrated but not for the rural elderly parents with *all* migrated children. However, caregiving cannot fully mediate the emotional loss of migrant children's being away. For the moderators, the deviation of emotional closeness has a stronger positive influence on depression for rural elderly parents with *all* migrated, and the interactive effect is also smaller.

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With respect to the mediators, neither economic support from adult children nor taking care of grandchildren can significantly decrease depression. However, large deviation in emotional closeness can significantly increase depression (Coeff. = 0.243, $p < 0.01$). This reflects that it could be the

differentiated emotional closeness with different out-migrated children that makes the rural elderly parents who are left behind emotionally suffer. For other controllers, still, education, chronic disease, income, and medical insurance are significantly correlated with depression, but not gender, marital status, and age.

Taken together, the statistical results from Table 6-4 suggest that although there is a correlation that indicates migration duration can impose negative effects on rural elderly parents' mental health by increasing the depression level, there is possibly a different pattern—the nonlinear effect of migration duration on mental health: rural elderly parents who have migrant children regardless of the migration type of their children have worse mental health, and this depression could become worse when migration prolongs. However, it is the group of rural elderly parents with *all* children out-migrated who need almost double the time to reach the turning point, the 88th month, after which their depression level decreases.

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Table 6-4 Regression of depression on migration duration by adult child migration

Independent variables	Any migrated (N=2284)				All migrated (N=2819)			
	Depression (1)	Depression (2)	Depression (3)	Depression (4)	Depression(1')	Depression(2')	Depression(3')	Depression(4')
Migration duration	0.014! (0.008)	0.014! (0.008)	0.020* (0.009)	0.020* (0.008)	0.005 (0.003)	0.005 (0.003)	0.005! (0.003)	0.005! (0.003)
Migration duration square	-9.40e-05* (4.55e-05)	-9.29e-05* (4.53e-05)	-2.26e-04** (7.85e-05)	-2.27e-04** (7.78e-05)	-1.76e-05 (2.03e-05)	-1.80e-05 (2.04e-05)	-2.83e-05* (1.42e-05)	-2.85e-05* (1.43e-05)
Mediators								
Financial support		0.019 (0.048)		0.022 (0.048)		0.009 (0.043)		0.014 (0.042)
Childcare		-0.100** (0.037)		-0.104** (0.037)		-0.055 (0.035)		-0.053 (0.035)
Moderators								
Deviation of emotional closeness			0.189* (0.082)	0.192* (0.082)			0.243** (0.077)	0.243** (0.077)
Migration duration # Deviation of emotional closeness			0.011* (0.005)	0.011* (0.005)			0.004! (0.002)	0.004! (0.002)
Controls								
Age	-4.47e-05 (0.004)	-0.001 (0.004)	-1.36e-04 (0.004)	-0.002 (0.004)	0.003 (0.004)	0.002 (0.004)	0.003 (0.004)	0.002 (0.004)
Male	-0.069 (0.057)	-0.072 (0.057)	-0.08 (0.057)	-0.083 (0.057)	-0.089! (0.051)	-0.090! (0.051)	-0.099! (0.051)	-0.100! (0.051)
Married	-0.054 (0.065)	-0.048 (0.065)	-0.053 (0.065)	-0.046 (0.065)	-0.058 (0.059)	-0.053 (0.059)	-0.048 (0.059)	-0.044 (0.059)
Has Chronic disease	0.315*** (0.063)	0.307*** (0.063)	0.310*** (0.063)	0.301*** (0.063)	0.358*** (0.059)	0.353*** (0.059)	0.351*** (0.059)	0.346*** (0.059)
With some education	-0.244*** (0.058)	-0.239*** (0.057)	-0.237*** (0.058)	-0.231*** (0.058)	-0.276*** (0.051)	-0.274*** (0.051)	-0.265*** (0.051)	-0.263*** (0.051)
Income (>=4500yuan)	-0.184** (0.070)	-0.179* (0.070)	-0.175* (0.070)	-0.170* (0.070)	-0.159* (0.064)	-0.158* (0.065)	-0.153* (0.064)	-0.152* (0.064)
Number of children alive	0.028 (0.017)	0.030! (0.017)	0.021 (0.018)	0.023 (0.018)	0.027! (0.016)	0.028! (0.016)	0.017 (0.016)	0.018 (0.016)
Has medical insurance	-0.230** (0.080)	-0.226** (0.080)	-0.229** (0.080)	-0.226** (0.080)	-0.182** (0.071)	-0.180* (0.071)	-0.176* (0.071)	-0.175* (0.071)
Has old pension	0.032 (0.078)	0.04 (0.078)	0.036 (0.078)	0.044 (0.078)	-0.012 (0.069)	-0.009 (0.069)	-0.011 (0.069)	-0.008 (0.069)
Constant	0.507 (0.320)	0.614! (0.321)	0.497 (0.319)	0.608! (0.320)	0.295 (0.290)	0.359 (0.291)	0.267 (0.290)	0.33 (0.290)

Note. robust standard errors in parenthesis; ! p < 0.1, * p < 0.05, ** p < 0.01, *** p < 0.001.

6.4.4 Estimating the influence of migration duration on rural elderly parents' wellbeing

As previously established, rural elderly parents' wellbeing was significantly and negatively affected by migration regardless of migration status of adult children. This chapter now separately explores migration duration against migration type, to make the analysis systematic.

Table 6-5 shows the influence of migration and its duration on rural elderly parents' wellbeing: Wellbeing (1) is the base model with only controls; Wellbeing (2) is the mediating model with controls and mediators; Wellbeing (3) is the moderating model with both controls and moderators, and Wellbeing (4) is the full model, with mediators, moderators, and controls. The results show that both the duration of migration and its square display significant effects on wellbeing throughout all models and with the inclusion of mediators and moderators. The effect size of migration duration also increases, from 0.014 in the base model to 0.016 in mediating model, from 0.020 in the moderating model to 0.022 in the full model. Although the coefficient of migration duration is as small as 0.02, considering the unit of duration is month, time influence becomes large when migration duration prolongs.

The coefficient of migration duration in Wellbeing (4) shows us that with every one-month increase in migration duration, the wellbeing of rural elderly parents with *any* migrated children significantly drops by around 2 per cent of a S.D. compared with rural elderly parents with *no* child migration. This negative impact of migration duration diminishes over time, since the coefficient of the square of migration duration is significantly positive (Coeff. = 2.45×10^{-4} at 99 per cent CI). The turning point is at around the end of the 44th month ($-(-0.022 / (2 \times 2.45 \times 10^{-4})) = 44.90$), indicating that when the migration duration of adult children is prolonged, rural elderly parents' wellbeing keeps decreasing by around one SD. ($0.022 \times 45 = 0.99$) before it starts to bounce back at the 45th month.

In the mediating model (Wellbeing (2)), the mediating effects of economic support (Coeff. = 0.139, $P < 0.01$) and childcare (Coeff. = 0.084, $P < 0.05$) are both significantly positive: with one more adult child providing economic support, rural older persons' wellbeing increases by 14 per cent of a SD.; taking care of one more grandchild, wellbeing also increases by around 8 per cent of a SD. And both the level and effect sizes are consistent when the moderators' deviation of emotional closeness is included in the full model (Wellbeing (4)). The main effect of deviation of emotional closeness is significant: with one unit increase of deviation of emotional closeness between the older parent and the children, older's wellbeing drops about 20 per cent of a SD. The significantly negative coefficient (Coeff. = -0.011, $p < 0.01$) of the interaction between the migration duration and the deviation of emotional closeness indicates that longer migration duration and larger deviation of emotional closeness will lead to even worse wellbeing.

None of the demographic controls, including age, gender, marital status, and physical health, is significant in the full model (Wellbeing (4)). Neither does education help improve wellbeing. Only material-oriented resources like income, medical insurance, and old pension display significant positive effects on this rural elderly parents' wellbeing.

Regarding the regression results based on the subsample of rural elderly parents with *all* migrated with rural elderly parents having no child migration as the reference. Since the effect size of duration and its square are also statistically significant in the full model (Wellbeing (4')), although the effect size is quite small (Coeff. = -0.005, $p < 0.01$). Still, when considering the measuring unit is a month, the time influence can be large when the migration duration prolongs. The turning point is also calculated, which is the 85th month ($0.005 / (2 * 2.93e-05) = 85$) and the happiness level decreases by around 43 per cent of a S.D. ($0.005 * 85 = 0.425$).

Both the mediators—economic support and childcare, and moderators—emotional closeness and its deviation show statistical significance. Rural elderly parents with more adult children providing economic support and taking care of more grandchildren report significantly higher wellbeing. However, a large deviation of emotional closeness can significantly decrease wellbeing (Coeff. = -0.215, $p < 0.001$).

No significant effects of age, gender, or marital status were found, but as shown in the table that rural elderly parents with some education (Coeff. = 0.124, $p < 0.01$), a significant amount of income (Coeff. = 0.185, $p < 0.01$), have medical insurance (Coeff. = 0.194, $p < 0.001$), and old pension (Coeff. = 0.162, $p < 0.01$) have reported a significantly higher level of wellbeing.

Comparing results from Table 6-5, it can conclude that although raising grandchildren and receiving remittances from adult children can significantly mediate the emotional loss of rural elderly parents, while a large deviation of emotional closeness with children can increase the emotional loss of migration. The negative effect of migration cannot be fully mediated or moderated: if migration happens, rural elderly parents' wellbeing drops no matter if it is *any* or *all* of the coresident children.

Table 6-5 Regression of wellbeing on migration duration by adult child migration

Independent variables	Any migrated (N=2284)				All migrated (N=2819)			
	Wellbeing (1)	Wellbeing (2)	Wellbeing (3)	Wellbeing (4)	Wellbeing (1')	Wellbeing (2')	Wellbeing (3')	Wellbeing (4')
Migration duration	-0.014* (0.006)	-0.016** (0.006)	-0.020*** (0.006)	-0.022*** (0.006)	-0.004 (0.002)	-0.005! (0.002)	-0.004! (0.002)	-0.005* (0.002)
Migration duration square	9.86e-05** (3.29e-05)	1.08e-04** (3.40e-05)	2.31e-04*** (5.58e-05)	2.45e-04*** (5.97e-05)	1.78e-05 (1.49e-05)	2.19e-05 (1.49e-05)	2.53e-05* (1.11e-05)	2.93e-05** (1.12e-05)
Mediators								
Financial support		0.139** (0.045)		0.136** (0.045)		0.136*** (0.036)		0.131*** (0.037)
Childcare		0.084* (0.033)		0.088** (0.033)		0.084** (0.031)		0.083** (0.028)
Moderators								
Deviation of emotional closeness			-0.208** (0.069)	-0.204** (0.069)			-0.223*** (0.0620)	-0.215*** (0.062)
Migration duration # Deviation of emotional closeness			-0.011** (0.003)	-0.011** (0.004)			-0.003! (0.001)	-0.003! (0.002)
Controls								
Age	0.003 (0.003)	0.003 (0.003)	0.003 (0.003)	0.003 (0.003)	0.005! (0.003)	0.005! (0.003)	0.005 (0.003)	0.005! (0.003)
Male	-0.026 (0.047)	-0.024 (0.046)	-0.014 (0.047)	-0.012 (0.046)	-0.034 (0.042)	-0.036 (0.042)	-0.025 (0.042)	-0.027 (0.041)
Married	0.002 (0.053)	-0.001 (0.053)	0.000 (0.053)	-0.003 (0.053)	0.023 (0.047)	0.019 (0.047)	0.014 (0.048)	0.011 (0.048)
Has Chronic disease	-0.007 (0.052)	-0.006 (0.052)	-0.002 (0.052)	-0.001 (0.052)	-0.04 (0.045)	-0.039 (0.045)	-0.035 (0.047)	-0.034 (0.047)
With some education	0.088! (0.050)	0.077 (0.050)	0.08 (0.050)	0.069 (0.050)	0.146*** (0.043)	0.133** (0.043)	0.137** (0.044)	0.124** (0.044)
Income (>=4500yuan)	0.180** (0.061)	0.182** (0.0610)	0.171** (0.061)	0.172** (0.061)	0.182*** (0.054)	0.190*** (0.054)	0.177** (0.054)	0.185*** (0.054)
Number of children alive	0.01 (0.014)	0.007 (0.014)	0.018 (0.014)	0.014 (0.014)	0.014 (0.013)	0.011 (0.013)	0.022! (0.013)	0.019 (0.013)
Has medical insurance	0.167*** (0.062)	0.159** (0.062)	0.166** (0.062)	0.159* (0.062)	0.210*** (0.054)	0.199*** (0.054)	0.205*** (0.055)	0.194*** (0.054)
Has old pension	0.148* (0.061)	0.140* (0.061)	0.143* (0.061)	0.135* (0.061)	0.168** (0.060)	0.164** (0.060)	0.167** (0.054)	0.162** (0.053)
Constant	-0.353 (0.260)	-0.411 (0.260)	-0.343 (0.259)	-0.405 (0.239)	-0.594** (0.239)	-0.666** (0.239)	-0.571* (0.238)	-0.643** (0.232)

Note. N=2937. Robust Standard errors in parentheses. ! p < 0.1, * p < 0.05, ** p < 0.01, *** p < 0.001

Chapter 7 The Journey to Inclusion of Migrants: *Hukou* and City and Province Development as joint determinants of Household Financial Inclusion in China

7.1 Research background

Being financially included means having full access to and effective use of a range of financial services. Financial inclusion can help launch businesses, create job opportunities and increase employment, thus diminishing social poverty and inequality (Grimm & Paffhausen, 2015; Mugo & Kilonzo, 2017; Ajide, 2020). However, financial activities may also significantly increase economic and social inequalities (Mugo & Kilonzo, 2017; Ajide, 2020; Stein & Yannelis, 2020) due to its profit-driven nature (Finke & Huston, 2003; Yao & Xu, 2015). Today, financial markets and financial activities have gradually become part of ordinary people's daily lives (Fligstein & Goldstein, 2015; Van der Zwan, 2014). Individuals and families are becoming increasingly responsible for their financial security (Langley, 2008), with their health and wellbeing strongly tied to financial security (Berry, 2015).

The relationship between financial inclusion and citizenship entitlement for migrants is becoming increasingly evident in large cities in China. Local governments in large cities, such as Shanghai, Guangzhou, and other tier-one cities, have incorporated *hukou* system as an indispensable part of economic development and distribution (Du, 2004; Li et al., 2010). Entitlement of citizenship in cities requires urban and local *hukou*; thus, *hukou* conversion is highly desired. However, housing ownership is the primary condition for *hukou* conversion and full citizenship. Housing prices in megacities have increased by more than 100% since 2010 (The Economist, 2021), yet despite this, it has not deterred migrants from finding employment in urban areas. Indeed, megacities and large cities are the most preferred by migrant workers because of job opportunities and social services in large cities (Chen & Fan, 2016).

The tangled relationship between *hukou*, citizenship, and housing has made it apparent that financial inclusion is essential in citizenship attainment for migrants and their offspring. According to Wang (2006), urbanisation in China is city-oriented, family-based, multigenerational, and heavily conditioned on the households' material resources and financial capacity. Urbanisation for a rural household is a multigenerational project, beginning with the parental generation being employed in a city to accumulate financial capital for the offspring and invest in education, hoping that the younger generation from rural households can achieve urban citizenship via either finding a permanent job or purchasing a house in a city.

Since the early 2000s, the Chinese central government has advocated improvements to financial inclusion and social integration (Barth et al., 2009). However, hindrances of *hukou* are apparent. The existing literature suggests that financial inclusion in China is still unequal and limited to certain social groups. Based on the World Bank Findex database (2012), Fungáčová and Weill (2015) reported that although formal account ownership and formal saving in China outweighed those in other BRICS countries, the use of formal credit was much less widespread. Earlier in 2004, Wu (2004) reported that rural *hukou* holders were considerably less involved in bank loans and housing mortgages. Furthermore, using data from 2011 China Household Financial studies, Chen and Jin (2017) reported that although more than 50% of households used credit, less than 20% used formal credit. Based on the same dataset, Li and Qian (2018) found less than 15% of the households owned stocks, consistent with the figure (14%) reported by Yao and Xu (2015) based on the Survey of Chinese Consumer Finance and Investor Education 2008.

Due to the economic mobilisation ability of financial inclusion, it has become more and more crucial for rural-urban integration in China. Meanwhile, rural-urban integration has become more vertically stratified, city-oriented, and province-based, the rural discrimination and non-native discrimination are strengthened and deepened against the decentralisation of central government on fiscal expenditure and *hukou* policy. Consequently, the current rural-urban divide has become less efficient in studying *hukou* due to the increasing large-scale migration. However, little is known about how the current diversified and stratified *hukou* shapes financial inclusion; neither has there been sufficient research on how city development modifies how *hukou* impacts financial inclusion. This chapter aims to study how the new *hukou* typology and economic development together impact household financial inclusion by taking two macro-level factors— city and province development— into consideration.

7.2 Literature Review

7.2.1 Migration and the diversified *hukou* system in urban China

For decades, the distribution of social services and welfare based on *hukou* has prioritised cities and urban citizens over that of rural populations. The distribution of benefits from *hukou* has been progressively strengthened and enlarged, making *hukou* perhaps the most crucial foundation for social and spatial stratification in China (Afridi et al., 2015), resulting in a kind of rural-urban “apartheid”.

Over the years, the *hukou* system has undergone several changes (Solinger, 1999). Most importantly, the latest policy measures on the integration of migrants have clearly shown the stratified *hukou* conversion based on the development of cities: “Fully removing *hukou* barriers for migrants to settle in medium and small cities (of no more than 3 million permanent residents), gradually removing

restrictions in large cities (of more than 3 million, but beneath 8 million permanent residents), and strictly controlling *hukou* conversion in megacities (of more than 8 million permanent residents) by cancelling the *hukou* conversion policy which previously supported rural migrants who had been living and working for more than five years. Their family members followed them while only allowing *hukou* conversion in the outskirts of megacities” (The CPC Central Committee and the State Council, 2014). This *hukou* conversion policy is in line with the fact that *hukou* values vary by regional development (Tian et al., 2018). Although the system has undergone reforms and has been gradually decentralised to vest the power to local governments (K. W. Chan & Buckingham, 2008), *hukou* conversion in cities, especially in large cities, is highly selective: targeting the educated, wealthy, and talented (Li et al., 2010).

Following Fan (2008), I distinguish between permanent migrants to cities (i.e., those who converted their *hukou* and now hold urban *hukou* status, and temporary migrants who have not (yet) been granted urban *hukou* status. The recent changes made to the *hukou* system, and new dimensions of inequality that have emerged from those changes, are analysed later in this chapter. I define a five-categorical *hukou* typology based on dual-classification of *hukou* attributes—the type of registration and place of registration as follows:

1. *Urban natives*, who currently live in a city where they were born and registered.
2. *Urban migrants*, who currently live in a city different from where they were born and registered.
3. *Rural migrants*, who hold rural *hukou* registration but now live in a city where is not the registered place of their *hukou*.
4. *Rural citizens*, who live in rural areas where they were born and their *hukou* were registered.
5. *Neo-urbans*, who currently hold an urban *hukou* registration from the city where they live, but who have obtained this via a *hukou* conversion process. Conversion is only available after moving to the city in question.

Dividing urban *hukou* holders into native or migrant is in line with the literature on “local citizenship”, which is at the heart of social redistribution in China (Smart & Smart, 2001). This typology also includes rural citizens in rural areas to provide a comprehensive view of financial inclusion in China, although this research focuses on financial integration in urban areas.

7.2.2 Financial inclusion and *Hukou*

Hukou, is an important institution in social inclusion in China (Afridi et al., 2015); its social division function has also been found to stretch into financial inclusion, especially under the global trend of financialisation. The mechanisms of how the *hukou* system shapes financial inclusion are two-fold as it shapes social inclusion, rural discrimination, and non-native discrimination, which in turn derives from the dual-classification of *hukou* attributes, *hukou* type (urban vs. rural) and *hukou* locality (native vs. non-native).

Being rural and nonlocal, migrants in cities are discriminated against because of several stereotypes, such as low education, poor etiquette, a lack of culture, and poverty (Yan, 2008; Wang, 2005; 2010), which causes strong prejudices in perceived social equality and the mental health of the rural-to-urban migrants (Chen, 2013; Deng & Law, 2020; Lin et al., 2011; Zhang et al., 2009). Although the *hukou* system has become more flexible and has enabled the migration of large population flows towards cities and developed areas, rural-to-urban or intra-urban, rural migrants are still excluded from the social benefits of the *hukou* system (Wu & Treiman, 2007). Many studies have documented that non-local *hukou* holders in large Chinese cities experience multiple sources of discrimination. This includes: having no or little access to welfare benefits from the local government (Song, 2014; Wang et al., 2015; Y. Huang & Guo, 2017); experiencing labour market discrimination, especially in high-wage industries; (Song, 2014), being turned down from job applications; or being paid less than average (L. Z. Chen et al., 2018).

The institutional exclusion of social resources based on *hukou* has extended to financial institutions not only for rural migrants but also for non-locals. For both types of migrants, barriers have been established to prevent them from opening bank accounts or obtaining loans, among other things. For non-locals, discrimination is subtler, as it develops when citizens internalise *hukou* segregation and the reinforced value of *hukou* locality. The rural-urban division has led to general social discrimination against the “outsider” (exemplified, for instance, by a non-native accent(s) and/or cheap attire) (Wang, 2005; 2010). The *hukou* system has become such a social marker that it is even possible to suggest that *hukou* resembles race in the sense that, like race, *hukou* functions as a basis for social discrimination and exclusion. These resemblances are based on two main characteristics. First, *hukou* is passed down from parents to children, and *hukou* conversion is very difficult and rare (Li et al., 2010). Second, *hukou* is not only registered in an official document but is also identified through individuals’ symbolic characteristics such as lifestyles, tastes, and language (Yan, 2008 ; Qian & et al., 2012), which have been distinctively different between urban and rural citizens after decades of (dis)advantaged accumulation.

Based on the literature above, the hierarchical structure of *hukou* is plotted as displayed in Figure 7-1. As shown, urban natives are the most institutionally advantaged; neo-urban *hukou* holders may possibly face one or two instances of discrimination before their *hukou* conversion and should then be theoretically equally included as urban natives. Urban migrants come second in the rank as they could face non-native discrimination, followed by rural migrants in the cities and rural citizens in the rural areas.

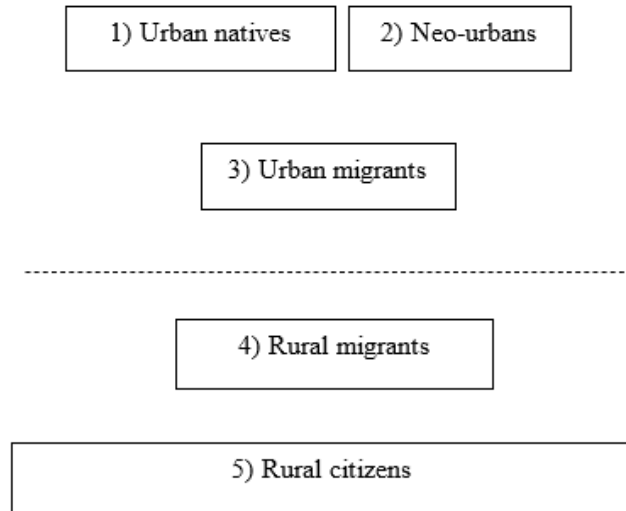


Figure 7-1 Example structure of *hukou* hierarchy

Rural discrimination based on type of *hukou* and non-native discrimination derives from locale of *hukou* have been intensified by *hukou* reforms and decentralisation policy, which is further explained later. The intersectionality of two important attributes of *hukou*, type and locale of *hukou*, has become the source of creating different modes of privilege and discrimination. This could be revealed by the hierarchical relationship between different *hukou* holders regarding financial inclusion, as suggested by Figure 7-1. Hence, this chapter assumes that rural natives are better off than rural migrants because they have only experienced rural discrimination. In contrast, rural migrants bear dual impediments—being neither urban nor native, and therefore, rural migrants are at the lowest tier of financial inclusion in cities. Thus, the following research hypothesis is posited:

Hypothesis 7-1: The level of financial inclusion is determined by the *hukou* hierarchy via institutional barriers and non-local discrimination mechanisms.

This hypothesis suggests that, after controlling for other covariates, neo-urban dwelling households are more likely to enjoy the same financial inclusion level compared to urban native households in a specific area. In contrast, urban migrant families are less included, followed by rural native households, and rural migrants as the least included.

7.2.3 *Hukou*, city and province development, and financial inclusion

Decentralisation has been reported to be highly beneficial for economic growth in China (Feltenstein & Iwata, 2005). Local governments gain more power and freedom with their own fiscal expenditure, leading to more diversified economies and relatively self-interested local accountability and regional disparities (Tsui & Wang, 2008). However, more diversified economic development at the city and province levels has strengthened the instrumental function of *hukou* in social stratification, i.e.,

the value of the registered place of *hukou* (Tian et al., 2018). Simultaneously and parallelly, the Chinese *hukou* system has experienced institutional changes.

City-oriented development strategies and decentralisation of central government have stratified the value of *hukou*. Wang (2005) categorised this development as such: *hukou* in the municipal and capital cities at the top, followed by those in large cities in other provinces, then the county-level ones, and the rural regions at the bottom. Likewise, Gong (2005) argues that the *hukou* system can be portrayed in the shape of a pyramid, with rural *hukou* at the bottom, urban *hukou* from megacities at the top, and other urban *hukou* from large cities in between. This more stratified *hukou* system makes rural-urban integration even harder. Migrant populations in Chinese cities, especially in large cities, confront the most stringent barrier to entry and settling down requirements (Wang, 2005). Thus, *hukou* as a discriminative social marker has strengthened in large cities.

Empirical evidence finds that migrants prefer large cities over small ones for two main reasons. First, from an economic perspective, large cities offer better job opportunities, infrastructure, and facilities than small cities (Wang, 2005). Second, from a cultural perspective, for migrants, large cities represent a higher level of modernity and prosperity than small cities (Ying Liu et al., 2018). However, according to the latest migration policy mentioned above—making *hukou* more accessible in medium-sized and small cities has not tackled the mismatch between the supply and demand of regarding job opportunities and social services (Chen & Fan, 2016).

The concentration of migrants in large cities, especially in prefectural cities, can directly lead to a decreased share of public services for all *hukou* citizens, directly increasing the tensions between the urban and the rural (Chen, 2013; Deng & Law, 2020). Indeed, scholars have found that migrants in large cities have reported stronger resistance and discrimination from settled citizens (Song, 2014; Wang et al., 2015; Y. Huang & Guo, 2017). Meanwhile, to maximise economic development brought by migrant labours and to minimise costs of social services for migrant labours, local governments, especially in large cities, have actually decreased the quota of *hukou* conversion, using stricter conditions making the process for *hukou* conversion longer (Chan, 2010). This is consistent with Tuner's concerns (1999) – “*Nation-states no longer adequately provide citizenship for their members and instead we have a growing war of megacities and mega-economies against each other*” (p.274).

That financial markets mature with economic development, thereby becoming more inclusive and open, might not be the case in China. *Hukou* is a strong determinant for financial inclusion, and how *hukou* is associated with financial inclusion is modified by economic development, with moderating effects consistent with *hukou* hierarchy—potentially another source of intersectionality. Although more financial services and better consumer protections are provided in more developed cities and areas (Z. Wong et al., 2021), socially less included individuals and households, migrants and especially rural migrants in China, can find it more challenging to be financially included in large cities. Based on this, I propose the second hypothesis:

Hypothesis 7-2: Although economic development at the province and city level can increase financial inclusion, not all hukou holders can benefit from economic development.

7.3 Data and research methods

7.3.1 Data

The data for research is from the 2013 China Household Financial Studies (CHFS), carried out by the Southwestern University of Finance and Economics in China and sponsored by China Bank. As a nationally representative survey and ground-breaking project, the information spans from housing and financial assets, household income and wealth, liabilities, and credit restraints, to participants' sociodemographic characteristics, attitudes, and experiences of financial participation.

Based on CHFS 2013, the analytical sample includes households that are active in financial participation, including having a bank account from a legal bank or organisation; having savings; having financial investments; having ever purchased commercial insurance; and having access to formal credits. The final analytical sample is N= 24034 urban households with household heads above 18. This age group is selected because 18 is the minimum age to apply for a bank card. Restricted by the survey, financial activities are measured on the household level, the *hukou* type of a household is defined by the *hukou* status of the household head.

7.3.2 Variables

Dependent variables

As financial inclusion is determined by both the demand and the supply side, how much a household is financially included is measured by three aspects: *access*—the supply of financial services, *awareness*—financial literacy and willingness of households, and *use*—the consumption of the exact financial services. This study focuses on the *use* of financial services, with *awareness* measured as financial literacy controlled in the research models. *Access* is not included in the survey; however, socio-economic development can work as the proxy of *access*. This is one of the reasons to use multilevel modelling.

Use of financial inclusion is captured as six binary indicators: first, having a bank account (*formal account*); second, having savings in formal financial institutes (*formal saving*); and third, financial activities involvement (*financial investment*). This final indicator was restricted to the secondary capital market in this study which included: stocks, bonds, funds, financial derivatives, and other profit-generating products. If the household claimed to have participated in at least one of the listed items, *financial investment* was coded as 1, and 0 otherwise. As studies reported, social insurance was insufficient to alleviate financial risks (Dou et al., 2018), and commercial insurance could supplement social protection schemes against financial risks (Choi et al., 2018). Commercial insurance

engagement (*commercial insurance*) is here included as the fourth indicator. It is captured as a binary variable if households have one of the listed items: life insurance, health insurance, pension insurance, and property insurance. Households were asked if they possessed any activated credit cards or loans from bank/formal financial institutions for business, agricultural production, housing, cars, education, and medical treatments. If any list items were mentioned, inclusion of *formal credit* was coded 1 and 0 otherwise. If households had borrowed money from their social networks for any of the listed purposes, *informal credit* is coded as 1 and 0 otherwise. As informal financial inclusion plays an important role in China (Chai et al., 2019), *formal credit* and *informal credit*, two sides of the same coin, combined can better reveal credit use.

The composite index of financial inclusion. A composite index of financial inclusion (*financial inclusion* hereafter) was created based on Cronbach's Alfa (alpha value=0.65) of the first five indicators of household financial inclusion. Loadings of the five components and the alpha values are displayed in Table 7-1. The Cronbach's alpha of the five items is lower than 0.80, indicating that the composite index is far from ideal. But using a composite index has its merit: it provides an overview of household financial inclusion in China and related factors.

Table 7-1 Cronbach alpha and loadings of components measuring financial inclusion

Item	N	Sign	Item-test correlation	Item-rest correlation	Average interitem covariance	alpha
<i>Formal account</i>	24034	+	0.836	0.667	0.027	0.459
<i>Formal saving</i>	24034	+	0.752	0.495	0.035	0.562
<i>Financial investment</i>	24034	+	0.536	0.324	0.056	0.641
<i>Commercial insurance</i>	24034	+	0.437	0.245	0.063	0.666
<i>Formal credit</i>	24034	+	0.620	0.346	0.049	0.637
Test scale					0.046	0.657

Categorisation of the independent variables

Hukou hierarchy. It is captured by the household head's current *hukou*, presented as five categories: urban native, neo-urban, urban migrant, rural migrants in urban areas and rural citizens who are rural *hukou* holders in the rural areas as discussed previously. I included the last *hukou* type into the studies so as to provide an overall view to the *hukou* types in China and to compare the financial inclusion between the *hukou* holders in urban and in rural areas.

City and province development. The mean of the household assets of a city within a province is used as a proxy measure of city development since households in more economically developed cities are more likely to be wealthier. The rationale to use household wealth as the proxy is due to the CHFS survey team withholding information beneath the province level. The ID of the cities are invented ones, which cannot be used to pin down economic development of cities by merging census data. To create

city development involves two steps: first, a three-categorical city development based on household wealth is created. Second, cross-tabulation is used to investigate whether it is statistically reasonable to keep the measure as a three-scale variable. As no statistical significance is found between the second and third rank, city development is further coded into binaries, with large cities referring to cities at the 1st rank and small cities referring to the rest. Similarly, province development based on GNP per capita in 2013 is coded as a binary variable, with large provinces (ranking between 1st-10th) coded as 1 and small provinces (ranking between 11th - 29th) as 0.

Covariates

Financial literacy. It measures the *awareness* of financial inclusion. Studies have shown that financial literacy and risk tolerance play essential roles in shaping individuals' and households' financial participation, losses and gains (Calvet et al., 2009; Van Rooij et al., 2011; Yao & Xu, 2015). Following Zhang and Yin (2016), who have used the CHFS dataset to study financial literacy and financial exclusion in China, I also use seven items available in the CHFS2013 questionnaire as the components to measure financial literacy. Detailed information and coding are displayed in Table 2 below. After rotation, the total proportion of variance of financial literacy explained by these two factors is 94%. With KMO value on each item larger than 0.6 as illustrated in Table 3, the data is suited to factor analysis (Kaiser, 1974). Factor 1 is used as a measure of financial literacy as most item loadings on Factor 2 are smaller than 0.3.

Table 7-2 The seven questions on financial literacy and the coding

Questions	Coding
Q1. "What is your degree of concern for economic and financial information?"	"extremely concerned", "very concerned", and "generally concerned" were coded as 1; the others were coded as 0.
Q2. "Have you ever taken economic and financial classes before?"	"Yes" was coded as 1 and "No" as 0
Q3. "What is your choice among combinations of risk and return"	"High risk, high return" coded as 1 and the others as 0
Q4. "Given a 4% interest rate, how much would you have after 5 years if you have 100 RMB at first"	"Exactly 120" was coded as 1 and the others as 0.
Q5. "With an interest rate of 5% and an inflation rate of 3%, after saving money in the bank for 1 year, can you buy more or less than last year".	"More than last year" was coded as 1 and the others as 0.
Q6. "What would you choose between a lottery with 100% shot at 4,000 RMB and another with 50% shot at 10,000 RMB".	Answers to "The latter" was coded as 1 and others as 0.
Q7. "Do you think stocks have greater risks than equity funds?"	Answers of "Yes" was coded 1 and others as 0.

Note. Questions are retrieved from CHFS2013 questionnaire

Table 7-3 Iterated principal-factor analysis of financial literacy

Items	Questions	Coding=1	KMO	Factor loadings (After rotation)	
				Factor 1	Factor 2
Financial knowledge	Q1	13.02%	0.642	0.413	0.121
	Q2	11.91%	0.642	0.432	0.107
	Q4	17.88%	0.662	0.115	-0.019
	Q5	17.46%	0.712	0.183	0.065
	Q7	41.07%	0.610	0.300	0.067
Risk preference	Q3	13.86%	0.683	0.139	0.305
	Q6	29.63%	0.638	0.290	0.309
Overall	-	-	0.647	-	-

Household demographic and SES factors. Except for household structure, household demographics are measured at the level of household head, including gender, age and age square, marital status, employment status, and political party membership. From the perspective of demand, wealthy households are more capable to engage in financial activities (Langley, 2008), controlling the financial status of households can produce better estimations of the association between financial inclusion and *hukou* hierarchy and city development. Household ownership, equivalised annual household income (in logarithm) (Paris: OECD, 2008), total household assets (in logarithm), and kinship ties (Chai et al., 2019) in the current residential city are captured as household SES.

7.3.3 Analytic strategies

In this chapter, I apply multilevel modelling to estimate the joint impact of the *hukou* hierarchy and city development on household financial inclusion, including two higher-level indicators: city development and province development. There are two outstanding benefits of using modelling higher-level effects. First, the endogeneity of data can be avoided, and second, the issues of spatial heterogeneity can be addressed through the random effects approach (Snijders & Bosker, 1999).

As for the analysing stage, firstly, I use the composite index of financial inclusion (based on five indicators) as the dependent variable in the multilevel linear modelling to provide an initial insight into the factors influencing financial inclusion. Secondly, I use multilevel logistic regression to investigate the association between *hukou* hierarchy and each of six indicators of financial inclusion. Thirdly, I apply interactions to investigate the cross-level association between *hukou* hierarchy and city and province. Original weights of the household drawn at the community level are compressed by its mean, with values larger than 2.5 and smaller than 0.5, and then included in the regressions. The total values trimmed occupy less than 6% of the sample size.

6.5 Discussion and Conclusions

With large-scale internal migration on the rise in China, the number of rural old people affected by the migration of their children is certainly increasing rather than decreasing. These rural elderly parents, as the ‘silent engine’ behind Chinese economic growth (Singapore Management University, 2016), deserve to live a happier and more supported old life.

Based on the data of CFPS (2010), this chapter found that the impact of adult children’s migration on rural elderly parents’ emotional health differed according to the type of migration relating to their adult children. In a significant contribution to the current literature, this chapter found that compared with rural elderly parents with *no* child migration, rural elderly parents with *any* of their financially co-dependent children having migrated experienced significantly higher levels of depression, rather than rural elderly parents with *all* migrated. The plausible explanation for this counterintuitive finding could be that these older parents did not determine their adult children to have lower filial piety after they had migrated (B. Luo & Zhan, 2012), and that’s why they mentally suffer less. Instead, that symbolic value of adult-child migration in rural China—rural-to-urban migration, the mobility itself, has been valued as high social status—households whose adult children have migrated to urban are both economically and socially better off than those who have not (X. Shi et al., 2010; Zhu & Luo, 2010; Ye Liu et al., 2015; Lu, 2022). The increased intergenerational subjective social mobility due to migration is in line with filial practises –bringing honour to the family and making parents proud (Deutsch, 2006). Thus, as a result, rural elders with all their children having migrated are mentally better off, although the separation and loneliness are detrimental to their mental health and wellbeing, and it takes more time for elders with all their children out-migrated to recover their mental health and wellbeing level.

Whereas, when it comes to wellbeing, both groups of rural elderly parents with *any* or *all* migrant children reported significantly lower levels of wellbeing than rural elderly parents with *no* migration. This reveals that possibly filial piety still plays a large part in wellbeing as these old rural parents are still possibly holding onto the same preference of household living arrangements, values, and attitudes of filial piety like other rural elderly parents (Silverstein, Cong and Li 2006; Ren and Treiman 2015). This explains why their wellbeing decreased as long as they have migrant children.

Interestingly, the effects of caregiving on depression varied by the type of adult child migration. Childcare can decrease the depression of rural elderly parents with *any* migrant children but not for those with *all* children migrated. This supports previous findings that rural elderly parents living in three-generation families have better mental health than those living in SGHs (Ren & Treiman, 2015; Wen et al., 2019); providing childcare can be harmful to rural older persons’ emotional and cognitive health if overloaded (Silverstein & Zuo, 2020), especially for those rural elders who have more farm work after adult child migration (Du et al., 2004; Chang et al., 2011).

Effects of childcare on wellbeing were consistent regardless of the adult child migration type. It could be explained that older parents who took care of grandchildren evaluated themselves with higher filial piety (B. Luo & Zhan, 2012), and caregiving does positively increase the psychological wellbeing of rural grandparents (Cong & Silverstein, 2008). Besides, this chapter found receiving economic support from adult children cannot decrease rural elderly parents' depression level, whereas it can significantly increase the level of wellbeing. In addition, in this chapter, the finding that mental health and wellbeing of rural elderly parents were highly associated with living resources (personal income, medical insurance, and old age pension), is in line with the findings mentioned by Biao (2007). Hardships are fundamentally caused by the left-behind social and economic development in many rural communities, and migration is a tool used to overcome poverty (Y. Du et al., 2005).

This study, however, is limited in the following aspects. First, due to the survey constraints, this chapter has not investigated the role of family reunions. It's very likely that rural elderly parents, whose migrant children come back home regularly for family getting-together, would have better emotional wellbeing compared to those whose migrant children have never come back since moving away. Second, as the survey did not investigate rural older persons' opinions on filial piety, this chapter cannot directly explore how filial piety has played on rural parents viewing their adult children's migration. If future surveys can include both the old and young generation's opinions on filial piety, more fruitful research can be produced on the ways of how economic development has reshaped a society's traditional culture through the younger generations' migration and modifications to family values.

Therefore, this research advocates for longitudinal social surveys covering filial piety to shed light on how cultures and traditions are shaped and reshaped by modernity and the social consequences. Last, excluding economically independent and permanent migrant children in the investigation because of CFPS survey design could lead to a potentially biased interpretation of research findings in this chapter. It's very likely that both the economically independent and permanent migrant children are continuously providing both instrumental and emotional support to their rural elderly parents, leading to overestimated effects of migration on emotional health. It is also possible that the association between migration and emotional health is underestimated if economically independent and permanent migrant children are not providing enough support to the rural elders left behind. That is, the unknown filial practices of children who are economically independent could modify the association between migration and the emotional health of elders.

Despite these limitations in the dataset, the present study is one of the few that has empirically investigated the temporal dimension of the emotional impact of adult-child migration on rural elders' emotional health, disaggregated by migration type. This study has shed some light on the understanding of how family life and emotional wellbeing of rural elders have been strongly influenced by societal change in the Chinese social and cultural context – the economic reform and internal migration since

the late 1970s. As for how to maintain the balance (or a healthy relationship) between material-oriented resources and the emotional wellbeing of family members because of migration, this chapter suggests that, fundamentally, the central government should invest more in less-developed areas, creating more job opportunities to accommodate rural surplus labours. This could largely diminish the scale and duration of migration while still allowing young rural generations to earn material-oriented resources for the family. If migration is unavoidable, more social support and social resources should be given to the rural elders, especially to those who are experiencing long-term children's migration and those who are left behind.

7.4 Empirical Results

7.4.1 Descriptive results

Table 7-4 displays the descriptive statistics of the independent variables by *hukou* hierarchy. As shown, household financial inclusion in urban areas overwhelmingly exceeds that in rural regions on each indicator of financial inclusion, and financial inclusion is neither widespread nor equally distributed among the different *hukou* holders in cities. Meanwhile, like two sides of a coin, the pattern between rural and urban areas on formal and informal credit inclusion also reveals a relatively low level of financial inclusion in rural areas.

According to the descriptive statistics of the research sample, it is urban migrants who are the most financially included based on the composite index of financial inclusion as well most of the indicators, except *financial investment*. Compared to urban natives, neo-urbans are apparently less included on *formal account* and *financial investment*, with gaps ranging between 6% and 9%. Their inclusion of *formal saving* and *formal credit* is close, but neo-urbans are more reliant on *informal credit*. Rural migrants are the least financially included on all the indicators in urban areas, but they outweigh their rural counterparts in rural regions on all the measures and are less reliant on *informal credit*. Based on the descriptive analysis, the inclusion hierarchy based on *hukou* are urban migrants, urban natives, neo-urbans, rural migrants, and rural citizens. This descriptive analysis, however, is without the control of demographics and SES indicators. The residential distribution of *hukou* holders is apparent at both the city and province levels, which is in line with research findings that megacities and developed areas are the most preferred by migrants. In this sample, the developed provinces (10/31) hosted approximately 90% of the urban migrants and more than 50% of the rural migrants, which are also the main destinations of the neo-urbans who have converted their *hukou* registration.

Household demographics and SES characteristics differentiate among different *hukou* holders. The two types of migrant households are younger than other *hukou* holders. Urban migrants were more educated, with a higher financial literacy, followed by urban natives and neo-urbans. Urban natives and neo-urbans stand out on party membership, followed by urban migrants. The two rural *hukou* holders were the least educated, with the least amount of financial literacy, although rural migrants were slightly better off. Regarding employment, more household heads of the three urban *hukou* types were employed, whereas urban and rural migrant households stand out for being self-employed. Other household SES characteristics suggest that urban migrants can be wealthier than urban natives, given their family income is higher than urban natives, with very similar scores on household assets. Rural migrants reported higher levels of kinship ties than urban migrants (60.3%) in cities, as rural migrants are more reliant on social networks (L Zhang, 2001).

Table 7-4 Descriptive statistics of key variables by *hukou* hierarchy and the urban-rural divide

Variables	Urban			Rural	
	Urban natives	Neo-urbans	Urban migrants	Rural migrants	Rural citizens
Financial inclusion					
Composite index (standardised)	0.373 (0.976)	0.270 (0.992)	0.617 (0.940)	-0.129 (0.932)	-0.472 (0.843)
Formal account	82.3%	76.3%	86.0%	62.0%	44.2%
Formal saving	67.7%	65.0%	74.1%	53.3%	36.7%
Financial Investment	25.5%	16.9%	20.9%	4.8%	0.9%
Commercial insurance	10.9%	10.9%	17.8%	8.0%	4.1%
Formal credit	32.3%	34.8%	51.9%	21.7%	15.4%
Informal credit	16.7%	26.2%	18.3%	29.9%	36.2%
Macro-level variables					
Developed cities (<i>ref. less develop cities</i>)					
Developed Provinces (<i>ref. less developed provinces</i>)					
Age	53.844 (14.796)	48.328 (13.713)	39.441(14.811)	46.276 (14.464)	53.758 (12.390)
Male (<i>ref. Female</i>)	60.1%	62.5%	58.6%	70.7%	84.0%
Married (<i>ref. not married</i>)	83.3%	87.8%	70.6%	85.8%	89.4%
Education (<i>ref. primary</i>)					
High school	57.2%	52.5%	43.1%	58.6%	44.7%
University	32.8%	28.2%	51.3%	6.5%	0.7%
Job type (<i>ref. Not working since last year</i>)					
Employee	36.6%	45.9%	50.2%	30.5%	12.6%
Self-employed	6.3%	10.1%	16.4%	18.4%	4.5%
Farmer	0.2%	2.3%	0.2%	18.2%	62.8%
Other	2.3%	3.6%	4.7%	7.0%	3.8%
Party member (<i>ref. no</i>)	27.3%	23.7%	17.5%	8.1%	9.7%
Financial literacy	0.185 (0.665)	0.120 (0.625)	0.351 (0.731)	-0.082 (0.491)	-0.183 (0.402)
Kinship (<i>ref. no kinship in the residential area</i>)	88.0%	85.7%	60.3%	81.0%	80.7%
Household structure (<i>ref. Mid-generation only</i>)					
Nuclear family	47.2%	52.6%	39.5%	48.6%	41.8%
Extended family	18.4%	26.2%	15.2%	28.6%	36.1%
House ownership (<i>ref. owned</i>)					
Rented house	13.6%	11.6%	55.1%	69.2%	1.2%
Other types	5.3%	4.3%	9.3%	7.6%	3.6%
Equivalised log(household income)	1.045 (0.714)	0.855 (0.734)	1.235 (0.939)	0.543 (0.838)	0.247 (0.748)
Equivalised log(household assets)	1.769 (1.682)	1.451 (1.511)	1.798(1.786)	0.896 (1.572)	0.347 (1.397)
N	7738	2738	808	5393	7357

7.4.2 Multilevel linear regressions predicting the composite index of financial inclusion

The investigation of *hukou* hierarchy and financial inclusion start from the multilevel linear regressions in Table (5), using the composite financial inclusion index as the dependent variable. Model (1) is the base model, with the *hukou* hierarchy variable only; Model (2) adds demographics and SES indicators measured by the household heads, including age, gender, marital status, household structure, educational attainment, job type, and party membership. Model (3) includes financial literacy; Model (4) includes SES factors measured at the household level, including kinship networks, house ownership, household income, and total household assets. In Model (5), city and province development are included. Interactions between *hukou* and economic development are added to Model (6) and (7).

This gradually built-up modelling allows the investigation of trends and dynamics of the variables of interest. To provide a tangible way to understand the association between financial inclusion and *hukou*, hierarchy marginal values (Average Marginal Effects) of inclusion index by *hukou* hierarchy from Model (1) to Model (7) are plotted in Figure 7-2. As illustrated from Model (1) to Model (2), the inclusion disparity among *hukou* holders has largely decreased when demographics and SES indicators measured at the household head level are included. The inclusion of *financial literacy* in Model (3) has further decreased the disparity; one unit increase in financial literacy can significantly lead to a 32.8% increase in the SD of the index, as displayed in Table 7-6. This suggests the significant association between financial literacy and financial inclusion, and also financial literacy as a strong factor for financial inclusion. Still, inclusion disparity based on *hukou* remains. As other household SES indicators are included in Model (4), the disparity between urban *hukou* holders has disappeared, and although the disparity between rural and urban has fanned in, it remains significant. This indicates that financial inclusion variation can be largely explained by the variation in demographics, financial literacy, and household SES indicators.

Model (5) and Model (6) together reveal that although human capital and household wealth can explain the disparity of financial inclusion based on *hukou* hierarchy, the distinctive effects of *hukou* remain. The inclusion of city and province development (in Model (5)) does not modify the disparity between different *hukou* holders, as the coefficients of the *hukou* hierarchy in Table (5) remain nearly unchanged. Nevertheless, living in large or small cities matters, as the marginal value of inclusion index in Model (6) has dropped about 10% as shown in the figure. Urban migrants living in large cities are about 26.4% of an SD more financially included than their peers in small cities as displayed in Table (5). Also, estimates in Table (6) suggest that urban migrants, rural migrants, and rural citizens are about 28.3%, 19.4%, and 19.4% of an SD lower of the inclusion index than urban natives. Also, it is worth noting that rural migrants are no more included than their peers in rural areas, supporting the fact that migration may not directly benefit migrants (L. Li et al., 2010).

Table 7-5 continues

Interactions																
Neo-urbans #Large cities																
Urban migrants # Large cities																
Rural migrants # Large cities																
Rural citizens # Large cities																
Neo-urbans #Large provinces																
Urban migrants # Large provinces																
Rural migrants # Large provinces																
Rural citizens # Large provinces																
Constant	0.222***	(0.046)	-0.026	(0.066)	-0.057	(0.063)	-0.251***	(0.071)	-0.327***	(0.084)	-0.336***	(0.091)	-0.044	(0.048)	-0.044	(0.048)
													0.269**	(0.105)	0.269**	(0.101)
													-0.010	(0.058)	-0.010	(0.059)
													-0.021	(0.062)	-0.021	(0.064)
													-0.002	(0.052)	-0.002	(0.052)
													-0.105	(0.075)	-0.105	(0.075)
													-0.073	(0.048)	-0.073	(0.048)
													-0.039	(0.067)	-0.039	(0.067)
													-0.346***	(0.095)	-0.346***	(0.095)
Random-effects																
Var (Province economic development)	0.013	(0.005)	0.016	(0.006)	0.017	(0.005)	0.009	(0.003)	0.009	(0.003)	0.008	(0.003)	0.009	(0.003)	0.009	(0.003)
Var (city economic development)	0.071	(0.015)	0.050	(0.010)	0.045	(0.009)	0.036	(0.007)	0.032	(0.006)	0.032	(0.006)	0.032	(0.006)	0.032	(0.006)
Var (residual)	0.764	(0.015)	0.656	(0.011)	0.632	(0.010)	0.585	(0.009)	0.585	(0.009)	0.585	(0.009)	0.584	(0.009)	0.584	(0.009)

Note. N=24034; Standard errors of the fixed effects in parentheses; * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. For random effects, variances are reported, bold format indicates that the CI of variation does not cover zero; Number of Province=29, Number of cities=167.

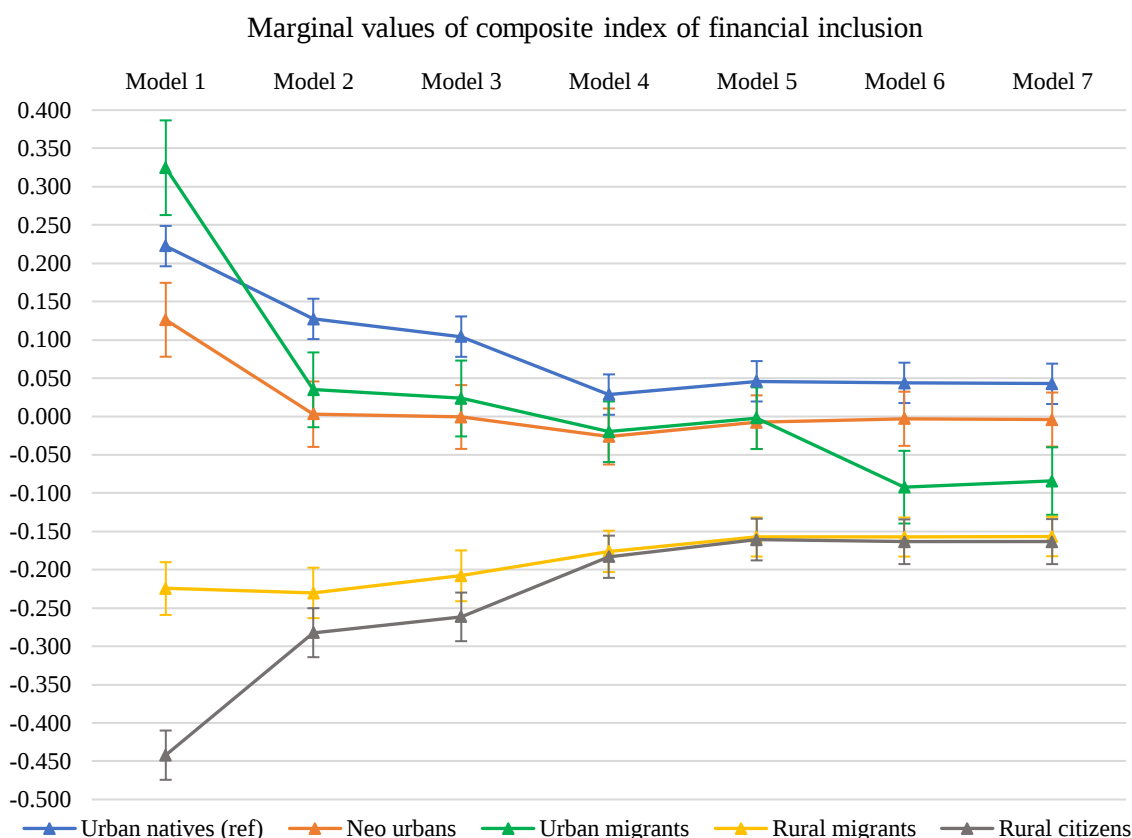


Figure 7-2 Household financial inclusion (composite index) by *hukou* hierarchy

These findings remain almost unchanged in Model (7). Changes in the inclusion index by *hukou* hierarchy from Model (1) to Model (7) suggest that there are four sources of financial inclusion disparity: demographics, financial literacy, SES indicators, and the *hukou* division.

Results in the full model suggest that financial inclusion is in line with the *hukou* hierarchy hypothesised by the literature displayed in Figure 1: urban natives are the most included, followed by neo-urbans and urban migrants, with the two rural *hukou* holders at the bottom. Based on the investigation of the index of financial inclusion, *Hypothesis 1*, that financial inclusion varies according to the hierarchical *hukou* typology cannot be rejected, and the statistics suggest that the mechanism to explain the inclusion distinctions between different *hukou* types are due to both rural discrimination and the non-local discrimination. *Hypothesis 2* is partly rejected, given that city development is significantly associated with financial inclusion but not province development.

Household demographics and SES variables, especially education, employment, party membership, kinship networks, household income and assets, are significantly correlated with financial inclusion. Two macro levels can explain the variation in household financial inclusion given the significance of the random effects; a smaller AIC from the multilevel regression than the AIC from OLS regression also suggests multilevel modelling is a better choice.

7.4.3 Multilevel logistic regressions predicting financial inclusion

Table 6 displays the results of multilevel logistic regression on each indicator of financial inclusion, based on the same modelling setting of Model (7) predicting the composite index, which does not suggest a very high level of internal consistency (Cronbach's Alpha <0.70).

Statistics from multilevel logistic regressions suggest that compared to urban natives, other *hukou* holders are less financially included, although it varies by the specific aspect of financial inclusion. For *formal account*, estimates suggest that rural *hukou* holders are less included, regardless of whether they are migrants or not. As shown when covariates are controlled, the odds of neo-urbans (OR=0.982, $P>0.05$), urban migrants (OR=0.442, $P<0.05$), rural migrants (OR=0.615, $P<0.05$), and rural residents (OR=0.637, $P<0.05$) are all smaller than that of urban natives, but only rural households show statistically significant differences on this aspect. Similarly, the same pattern is also found in *formal saving*, whereas the two urban *hukou* holders, regardless of being migrants or having obtained the local *hukou*, no statistical differences are found when compared to urban natives.

For *financial investment*, rural migrants, and rural citizens are found to be approximately 26%, 66%, and 82% - significantly lower in the odds of being engaged than urban natives. Urban migrants demonstrate about 20% higher in the odds of being included than urban natives, which however, is not statistically significant. This suggests that the differences between rural and urban are more apparent than being a native or migrant. For *commercial insurance*, none of the *hukou* types display any significant difference with urban natives, although the statistics suggest that except for rural migrants, the rest three *hukou* holders are slightly less included regarding *commercial insurance*. The plausible explanation could be that the insurance system in China is still underdeveloped, although the demand is high (Akhter et al., 2020). Compared to urban natives, other *hukou* holders all display lower odds of inclusion in *formal credit*, which is only significant for urban migrants (OR=0.570, $P<0.01$) and rural migrants (OR=0.811, $P<0.05$), not neo-urbans and rural citizens. Whereas for *informal credit*, except urban migrants, the other *hukou* holders are statistically more included than urban natives.

Both city and province development impose significant influence on household inclusion. Specifically, compared with households living in small cities, households in large cities are more likely to be included and less reliant on *informal credit*. The increased odds in being included to *formal account*, *financial investment*, and *formal credit* are about 43%, 82%, and 37%, respectively. The decreased reliance on *informal credit* (about 34%) is in line with the inclusion of increased inclusion of *formal credit* in large cities. Households in more economically developed provinces are more included, especially on *financial investment* (OR=1.373, $P<0.05$) and formal credit (OR=1.381, $P<0.05$), and less reliant on *informal credit* (OR=0.753, $P<0.05$). Random effects coefficients on province and city development are systematically significant on the six financial inclusion indicators, suggesting that the

variations of financial inclusion on each aspect can also be explained by the development difference of the two macro levels, especially on the city level.

Trends and dynamics of the predicted probability of inclusion on each indicator is also provided to make it visually comparable to the composite index. As shown in Figure 7-3, trends of the predicted probability of *formal account* and *formal saving* are the closest to that of the composite index: gaps between *hukou* holders gradually fan in with the inclusion of demographics, financial literacy, and SES indicators, and stabilised with the inclusion of macro-level development indicators. The disparity among *hukou* holders becomes much smaller in the full model, but *hukou* is still significant in explaining the disparity, especially for *formal account*.

For *financial investment* and *commercial insurance* (in Figure 7-4), the patterns differ from each other and the inclusion index. For *financial investment*, both rural-urban and native-non-native divides are significant, which also remains significant with the inclusion of city and province development. But the disparity in *commercial insurance* among *hukou* holders has largely disappeared with the inclusion of demographics and SES measured at the household head level. Lastly, for *formal credit* and *informal credit* (in Figure 7-5), the gap of *formal credit* between urban *hukou* holders has largely diminished once demographics and SES indicators are included, and urban migrants are no longer the most included once city development is included. The disparity between the urban and rural remains on *formal credit*, which, however, is small. The reliance on *informal credit* among the five *hukou* holders is the opposite of their reliance on *formal credit*. Above all, the significance of the main effects of *hukou* hierarchy on *formal account*, *formal saving*, *financial investment*, and *informal credit* suggest that *Hypothesis 7-1* cannot be rejected. Given that both city development and province development can increase the level of inclusion of *financial investment* and *formal credit* while decreasing the reliance on *informal credit*, *Hypothesis 7-2* cannot be entirely rejected.

Table 7-6 Multi-level logistic regression predicting financial inclusion by each indicator (Odds Ratio, Based on MODEL (7))

	Formal Account		Formal Saving		Financial investment		Commercial insurance		Formal credit		Informal credit	
Hukou (<i>ref. urban native</i>)												
Neo-urbans	0.962	(0.113)	0.945	(0.103)	0.810 [!]	(0.099)	0.940	(0.135)	1.075	(0.139)	1.283 [*]	(0.158)
Urban migrants	0.520[*]	(0.155)	0.565[*]	(0.151)	1.448	(0.546)	0.458	(0.354)	0.633	(0.187)	1.283	(0.384)
Rural migrants	0.590^{***}	(0.065)	0.581^{***}	(0.078)	0.331^{***}	(0.056)	1.223	(0.193)	0.971	(0.111)	1.282^{**}	(0.104)
Rural citizens	0.600^{***}	(0.075)	0.518^{***}	(0.062)	0.136^{***}	(0.047)	1.008	(0.146)	1.158	(0.170)	1.495^{***}	(0.125)
City development	1.425[*]	(0.250)	0.927	(0.150)	1.816^{***}	(0.193)	1.204	(0.179)	1.366^{**}	(0.162)	0.662^{***}	(0.083)
Province development	1.194	(0.277)	0.999	(0.177)	1.386[!]	(0.257)	1.108	(0.151)	1.381[*]	(0.203)	0.581^{**}	(0.104)
Interactions												
Neo-urbans #Large cities	0.644[*]	(0.115)	0.916	(0.151)	0.945	(0.159)	1.190	(0.215)	1.073	(0.137)	1.064	(0.136)
Urban migrants # Large cities	1.923[!]	(0.658)	1.583	(0.483)	0.528[!]	(0.182)	3.535[!]	(2.492)	2.329^{**}	(0.759)	1.090	(0.347)
Rural migrants # Large cities	0.989	(0.184)	1.412[*]	(0.233)	1.177	(0.191)	0.911	(0.177)	0.818	(0.101)	1.354^{**}	(0.141)
Rural citizens # Large cities	0.906	(0.187)	1.561^{**}	(0.257)	1.093	(0.295)	0.897	(0.221)	0.774	(0.145)	1.234	(0.169)
Neo-urbans #Large provinces	1.026	(0.169)	1.150	(0.133)	0.988	(0.171)	1.076	(0.243)	0.763[!]	(0.115)	1.170	(0.185)
Urban migrants # Large provinces	0.826	(0.246)	1.165	(0.261)	0.598^{**}	(0.114)	0.905	(0.217)	0.761	(0.205)	1.423	(0.313)
Rural migrants # Large provinces	0.870	(0.170)	1.126	(0.183)	0.910	(0.160)	1.081	(0.215)	0.680^{**}	(0.084)	1.472^{**}	(0.191)
Rural citizens # Large provinces	1.022	(0.231)	1.381[!]	(0.245)	1.665	(0.641)	0.946	(0.193)	0.547^{**}	(0.127)	1.444[*]	(0.227)
Age	0.947 ^{***}	(0.009)	0.950 ^{***}	(0.009)	1.126 ^{***}	(0.012)	1.191 ^{***}	(0.032)	1.042 ^{***}	(0.013)	1.093 ^{***}	(0.011)
Age2	1.000 ^{***}	(0.000)	1.000 ^{***}	(0.000)	0.999 ^{***}	(0.000)	0.998 ^{***}	(0.000)	0.999 ^{***}	(0.000)	0.999 ^{***}	(0.000)
Male (<i>ref. Female</i>)	1.106 [*]	(0.048)	1.095 [*]	(0.043)	0.960	(0.033)	0.828 ^{***}	(0.046)	0.920 [!]	(0.045)	1.034	(0.049)
Married (<i>ref. not married</i>)	1.266 ^{**}	(0.098)	1.288 ^{***}	(0.081)	1.438 ^{***}	(0.120)	0.861 [!]	(0.076)	1.342 ^{***}	(0.081)	1.108 [!]	(0.064)
Household structure (<i>ref. Mid-generation only</i>)												
Nuclear family	1.044	(0.059)	1.012	(0.039)	1.486 ^{***}	(0.116)	0.948	(0.081)	1.855 ^{***}	(0.097)	1.723 ^{***}	(0.098)
Extended family	1.073	(0.066)	1.034	(0.047)	1.571 ^{***}	(0.168)	0.992	(0.094)	2.092 ^{***}	(0.149)	1.708 ^{***}	(0.106)
Education (<i>ref. primary</i>)												
High school	1.510 ^{***}	(0.069)	1.453 ^{***}	(0.058)	2.214 ^{***}	(0.265)	1.678 ^{***}	(0.138)	1.201 ^{**}	(0.076)	0.872 ^{**}	(0.038)
University	2.809 ^{***}	(0.315)	1.496 ^{***}	(0.117)	3.194 ^{***}	(0.429)	2.434 ^{***}	(0.266)	2.629 ^{***}	(0.240)	0.773 ^{***}	(0.053)

Note. N=24034; For the fixed effects, the coefficients are reported in OR; Standard errors of the OR in parentheses. ^{*} $p < 0.05$, ^{**} $p < 0.01$, ^{***} $p < 0.001$. For random effects, variances are reported, bold format indicates that the CI of variation does not cover zero; Number of Province=29, Number of cities=167

Table 7-6 continues

Job type (ref. Not working since last year)												
Employee	1.059	(0.050)	1.216 ^{***}	(0.054)	0.920	(0.070)	0.847 [*]	(0.062)	1.195 [*]	(0.088)	0.995	(0.054)
Self-employed	1.314 ^{***}	(0.101)	1.112	(0.074)	0.883	(0.087)	1.440 ^{***}	(0.113)	1.724 ^{***}	(0.117)	0.561 ^{***}	(0.032)
Farmer	1.092	(0.083)	1.115 [!]	(0.071)	0.645 [*]	(0.141)	0.933	(0.105)	1.436 ^{***}	(0.113)	0.889 [*]	(0.051)
Other	1.316 [*]	(0.147)	1.434 ^{**}	(0.171)	0.875	(0.127)	1.478 ^{**}	(0.196)	1.249 ^{***}	(0.102)	0.733 ^{**}	(0.083)
Party member (ref. no)	1.378 ^{***}	(0.088)	1.297 ^{***}	(0.061)	1.119 [!]	(0.069)	0.957	(0.082)	1.249 ^{**}	(0.088)	0.947	(0.040)
Financial literacy	1.828 ^{***}	(0.093)	1.426 ^{***}	(0.057)	2.214 ^{***}	(0.070)	1.563 ^{***}	(0.051)	1.485 ^{***}	(0.058)	0.823 ^{***}	(0.028)
Kinship (ref. no kinship in the residential area)	1.152 ^{**}	(0.060)	1.090 [!]	(0.050)	1.290 ^{**}	(0.105)	1.163	(0.131)	0.949	(0.043)	0.999	(0.051)
House ownership (ref. owned)												
Rented house	1.334 ^{***}	(0.099)	1.501 ^{***}	(0.089)	1.094	(0.084)	0.757 ^{**}	(0.074)	1.068	(0.102)	0.864 [!]	(0.069)
Other types	1.349 [*]	(0.171)	1.461 ^{***}	(0.152)	1.357 ^{**}	(0.129)	0.830	(0.117)	0.956	(0.112)	0.780 [*]	(0.084)
Equivalized income	1.502 ^{***}	(0.052)	1.348 ^{***}	(0.049)	1.563 ^{***}	(0.105)	1.379 ^{***}	(0.072)	1.467 ^{***}	(0.071)	0.799 ^{***}	(0.019)
Log (household assets)	1.421 ^{***}	(0.029)	1.417 ^{***}	(0.036)	1.354 ^{***}	(0.049)	1.173 ^{***}	(0.030)	1.314 ^{***}	(0.031)	1.154 ^{***}	(0.023)
Constant	4.158 ^{***}	(1.075)	1.631 [!]	(0.428)	0.000 ^{***}	(0.000)	0.001 ^{***}	(0.001)	0.043 ^{***}	(0.015)	0.047 ^{***}	(0.014)
Random-effects												
Var (Province economic development)	0.116	(0.032)	0.120	(0.030)	0.061	(0.043)	1.63 ^{^33}	(5.09e ^{^32})	0.071	(0.036)	0.049	(0.023)
Var (city economic development)	0.245	(0.043)	0.249	(0.038)	0.154	(0.049)	0.202	(0.060)	0.227	(0.046)	0.262	(0.043)

Note. N=24034; For the fixed effects, the coefficients are reported in OR; Standard errors of the OR in parentheses. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. For random effects, variances are reported, bold format indicates that the CI of variation does not cover zero; Number of Province=29, Number of cities=167.

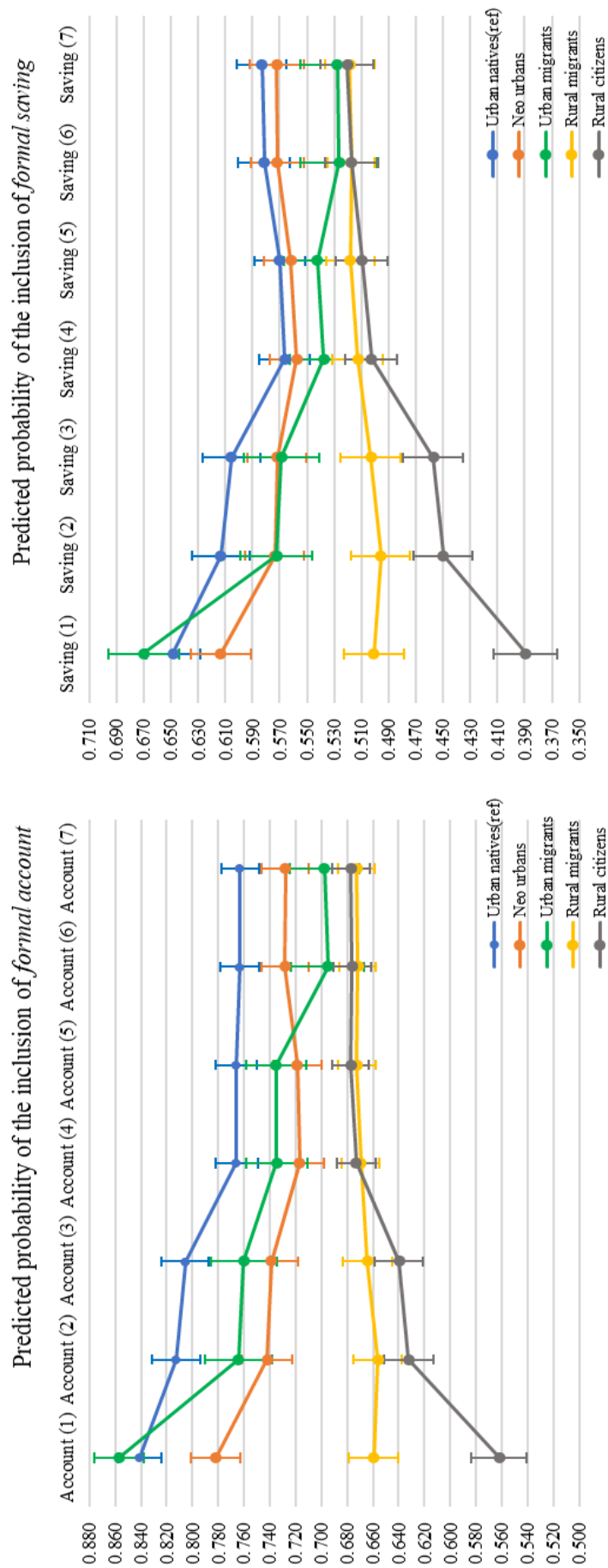


Figure 7-3 Predicted probability of inclusion of *formal account* and *formal saving*

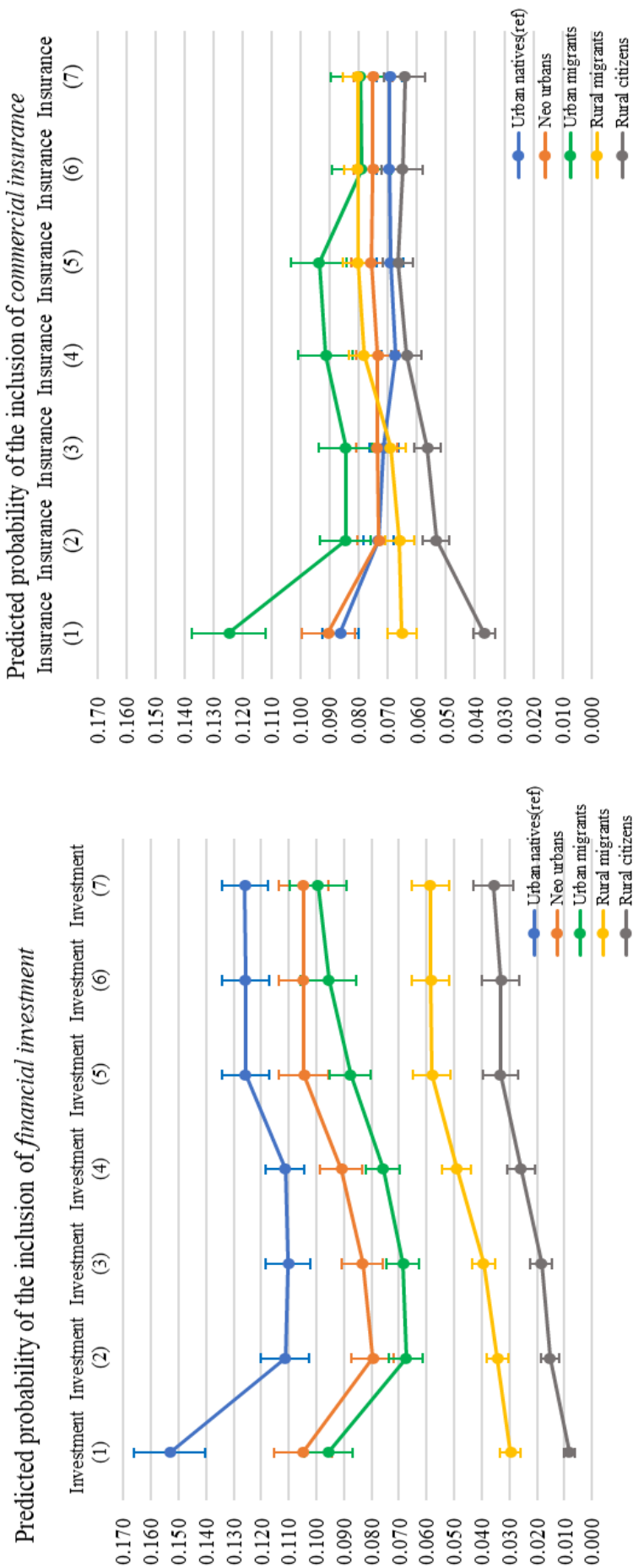


Figure 7-4 Predicted probability of inclusion of financial investment and commercial insurance

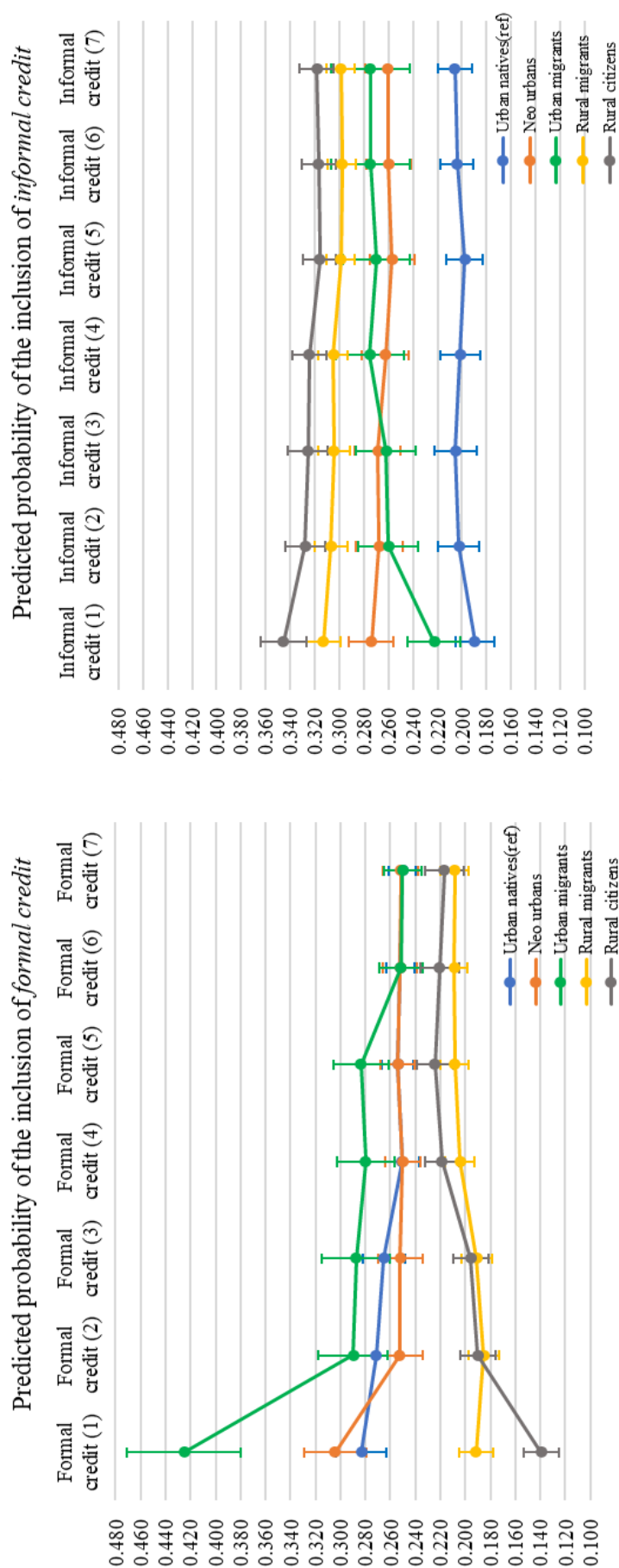


Figure 7-5 Predicted probability of inclusion of *formal credit* and *informal credit*

7.4.4 Inspecting the cross-level effects on financial inclusion

Estimates in the multilevel logistic regressions (Table 7-6) suggest that all types of *hukou* holders living in large cities are more included, and the modifying effect varies by *hukou* types as well as financial inclusion indicators. To provide a tangible way to approach the cross-level effects, figures of the predicted probability of inclusion of the six indicators are displayed in Figure 7-6, 7-7, and 7-8.

Starting from the two traditional financial inclusion items, as shown in Figure 7-6, urban natives, urban migrants, and rural migrants when living in large cities and rural citizens living in rural areas administrated by large cities, their inclusion of *formal account* is significantly higher than their peers in small cities. The positive modifying effects of city development are the most significant for urban migrants; that is, urban migrants benefit the most from living in large cities regarding the inclusion of *formal account*. By contrast, living in large cities does not lead to higher inclusion for neo-urbans; instead, they are relatively less included than the other two urban *hukou* holders, sharing no significant difference with rural migrants or rural citizens in rural areas. However, the modifying effect of city development on formal saving is different. The inclusion of *formal saving* has been significantly increased for the two migrant households and rural citizens; the disparity on *formal saving* between local *hukou* holders and those do not disappear in large cities. No significant modifying effects of province development is found on *formal account*; only positive modifying effect can be found on rural citizens regarding *formal saving*.

Regarding the inclusion of *financial investment* and *commercial insurance*, the two indicators requiring a certain amount of financial literacy, the modifying effects of city and province development also vary by *hukou*. As displayed in Figure 7-7, the two macro-level factors work very much alike as moderators: except urban migrants, other types of *hukou* holders are relatively more engaged in *financial investment* in large cities and provinces; also, the inclusion differences between different *hukou* holders are primarily in line with the *hukou* hierarchy. City development can significantly increase the inclusion of *commercial insurance* for urban migrants, but not for urban natives, rural migrants, and rural citizens; positive but not significant modifying effect of province development is found.

Both city and province development impose significant moderating effects on *formal credit* and *informal credit*, as shown in Figure 7-8. The three urban *hukou* holders, especially the urban migrants, are relatively more included with city development than the two rural *hukou* holders, leading to the increased disparity between the rural and urban divide. Province development also enlarges the inclusion disparity to *formal credit* between the most socially included and the least socially included *hukou* holders, the urban natives and the rural citizens; province development has pretty small and insignificant effects on *formal credit* for neo-urbans, urban and rural migrants. For *informal credit*, the main effects of *hukou* hierarchy are overwhelmingly larger than the modifying effects of two macro-

level factors. However, clearly, the rural *hukou* holders are relatively more reliant on *informal credit* than other *hukou* holders in large provinces, whereas less included regarding *formal credit*.

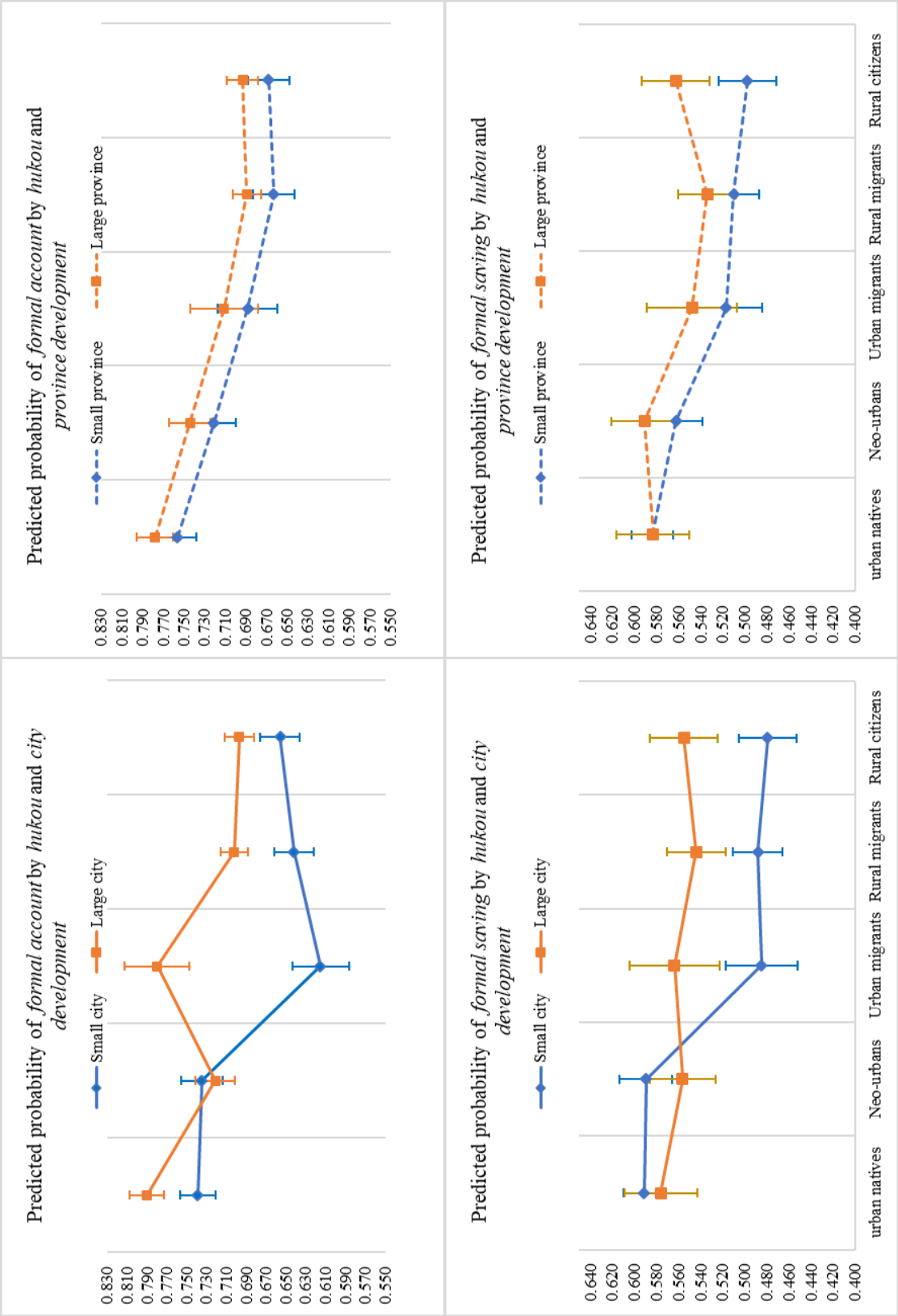


Figure 7-6 Cross-level effects of *hukou*, city and province development on *formal account* and *formal saving*

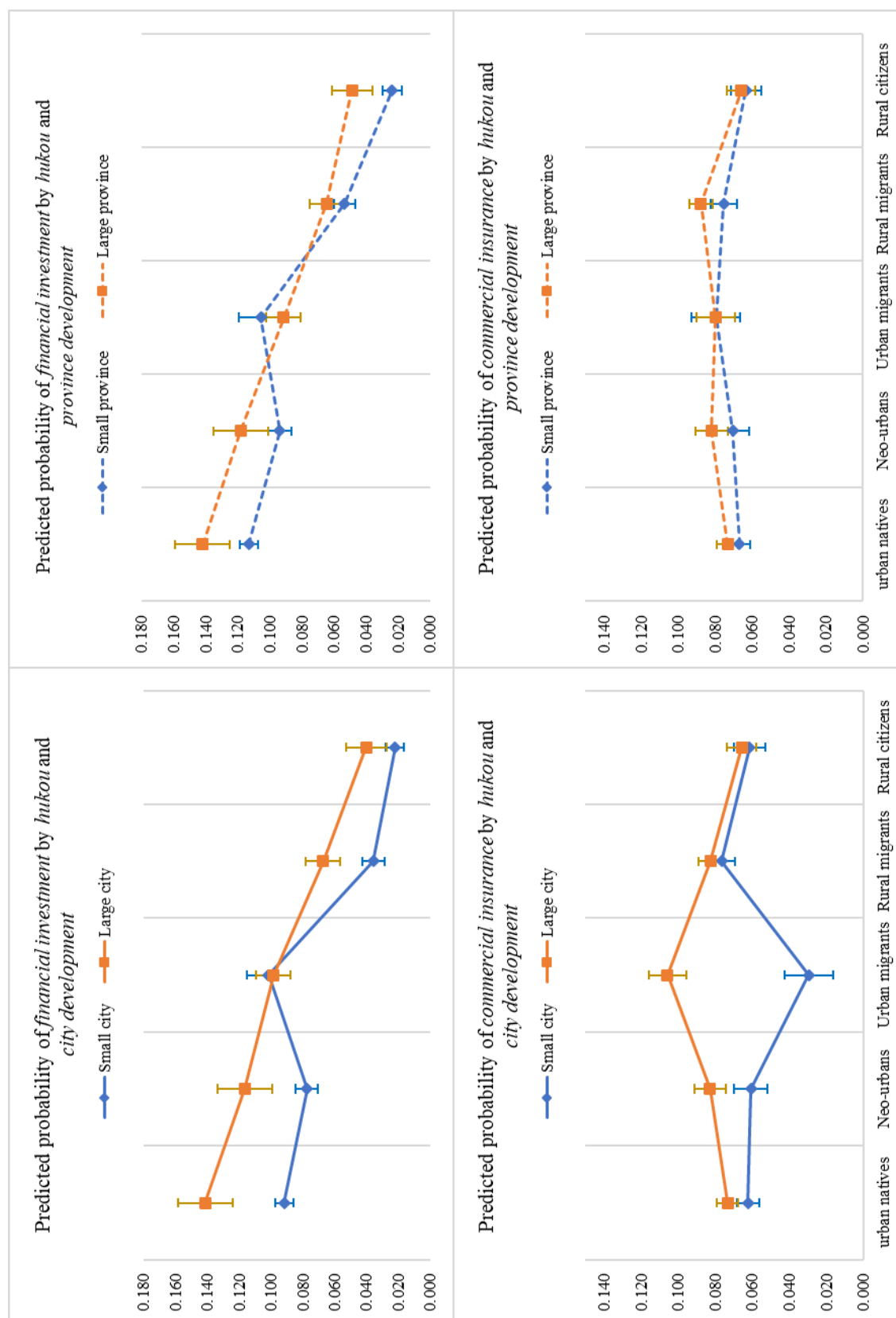


Figure 7-7 Cross-level effects of hukou, city and province development on financial investment and commercial insurance

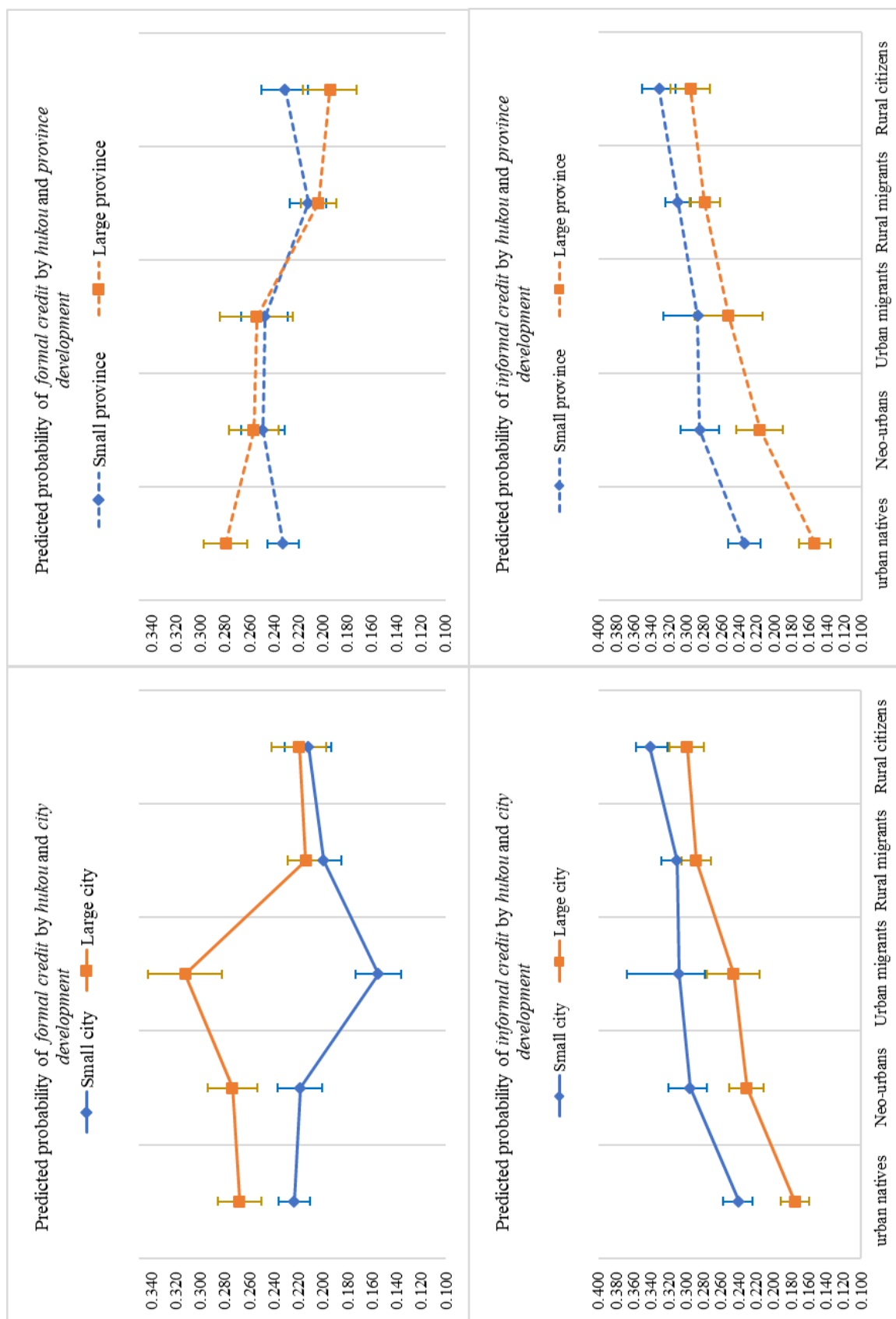


Figure 7-8 Cross-level effects of hukou, city and province development on formal credit and informal credit

The modifying effects of the two macro factors, especially city development, have implied both the Matthew effect—the already included become more included—and the spill-over effect of economic development. Urban native households living in large cities, their inclusion level on *formal account*, *financial investment*, and *formal credit* are significantly higher than their peers living in small cities. Urban migrants and rural migrants are more included on *formal account* and *formal saving*; however, the disparity of the inclusion level on *commercial insurance* and *formal credit* between these two migrants are relatively increased with the development of cities.

Thus, *Hypothesis 7-1* (Financial inclusion is stratified by *hukou* hierarchy via institutional barriers and non-local discrimination mechanism), is not rejected. But it's worth noting that the pattern of distinction is not as exact as the *hukou* hierarchy proposed and illustrated in Figure 7-1. *Hypothesis 7-2* (economic development at the province and city level moderates how *hukou* hierarchy impacts financial inclusion) cannot be rejected, either, because city and province development moderate the effects of *hukou* on financial inclusion, with moderating effects varying across different indicators of financial inclusion.

7.5 Conclusions and Discussion

Based on the new typology of *hukou*, this chapter uses 24034 households from China Household Financial Studies 2013 to investigate the determinants for household financial inclusion as well as the modifying effects of economic development. The conclusions drawn are as follows.

First, financial inclusion disparity derives from the rural-urban divide as well as from the division between being native and non-native. Predicted values of the composite index of financial inclusion suggest that except for the neo-urbans, urban migrants, and rural migrants have all significantly reported a lower level of financial inclusion. This is supported by the logistic estimates on account ownership and saving behaviours, in addition to being partly supported by estimates on financial investment engagement. Second, these disparities based on *hukou* can be accentuated by economic development, especially between rural and urban *hukou* holders. Neither demographics, household SES, financial literacy, nor human capital can fully explain the inclusion disparity.

The modifying effect of economic development is also significant: although account ownership, financial investment participation, and formal credit use are significantly increased in large cities while saving disparity decreased between the rural and urban, the inclusion gap between the two migrant categories on account ownership, commercial insurance purchase, and formal credit use. Similarly, province development can significantly increase the inclusion of financial investment and formal credit and diminish the saving disparity between the urban areas and rural areas. Yet, it can also increase the disparity in *formal credit*. Urban migrants' inclusion of *formal account*, *commercial insurance*, and

formal credit can be significantly increased, although estimates show that they do not enjoy the same advantage in financial investment. Rural migrants can only increase *formal savings* and are more reliant on *informal credit* on more developed provinces.

These findings provide several implications for improving household financial inclusion in China, especially under the global trend of “financialisation”. First, reforms to the *hukou* system should be one of the priorities of the government’s work on social justice. The disparity in financial inclusion between the rural and urban *hukou* holders further reflects the disparity in social justice and equality between the rural and urban economic development caused by *hukou* division. In the 1950s, the extreme socioeconomic circumstances can establish the rationale of rural-urban division via *hukou* (Krueger, 1996). However, today, it is in gradual *hukou* reforms—separating welfare provisions from *hukou* (Peng et al., 2009)—that is essential for the government to guarantee the steady success of the social and economic transition in China (F. Cai et al., 2001). Furthermore, this can also diminish the time spent by migrants on the “floating” or “circular migration”, increasing the efficiency of *semi-urbanisation* (Xia & He, 2017) and accelerating rural-urban integration.

Secondly, economic development is still a priority of the Chinese government. Since financial inclusion is generally higher in the more developed provinces and cities, integrating different economic belts in the east and west of China can help improve financial inclusion. For instance, providing more fiscal investment for less developed provinces and small cities, where the habitats and hometowns of migrant individuals and households are located. This is in line to the *hukou* policy—making the medium and small cities more accessible for migrants. Third, policies to alleviate discriminations caused by *hukou* division is needed, especially in large cities. Better consumer protection and regulations of the financial services markets to deal with discriminations against migrants and neo-urbans and will help build up consumers’ trust and confidence, which empowers consumers to equally benefit from financial inclusion (Benston, 2000; Malady, 2016). Fourth, as human capital and financial literacy can largely diminish the inclusion disparities based on *hukou*, the government should improve the educational opportunities and resources in rural and less developed areas.

However, the investigation in this chapter has two main limitations. First, the criterion of city and province development might not be able to measure multifaceted economic development. Studies combining more detailed community characteristics, such as per capita GNP, employment rate, education, and medical health resources, could better capture city and province development. Second, the association between financial inclusion and *hukou* hierarchy could be reversed; that is, financial inclusion can increase the rise of *hukou* hierarchy. Further research investigating the dynamics between *hukou* hierarchy and financial inclusion could be insightful.

Despite these limitations, this research has done two firsts. This research proposes an updated *hukou* typology to satisfy the academic need for more complex measures of *hukou* development. Also,

it is the first to investigate how macro-level factors moderate how *hukou* division affects financial inclusion at the household level from the intersectional lens. Both these two firsts align with the diversified economies and relatively self-sufficient and self-interested local accountability and regional disparities in China.

Chapter 8 Discussion and Conclusions

Migration can be an important tool to diversify and optimise labour use, reduce economic risks, and maximise family income and welfare (Todaro, 1969b), and many Chinese workers and households depend on migration for their livelihoods. However, migrant households and their family members, who bear the hope of improving the life quality and life chances of their families, have often been caught in a dilemma between the gains and losses of migration, weighing increased access to material resources on the one hand, against detrimental effects caused by familial separation on the other.

This thesis aimed to further the understanding of how migration impacts on family life from three new perspectives. The three empirical studies in the thesis have investigated the kinds of consequences brought about by migration on individual and household outcomes and have contributed to the understanding of how institutions at the macro level affect micro-level outcomes.

8.1 Summary of findings and contributions to the literature

In the first empirical study (Chapter 5), I investigate the developmental outcomes of rural children, many of whom have directly confronted two critical changes in their life. First, separation from their parents—being cut off from their attachment bonds due to migration and barriers of the *hukou* system; and second, boarding on school campuses due to the effects of the School Merging Programme—being away from home, their secure base. Parental migration and child outcomes have been widely documented; however, the effects of both migration and boarding school have been mainly confined to the popular press and social media and have been covered only in a few academic studies.

Based on the baseline survey of China Household Panel Studies, 2010 (CFPS), the results from Instrumental variables estimation and Propensity Score Matching consistently suggest three main findings. First, the boarding school experience imposes a significant negative impact on child mental health whilst it is positively related to academic performance. No significant effects are found from boarding on wellbeing and efficacy. Second, parental migration impacts negatively (albeit not always significantly) on some child outcomes. Third, there is evidence that the positive effect of boarding on academic attainment is greater, and the negative effect of boarding on mental health is smaller, for the children of migrant workers than for children whose parents have not migrated. This may be attributable to differences between the two groups in terms of what they are leaving behind at home.

Last, when examining the factors involved in boarding decisions, I find that parental migration is not significantly associated with the boarding decision. Instead, living in less developed regions and rural *hukou* registration are the leading determinants of whether children become boarders or not. These

two indicators overlap considerably with the characteristics of areas affected by school closures from the Merging Programme. In addition, it is worth noting that rural children, no matter whether boarding or not, generally reported less favourable scores on the four outcomes considered; thus, the influence of the rural-urban divide is larger than the influence of boarding.

That is to say, in rural China, the factor that dominantly decides children's boarding decision and their boarding experience is their rural identity—registered as rural and living in rural communities. Children's boarding decision in China are socially structured and decided rather than a family plan (Wen & Lin, 2012). As Xiang (2007) has mentioned, the fact that rural communities have been left behind socially and economically is the fundamental cause for the hardships experienced by the rural left-behind population; migration has just exacerbated the hardship. Thus, the mental health, academic performance, and efficacy of rural children also depend on the overall development of rural societies.

This empirical chapter sheds light on the interactive effects of two critical systems on child outcomes, boarding schools—the mesosystem and parental migration—the microsystem. In line with the attachment theory, school boarding experiences and parental migration have displayed negative associate with children's mental health. Whereas for the intersectional effects, for children with parental migration, boarding schools display some protection that could buffer the negative effects of parental absence. That family and school process together, which is greater than a person's demographic characteristics granted by family (Bronfenbrenner, 1988) is also identified in Chapter 5. The intersectional effects of micro- and mesosystem (family and school) are observed: parental migration alone is found to have displayed limited impacts on children's developmental outcomes, but for children who have both parents out-migrated, boarding in campus tends to be protective for their mental health, wellbeing, academic performance, and self-efficacy.

In the **second empirical chapter** (Chapter 6), I investigate the emotional health of rural elders by taking the cultural frames (filial piety) and temporal dimension (migration duration) of adult-child migration into consideration. I analyse the determinants of emotional health, captured as happiness and wellbeing, controlling for other demographic and socioeconomic factors, especially their physical status, economic life (including social insurance inclusion and remittance), and social roles (whether being caregivers of grandchildren). The investigation yields three main research findings:

First, based on the new typology of adult-child migration that I created, which distinguishes between *all*, or just *some*, of the cohabiting adult children who have migrated, the statistical evidence suggests that rural elderly parents did not necessarily suffer more adverse mental health and wellbeing when *all* their children have migrated than those elders with *some* of their adult children out-migrated. Instead, it is rural elders with some of their coresidential adult children having migrated for work suffered the most. Second, regarding the temporal dimension of adult-child migration, “turning points” are both spotted in both groups of rural elders, but the timings are different. The mental health of rural

elderly parents appears to recover after a certain time of the migration of their adult children. However, elders where only *some* of their adult children have migrated recover from depression twice as quickly as those who see *all* their children out-migrated, with a similar pattern found in the wellbeing difference.

Third, the significance of the moderator (emotional closeness between the elders and adult children) and mediators (remittance and caregiving) cannot fully mitigate the negative effects of adult-child absence. Especially the significance of remittance—an essential means to express filial piety today, strongly suggests that other material-oriented filial piety practices cannot fully compensate the emotional loss due to the absence of adult children. Based on these three findings, I argue that the influence of adult-child migration is nonlinear and in Chinese rural households, filial piety is still highly admired. This empirical chapter contributes to the literature by dealing with two main limitations which characterised previous research.

First, a dichotomous variable indicating whether there is an adult migrant in the household is not enough to capture the complexity of household arrangement under the guidance of filial piety and other essential family values. The new measure I created, based on whether *none*, *some* or *all* of the economically correlated adult children have out-migrated, can more precisely measure the outcome of using migration as a livelihood strategy and the dilemma of obeying the notion of filial piety. Households with no adult child migration or *some* of their adult children have migrated can represent families with a higher level of obedience to traditional filial piety, whereas households with *all* their adult children migrated can be viewed as less obedient to traditional filial piety. The findings in this chapter suggest that the new typology can better capture the influence of child absence due to migration.

The counterintuitive research findings are in line with the cultural framing of migration, and the essence of filial piety practises in China. The symbolic value of adult-child migration in rural China—rural-to-urban migration, the mobility itself, has been valued as high social status—households whose adult children have migrated to urban are both economically and socially better off than those who have not (X. Shi et al., 2010; Zhu & Luo, 2010; Ye Liu et al., 2015; Lu, 2022). The increased intergenerational subjective social mobility due to migration is in line with the essence of filial practises—bringing honour to the family and making parents proud (Deutsch, 2006).

This chapter has also touched on the second limitation—the long-ignored temporal effects of migration. Although a large number of studies have pointed out that the mental health of rural elderly parents in China has been negatively affected by their adult child migration, the time dimension of migration has not been included, and neither has the dynamics of child absence been observed. My research has filled this gap.

In the **third piece of empirical research** (Chapter 7), I explore the determinants of financial inclusion on the household level in China, paying close attention to the role of *hukou* to further reveal how internal migration and *hukou* system have shaped financial inclusion status of households in China.

Based on data from China Household Financial Studies (CHFS), I use six indicators to measure financial inclusion and a new typology which reflects recent initiatives to award urban *hukou* status to natives of rural areas, as well as other diversity within formal *hukou* types. I find estimates of multilevel modelling suggest substantial differences in financial inclusion by *hukou* status, with significant modifying effects of city status. More specifically, I found that urban households, including urban natives, neo-urban natives, and urban migrants, are generally more financially included than the rural ones, and the inclusion disparities on the six indicators between the rural and urban households are accelerated in large cities. Rural discrimination is revealed by a generally lower level of financial inclusion among the rural migrant households than the urban households (urban natives and urban migrants). Non-native discrimination is embodied by the relatively lower inclusion level of urban migrant households in large cities. Based on the findings in this chapter, I argue that financial inclusion disparity derives largely from the rural-urban dual segregation and secondly from the division between the local (native) and non-local (migrant).

This chapter enriches the literature on *hukou*, citizenship, and social inclusion in cities. I have created a new *hukou* hierarchy based on two axes, rural-urban and local-non-local. The five entries of the *hukou* hierarchy can better meet the increasingly diversified regional development and localism due to central devolution on both fiscal expenditure and demographic control (local governments as the implementer of *hukou* policies have gained more authority as initiators as well). By focusing on financial inclusion at the household level, I also take two macro levels into the modelling, the city and province development—illustrating the urban adjustment mechanism and urban control sub-system (Mabogunje, 1970). As expected, the socially excluded groups due to *hukou* are also excluded in financial inclusion, with significant modifying effects of the urban system and regional development.

This chapter also fills the gap between financial inclusion studies on institutional settings and social inclusion. Existing literature has pointed out that most rural migrants have experienced different levels of mental and economic stress; meanwhile, because of the difficulty and institutional barriers of *hukou* conversion, especially in the large cities, many rural peasant workers are not able to gain “real” citizenship in the hosting cities, continuing to be culturally and socially marginalised in the cities. However, few studies have investigated how migrant workers are financially included in cities given this increasingly “financialised” world. Since early 2000, the Chinese government has endeavoured to improve financial inclusion against the backdrop of global financialisation, hoping that financial inclusion can help lessen the rural and urban divide. Although studies based on different datasets have reported that different social groups are financially included on a different level and have specifically pointed out that rural *hukou* holders are generally less included than urban *hukou* holders, the dichotomous category of the rural-urban divide can no longer be enough to describe the complexity of *hukou* hierarchy and social inclusion in China. The main theoretical implication of Chapter 7 is that the intersectionality based on two *hukou* attributes (type of *hukou* and locale of *hukou*) does help explain

the hierarchical relation between different *hukou* holders on financial inclusion. The inclusion differentiation reflects the mode of discrimination and privilege based on *hukou* types as well as the interplay of *hukou* and city and regional development. The macro-level social force would play an increasingly important role in understanding social inequalities.

Last, this thesis overall adds new understandings to the broad literature on migration and family instability. The mainstream of migration studies is about international or transnational migration. By focusing on internal migration in China, this thesis emphasizes the importance of internal migration and elaborates on Chinese-specific characteristics of migration and its influence on family life. Given that in developing countries, internal migration and urbanisation are still the pervasive social context, the investigation of the consequences of migration induced by economic reforms and urbanisation policies in China could bring some insights to the research of rural-urban migration in other developing countries.

This thesis has also focused on the left-behind population, not only the out-migrated population and the migrant communities who have been at the centre of migration studies for a long time. Thus, through this study, I reveal the life of the left behind, so as to bring the long-ignored or hidden figures into the front of the migration studies, especially the rural elderly population—the silenced engineers of the economic miracle in China (Singapore Management University, 2016). As for the investigation of migrants in urban life, I focus on financial inclusion against the backdrop of the global trend of financialisation and the new *hukou* policy in large cities— financial inclusion as a tool of material and wealth accumulation (Langley, 2008), is becoming more and more important for entitlement of citizenship and social inclusion in general (Fligstein & Goldstein, 2015; Van der Zwan, 2014). Financial inclusion could be another central issue of migrant studies in large cities in the coming years, with the adoption of neoliberalism by Chinese governments and the retreat of government in welfare provision (Harvey, 2020).

8.2 Implications for policy and social practice

In Chapter 5, I showed that boarding school experience imposes significantly negative effects on children's mental health whereas it improves academic performance; parental migration seldom modifies the negative effects of boarding school; and boarding is choice made by (or for) rural children, with parental migration not featuring strongly in this decision.

The provision of boarding schools arises from the Merging Programme. This was halted in 2010 amid multiple concerns. However, many primary schools in rural areas have been closed and will never be opened again, so boarding school has become a necessity for many children from remote rural areas. It is a comfort that children's academic performance benefits from boarding school, but it is also

very important to guarantee the good mental health of boarding children. One policy response to deal with this issue might be to monitor the psychological health of children in boarding schools and also provide mental health services for the children in need. Also, educational and training programmes should be encouraged in rural communities so that both children and adults can raise their awareness and skills to tackle the psychological issues coming out of family instability and family separation.

In Chapter 6, I find that the mental health and wellbeing of rural elders suffers when their children migrate, particularly when all of their children migrate. I find that they recover over time, and that the sending of remittances (although associated with improvements in wellbeing) cannot cancel out the negative impacts of migration.

There are potentially two sets of instruments by which the hardships for left-behind elders might be reduced. The first is to reduce the need for migration. I would suggest that fundamentally the central government should invest more funds in less developed areas, creating more job opportunities to accommodate more rural labours in small cities and towns. This could largely diminish the scale and duration of migration while still allowing rural labourers to earn material-oriented resources for the family. The second policy instrument is to provide more social support and resources to the rural elderly, especially to the rural elderly parents who are experiencing long-term adult-child migration. If migration as a household strategy cannot be replaced, support should be given to households with left-behind elders, including for example an increase in pension rates, social support groups and psychological counselling services in rural communities. Those elders are no longer active in the labour market, and even if they are active, they are the least wanted labour. Having very limited social welfare to rely on means, they have to rely on the remittance of their adult children. Also, because of the absence of their adult children, their mental health suffers; with limited income, they can hardly pay for mental health support, their rural governments require funding and incentive to provide these services. I would argue that to achieve the full balance (or a healthy relationship) between material-oriented resources and the emotional needs of family members is not only the responsibility of the households but also the government's responsibility. The *hukou* system, along with other institutions creating the rural-urban division and separation in cities, are top-down structures designed and initiated by Chinese political leadership and implemented by the bureaucracies in cities, who should also be the parties responsible for the malaise and social ills brought by these structures.

The findings in Chapter 7 are perhaps particularly relevant for social policy. Financial inclusion is an important policy aim of the Chinese government in its quest for economic development. A direct suggestion for improving financial inclusion would be to promote public financial education and especially, to improve the educational opportunities and resources in rural and less developed areas, as the differentiation of household financial inclusion according to *hukou* hierarchy 1) has decreased when financial literacy is included and 2) has largely disappeared when human capital indicators (including employment and education) are included.

However, the fundamental solution would be changing how the *hukou* system works. Let *hukou* be itself - that is, remove the function that it currently fulfils of the distribution of social resources and entitlement to facilities, and let *hukou* revert to its former function of a demographic recording system (as it was prior to 1958). China experienced some extreme socio-economic circumstances in the 1950s, which may form a rationale for using *hukou* as a tool to control the population and to serve national economic development (Krueger, 1996; Naughton, 2006). But today, the extreme socioeconomic circumstances are gone, and China has become the second-largest economy in the world. *Hukou* has become the primary hindrance towards social equality and separating welfare provision from the *hukou* system (Peng et al., 2009). Since 1978, *hukou* has not forbidden mobility; it should not be tied with social welfare entitlement.

The long-term solution to improve financial inclusion is to increase socioeconomic development. As can be found in Chapter 7, households are significantly more financially included in more developed provinces and large cities. This means that social policies which help less developed provinces become more economically developed and smaller cities more urbanised can directly increase the overall level of financial inclusion. Also, this can help “cool down” the migration heat in megacities and also decrease the level of rural and non-local discrimination in cities. As discrimination is associated with distinction, the over-crowdedness of the population in megacities can contribute to intensified competition, which needs more criteria for distinction, and *hukou* can be easily used as a tool. This could be a potential explanation for the increased financial inclusion differences between rural and urban *hukou* holders. Thus, development in small cities and middle regions can attract migrants and decrease the population density in large cities, and thus decrease the discrimination based on *hukou*. This can also diminish the time migrants need to spend on the “floating” or in “circular migration” between rural and urban regions, thus increasing the efficiency of semi-urbanisation and accelerating rural-urban integration. Also, this can gradually close the rural-urban gap as well as eliminate rural discrimination.

The short-range policy implication would be financial market regulations—to provide better consumer protection and issue regulations to stop discrimination in the financial services market (Benston, 2000). This would help build up the trust and confidence of consumers, who thus would be empowered to benefit from financial inclusion (Malady, 2016). In addition, in cities, more support should be given to peasant workers, who have been contributing to the economic miracle the most but have been treated the most unequally.

8.3 Limitations and future research directions

In this thesis, I have investigated how migration has impacted family life via probing the “pains and gains” of family members who are separated and facing their own difficulties and challenges. However, there are several limitations that need to be acknowledged.

First, limitations due to the **availability of data**. The empirical studies in this thesis use cross-sectional datasets rather than longitudinal panel data due to high levels of data attrition and inconsistent measurements between waves. To overcome endogeneity and reverse correlation, I used instrumental variables estimations and propensity score matching in Chapter 5 to establish the causal link between boarding school experiences and children’s developmental outcomes. But the two instrumental variables have not worked very well on academic performance and efficacy. Nor was I able to identify the decision to attend boarding schools very well by using propensity score matching. If quality panel data can be provided and the measure of child outcomes (mental health, for instance) can be consistently administrated across waves, the cause-and-effect relationship between boarding experience and child outcomes could be examined in a clearer way. Also, the short- and long-term effects of boarding school experiences, as well as the modifying effects of parental migration, will be investigated since a large number of studies have demonstrated that the temporal dimension is central to observing the cumulative effects of some essential life events (Schaverien, 2011; Meng & Yamauchi, 2017; Liang & Sun, 2020).

Similarly, quality longitudinal data would benefit the investigation of Chapter 6 and Chapter 7. The status of emotional health (measured as mental health and happiness) in Chapter 6 is the “snapshot” rather than the “track and trace”; it would be interesting to pin down the real-time trends of emotional changes in rural elders if quality longitudinal datasets are available. Also, knowing the frequency of migrant children’s homecoming is important. For example, elders whose children have been away for five years but return and reunite with families several times every year could be mentally better off than those elders whose children have been away for two years but have never returned and reunited with families during the whole period. Also, if CFPS survey can track the migrant population as it has promised in the first wave so that the measure of the parent-child relationship can be dyadic in Chapter 6 rather than “snapshot” and only being parents’ ratings. Likewise, if the CHFS survey can trace the migrant population, studies can also identify the dynamic relationship between the interwoven relationship between *hukou* changes and financial inclusion changes, as well as the causal link between household financial inclusion and households’ positions on the *hukou* hierarchy. It is possible that the relationship is reversed since a higher level of financial inclusion could lead to a higher level of family wealth accumulation, which can be used as an exchange for *hukou* conversion (Du, 2004; Li et al., 2010). It would be interesting to pin down the dynamic relationship between financial inclusion and *hukou* hierarchy, which takes time to reveal, and thus quality longitudinal datasets are needed.

Second, the issues of **measurement and operationalisation**. Some of the key concepts are confined by the measures available in the questionnaire. For example, mental health can be operationalized in many ways, including self-rating scores on an anxiety or depression scale or medical examinations of physical symptoms. Since only self-rating scores are available in the CFPS 2010 questionnaire, the measure of children's mental health and the emotional health of rural elders in this thesis is subjective.

Also, the measure of household financial inclusion in Chapter 7 is confined to the aspect of *use*, without including the *access* aspect of financial inclusion, although awareness is controlled as financial literacy. That is, how developed the financial market is and how easy it is for households to access financial services, are not surveyed at the community level. To solve this, Chapter 7 includes the economic development of the province and city as the macro-level indicators, although this is far from enough. The measure of the *use* of financial inclusion is captured by six binary variables (having a bank account, having formal savings, having financial investment, having commercial insurance, having formal credits, and having formal credits). It would be interesting to include scale measures of financial inclusion, especially on entries, including saving behaviours, financial investments, and formal credits. Although the CHFS 2013 questionnaire does design questions to collect the exact amount of monetary information on these two aspects, the number of missing values is large, and thus scale measures of many interesting indicators of financial inclusion are not used.

Another measurement limitation in Chapter 7 is the measure of socioeconomic development of province and city. The concept of development covers many aspects, including economic growth (GDP/GNP), cultural development, technological development, and inclusiveness—that is, whether a city provides an open, inclusive, engaging, and collaborative environment. Although all last three aspects are highly correlated with economic growth, they represent specific perspectives and cannot be shadowed by economic development.

As has been illustrated by Polanyi (1944), it is a misconception to treat economy and society as two distinct spheres. As analysed in his book, Polanyi illustrates that economic activities were embedded in non-economic institutions, including religion, culture, social traditions, norms, and so on. In Chapter 7, the rural and non-local discrimination experienced by rural *hukou* holders and neo-urban *hukou* holders in the financial markets, deriving from the rural-urban divide and localism, suggests that improving financial inclusion cannot be achieved by only focusing on financial markets. Removing the institutional roots of discrimination is essential in improving a city's overall financial inclusion.

For **future research directions**, studies of migration can surely benefit from more versatile and quality datasets, especially high-quality longitudinal datasets. They enable researchers to tease out the causal link as well as to observe dynamic relationships between the variables of interest. Also, a longitudinal survey design allowing research on the migration trajectory and the dynamic process of family life would certainly benefit migration studies. This also meets the concerns of migration scholars

on the investigation of repeat and return migration, the “counter-stream migration” in Lee’s words (1966), emphasized by Greenwood (1985) in his equilibrium framework for understanding rural-urban migration. Also, longitudinal data will also be urgent to investigate a new generation of migrant workers, who are born in cities and who have no experience of rural living or working (Huashu Wang et al., 2021; L. Zhao et al., 2018). They identify themselves as urban but are not entitled the local citizenships as they are rural *hukou* holders. The investigation of this so call new generation of migrant workers can testify the semi-industrialisation mode as Chinese-specific theories of migration and urbanisation (Huang, 2006; Xia & He, 2017). All these research concerns call for quality large-scale social surveys. The questionnaire should also include measures of family norms and values and record these changes, in order to witness changes in the family sphere brought or triggered by macro and chronosystems.

Qualitative research can provide us with a complete understanding of the consequence of migration on family life. Appeals for the investigation of mobility, belonging, and identity from migrants’ everyday practices (H. Zhu & Qian, 2021) would benefit the understanding of the semi-urban mode of the rural-urban integration framework. Concerns have been raised for a new social group in cities—the new generation of migrants who are born in cities and have no memories or life experiences in rural areas. The question of whether they can adjust themselves in their unfamiliar “homelands” without any “soil attachments” if *hukou* conversion is not attainable or “affordable” during their lifetime in cities is difficult to answer, but the answer to it would certainly help scholars and the society to understand the role and the responsibility of family and government in achieving sustainable urbanisation and maintaining justice and equality. For example, qualitative research can pin down mechanisms that explain the negative but waning effects of adult-child migration on the emotional health of rural elders. Could it be that their understandings and perceptions of filial piety have changed due to child migration? Or these rural elders have found a way to adapt the attachment loss between the increased financial support and their need for emotional support? The stories behind these questions can be answered through fieldwork and case studies.

Also, through Chapter 7, the association between *hukou* hierarchy and financial inclusion has been found, and the potential explanations are the rural and non-local discrimination, but how exactly these two types of discrimination have worked in real life can only be obtained through interviewing non-local and/or rural people when they are not able to open a bank account or not get a house mortgage.

Another focus for further research could be using **theories of race and gender** (Curran et al., 2006) to investigate the influence of internal migration on women and the rising scale of transnational migration in China. Globally as well as in China, the number of women involved in migration is not decreasing, but instead is still on the rise (Donato & Gabaccia, 2015). A large number of female migrants are working in urban care services sectors; the job responsibilities requiring them to play a role of mother and caregiver challenges their past mothering experiences and incudes guilt toward their own children (Y. Su et al., 2018). Challenges and difficulties in work and intimate relationships have

affected their physical and mental health (Gaetano, 2008; Jacka & Gaetano, 2016). For left-behind women, who are caregivers for both left-behind children and elders and the main labourers on farmland, understanding how they manage their work, life, difficulties, and challenges—the pains and gains, revealing their wellbeing, perceptions and understandings of gender roles and equality (Cindy Fan & Chen, 2020; Jacka, 2012; Mu & van de Walle, 2011; Wu & Ye, 2016; Zheng & Lu, 2021). This would allow us to understand family as a social institution and how it reacts to changes brought by migration in family roles, values, and norms, and boarder sociological issues on social equality, social (in)exclusion, and structure and agency (Ye et al., 2016).

Also, the rising scale of **transnational families and migration** in China has caught more attention from scholars of Chinese migration studies. China is transitioning into a transnational immigrant-receiving country (Centre for China & Globalisation, 2018), embodied by many large cities in China that have employed the strategy of “worlding”—attracting international immigrants (Ong, 2011) in order to become a global, cosmopolitan city profile. However, the domestic voices have split into two sides over this issue. On the one hand, the domestic voices have overwhelmingly criticised this “worlding” strategy, as some foreign migrants have enjoyed a “supra- citizenship” without making much effort when compared with the efforts and struggles made by domestic migrants. On the other hand, immigrants from the Global South, especially those from African countries, have experienced a high level of uncertainty and precarity in large Chinese cities (Castillo, 2016), displaying a strong tendency towards self-isolation (Kong, 1999), although they aspire for local integration (Farrer, 2021). Also, these immigrants also confront discrimination due to race and cultural differences (Lan, 2016). These encounters share some similarities with rural discrimination and social exclusion experienced by rural domestic migrants. Researchers (Jordan et al., 2021) have appealed for more attention to be given to multicultural and racial encounters as the number of transnational families is increasing because of the rise of international marriage between immigrants and Chinese people. At the intersection of internal and international migration, questions including how Chines governments will play their role in demographic management and what changes would be brought to the *hukou* system and citizenship are tricky.

China took only around three decades since its economic reform to become the second-largest economy in the world since 2010. However, it has paid a heavy price in terms of social equality and justice, social inclusion and integration, and national happiness and wellbeing. The Chinese government used *hukou* as a rationing tool in the centrally planned economy to achieve fast industrial development in cities and urban areas before the economic reform, creating persistent social and economic segmentation between the rural and the urban.

The rural-urban segmentation became the direct force of internal migration in China against the backdrop of socialist marketisation and urbanisation. Millions of rural peasant workers have left their homelands to work in urban areas with the hope of increasing the life quality of their entire family by increasing their individual income.

Researchers have reported that the remittance sent by the rural workers has increased the disposable income of the rural households, access to medical care, and educational opportunities; however, the losses are quite apparent as well. Since, for most rural workers, migration to urban areas means family separation, the absence of parents for the children, and of adult children for the elderly, result in the loss of day-to-day communication, interactions, care, and support, all of which are essential to child development, to the emotional health of the rural elderly, and the wellbeing of both the out-migrated and the left-behind.

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Appendix

Table 5-A1 Nested OLS Regression Results of Mental Health (N=3192)

	Mental 1	Mental 2	Mental 3	Mental 4	Mental 5
Boarding (<i>ref. no</i>)	-0.168*** (0.044)	-0.165*** (0.044)	-0.121* (0.047)	-0.119* (0.047)	-0.136** (0.047)
Parental migration (<i>ref.no migration</i>)					
One-parent migration		-0.062 (0.059)	-0.063 (0.059)	-0.051 (0.059)	-0.034 (0.059)
Two-parents migration		-0.195 [†] (0.102)	-0.201 [†] (0.104)	-0.179 [†] (0.104)	-0.158 (0.105)
Rural hukou			0.055 (0.046)	0.124* (0.051)	0.130* (0.064)
Male			-0.027 (0.035)	-0.030 (0.035)	-0.027 (0.035)
Han ethnicity (<i>ref. minorities</i>)			0.099 [†] (0.057)	0.064 (0.058)	-0.015 (0.061)
Age			-0.347 [†] (0.178)	-0.337 [†] (0.178)	-0.349* (0.178)
Age square			0.012 [†] (0.007)	0.012 [†] (0.007)	0.012 [†] (0.007)
Sibling (<i>ref. no</i>)			0.017 (0.051)	0.047 (0.052)	0.077 (0.053)
Birth order			-0.058 [†] (0.035)	-0.059 [†] (0.035)	-0.071* (0.035)
Parental education (<i>ref. primary and beneath</i>)				-0.032 (0.040)	-0.048 (0.040)
Household income				0.064** (0.022)	0.063** (0.022)
Hospital born (<i>ref. no</i>)				0.087* (0.040)	0.059 (0.041)
Kindergarten attendance (<i>ref.no</i>)				0.060 (0.043)	0.024 (0.043)
Cohabit with grandparent (<i>ref.no</i>)				-0.018 (0.044)	0.004 (0.045)
Population					-0.017 (0.021)
Distance to town (<i>ref. no within the medium value</i>)					-0.002 [†] (0.001)
Urban Community (<i>ref. rural</i>)					-0.035 (0.058)
Region (<i>ref. the west</i>)					0.183*** (0.054)
the middle					0.244*** (0.066)
the northeast					0.139** (0.049)
the southeast					0.030
R²	0.005	0.007	0.016	0.023	0.030

Note. Standard errors in parentheses; [†] $p < 0.1$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 5-A2 Nested OLS Regression Results of wellbeing (N=3192)

	Wellbeing 1	Wellbeing 2	Wellbeing 3	Wellbeing 4	Wellbeing 5
Boarding (<i>ref. no</i>)	-0.025 (0.040)	-0.021 (0.040)	0.035 (0.043)	0.036 (0.043)	0.026 (0.044)
Parental migration (<i>ref.no migration</i>)					
One-parent migration		-0.019 (0.055)	0.020 (0.055)	0.027 (0.055)	0.030 (0.055)
Two-parents migration		-0.277** (0.091)	-0.200* (0.091)	-0.174! (0.090)	-0.157! (0.089)
Rural hukou			-0.183*** (0.047)	-0.047 (0.050)	-0.032 (0.065)
Male			-0.158*** (0.036)	-0.161*** (0.035)	-0.156*** (0.035)
Han ethnicity (<i>ref. minorities</i>)			0.251*** (0.056)	0.176** (0.056)	0.192** (0.059)
Age			-0.411* (0.177)	-0.407* (0.176)	-0.390* (0.176)
Age square			0.016* (0.007)	0.016* (0.007)	0.015* (0.007)
Sibling (<i>ref. no</i>)			-0.121* (0.049)	-0.074 (0.050)	-0.074 (0.050)
Birth order			-0.046 (0.030)	-0.049 (0.030)	-0.038 (0.030)
Parental education (<i>ref. primary and beneath</i>)				0.127** (0.039)	0.124** (0.039)
Household income				0.044* (0.020)	0.053** (0.020)
Hospital born (<i>ref. no</i>)				0.087* (0.040)	0.104* (0.041)
Kindergarten attendance (<i>ref.no</i>)				0.116** (0.041)	0.146*** (0.042)
Cohabit with grandparent (<i>ref.no</i>)				-0.033 (0.042)	-0.045 (0.042)
Population					-0.065** (0.021)
Distance to town					-0.000 (0.001)
Urban Community (<i>ref. rural</i>)					0.088 (0.060)
Region (<i>ref. the west</i>)					
the middle					0.019 (0.054)
the northeast					0.133* (0.066)
the southeast					-0.177*** (0.050)
R^2	0.000	0.003	0.033	0.047	0.061

Standard errors in parentheses

! $p < 0.1$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 5-A3 Nested OLS Regression Results of Academic performance (N=3192)

	Academic 1	Academic 2	Academic 3	Academic 4	Academic 5
Boarding (<i>ref. no</i>)	0.549*** (0.037)	0.553*** (0.037)	0.269*** (0.032)	0.271*** (0.031)	0.272*** (0.031)
Parental migration (<i>ref.no migration</i>)					
One-parent migration		-0.133* (0.052)	-0.059 (0.042)	-0.042 (0.041)	-0.032 (0.041)
Two-parents migration		-0.298*** (0.080)	-0.089 (0.060)	-0.063 (0.063)	-0.044 (0.063)
Rural hukou			-0.480*** (0.031)	-0.249*** (0.033)	-0.187*** (0.041)
Male			-0.129*** (0.027)	-0.132*** (0.026)	-0.128*** (0.026)
Han ethnicity (<i>ref. minorities</i>)			0.409*** (0.050)	0.288*** (0.047)	0.273*** (0.048)
Age			0.784*** (0.133)	0.790*** (0.128)	0.785*** (0.127)
Age square			-0.018*** (0.005)	-0.018*** (0.005)	-0.018*** (0.005)
Sibling (<i>ref. no</i>)			-0.119** (0.038)	-0.049 (0.037)	-0.038 (0.037)
Birth order			-0.056* (0.025)	-0.057* (0.024)	-0.054* (0.023)
Parental education (<i>ref. primary and beneath</i>)				0.211*** (0.030)	0.200*** (0.030)
Household income				0.038** (0.014)	0.043** (0.014)
Hospital born (<i>ref. no</i>)				0.248*** (0.028)	0.242*** (0.029)
Kindergarten attendance (<i>ref.no</i>)				0.117*** (0.030)	0.109*** (0.031)
Cohabit with grandparent (<i>ref.no</i>)				-0.093** (0.032)	-0.090** (0.033)
Population					-0.035* (0.015)
Distance to town					-0.001 [†] (0.001)
Urban Community (<i>ref. rural</i>)					0.095* (0.041)
Region (<i>ref. the west</i>)					
the middle					0.050 (0.037)
the northeast					0.155*** (0.045)
the southeast					-0.039 (0.036)
<i>R</i> ²	0.055	0.060	0.453	0.492	0.498

Note. Standard errors in parentheses; [†] $p < 0.1$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 5-A4 Nested OLS Regression Results of Efficacy (N=3192)

	Efficacy	Efficacy	Efficacy	Efficacy	Efficacy
Boarding (<i>ref. no</i>)	0.099*	0.094*	0.036	0.036	0.036
	(0.041)	(0.040)	(0.042)	(0.042)	(0.043)
Parental migration (<i>ref.no migration</i>)					
One-parent migration		0.142**	0.103*	0.100*	0.112*
		(0.050)	(0.049)	(0.049)	(0.049)
Two-parents migration		0.298***	0.279***	0.276***	0.302***
		(0.084)	(0.082)	(0.082)	(0.082)
Rural hukou			0.121**	0.110*	0.075
			(0.046)	(0.050)	(0.065)
Male			-0.428***	-0.427***	-0.419***
			(0.035)	(0.035)	(0.035)
Han ethnicity (<i>ref. minorities</i>)			0.109*	0.105 [†]	0.083
			(0.055)	(0.057)	(0.060)
Age			-0.049	-0.055	-0.019
			(0.172)	(0.172)	(0.172)
Age square			0.003	0.003	0.002
			(0.007)	(0.007)	(0.007)
Sibling (<i>ref. no</i>)			-0.088 [†]	-0.093 [†]	-0.071
			(0.049)	(0.049)	(0.049)
Birth order			0.048	0.049 [†]	0.048
			(0.029)	(0.029)	(0.030)
Parental education (<i>ref. primary and beneath</i>)				-0.014	-0.026
				(0.039)	(0.039)
Household income				-0.042*	-0.039*
				(0.017)	(0.017)
Hospital born (<i>ref. no</i>)				-0.009	-0.006
				(0.040)	(0.040)
Kindergarten attendance (<i>ref.no</i>)				0.039	0.041
				(0.040)	(0.042)
Cohabit with grandparent (<i>ref.no</i>)				-0.020	-0.028
				(0.043)	(0.043)
Population					-0.065**
					(0.021)
Distance to town					-0.003**
					(0.001)
Urban Community (<i>ref. rural</i>)					-0.061
					(0.059)
Region (<i>ref. the west</i>)					
the middle					-0.028
					(0.053)
the northeast					0.182**
					(0.066)
the southeast					-0.027
					(0.049)
R²	0.002	0.007	0.059	0.061	0.070

Note. Standard errors in parentheses; [†] $p < 0.1$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 5-A5 First-stage regression results of 2SLS instrumental variables estimation

Boarding	Coefficient	Std. Err.	t	P> t	[95% conf. interval]	
Parental migration (ref.no migration)						
One-parent migration	-0.135	0.019	-7.190	0.000	-0.17183	-0.09818
Two-parents migration	-0.168	0.031	-5.340	0.000	-0.22917	-0.10614
Boarding # Parental migration						
Boarding#One-parent	0.558	0.036	15.310	0.000	0.48687	0.62990
Boarding#Both-parent	0.603	0.058	10.450	0.000	0.49018	0.71659
Rural hukou	0.020	0.019	1.050	0.296	-0.01718	0.05640
Male	-0.001	0.011	-0.100	0.917	-0.02183	0.01964
Han ethnicity (ref. minorities)	-0.004	0.018	-0.230	0.817	-0.03959	0.03121
Age	-0.066	0.052	-1.270	0.205	-0.16864	0.03611
Age square	0.003	0.002	1.550	0.120	-0.00085	0.00733
Sibling (ref. no)	0.009	0.015	0.600	0.550	-0.02060	0.03869
Birth order	0.003	0.009	0.300	0.763	-0.01548	0.02111
Parental education (ref. primary and beneath)	0.004	0.012	0.340	0.737	-0.01914	0.02706
Household income	-0.002	0.005	-0.390	0.697	-0.01268	0.00848
Hospital born (ref. no)	-0.020	0.012	-1.670	0.095	-0.04412	0.00355
Kindergarten attendance (ref.no)	-0.008	0.013	-0.630	0.532	-0.03282	0.01695
Cohabitation with grandparents	-0.008	0.013	-0.600	0.547	-0.03322	0.01761
Population(log)	-0.023	0.006	-3.650	0.000	-0.03532	-0.01063
Urban Community (ref. rural)	-0.074	0.018	-4.170	0.000	-0.10859	-0.03917
Economic Region (ref. the west)						
the middle	0.073	0.016	4.630	0.000	0.04206	0.10388
the northeast	0.004	0.020	0.170	0.863	-0.03635	0.04336
the southeast	0.024	0.015	1.630	0.103	-0.00479	0.05262
Providing boarding services	0.476	0.012	40.150	0.000	0.45273	0.49922
Distance to the nearest town	0.000	0.000	1.140	0.256	-0.00023	0.00088
Constant	0.334	0.322	1.040	0.300	-0.29818	0.96617

Note. $R^2=0.5278$; Standard errors in parentheses

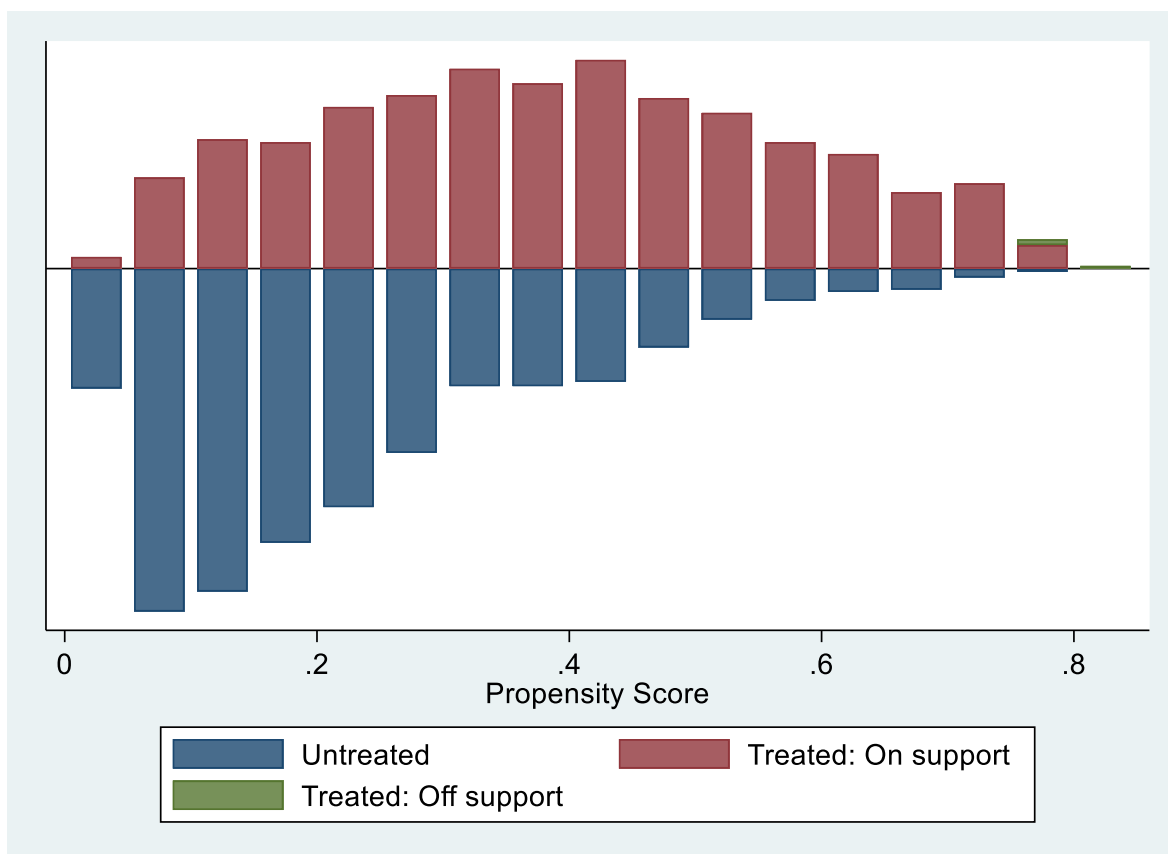


Figure 5-A1 Figure of common support between the treated and untreated of children with rural *hukou*

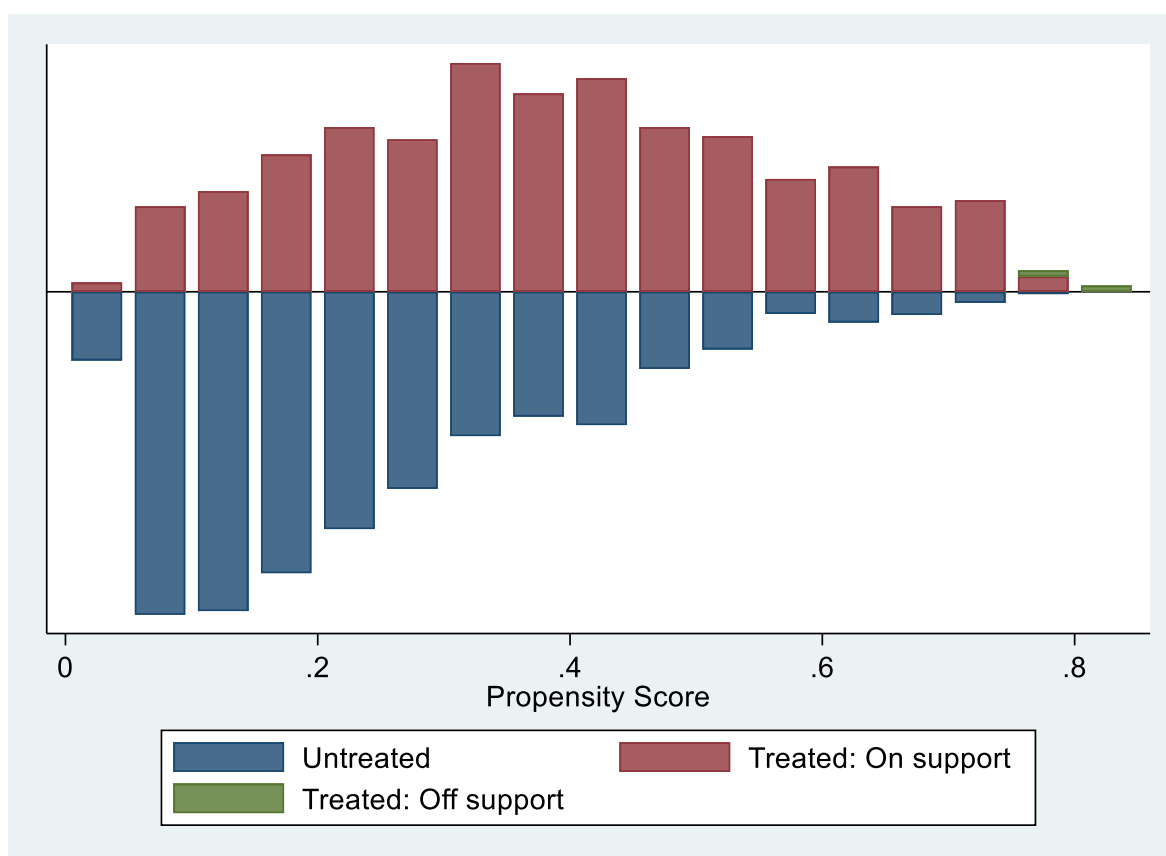


Figure 5-A2 Figure of common support between the treated and untreated of children living in rural community

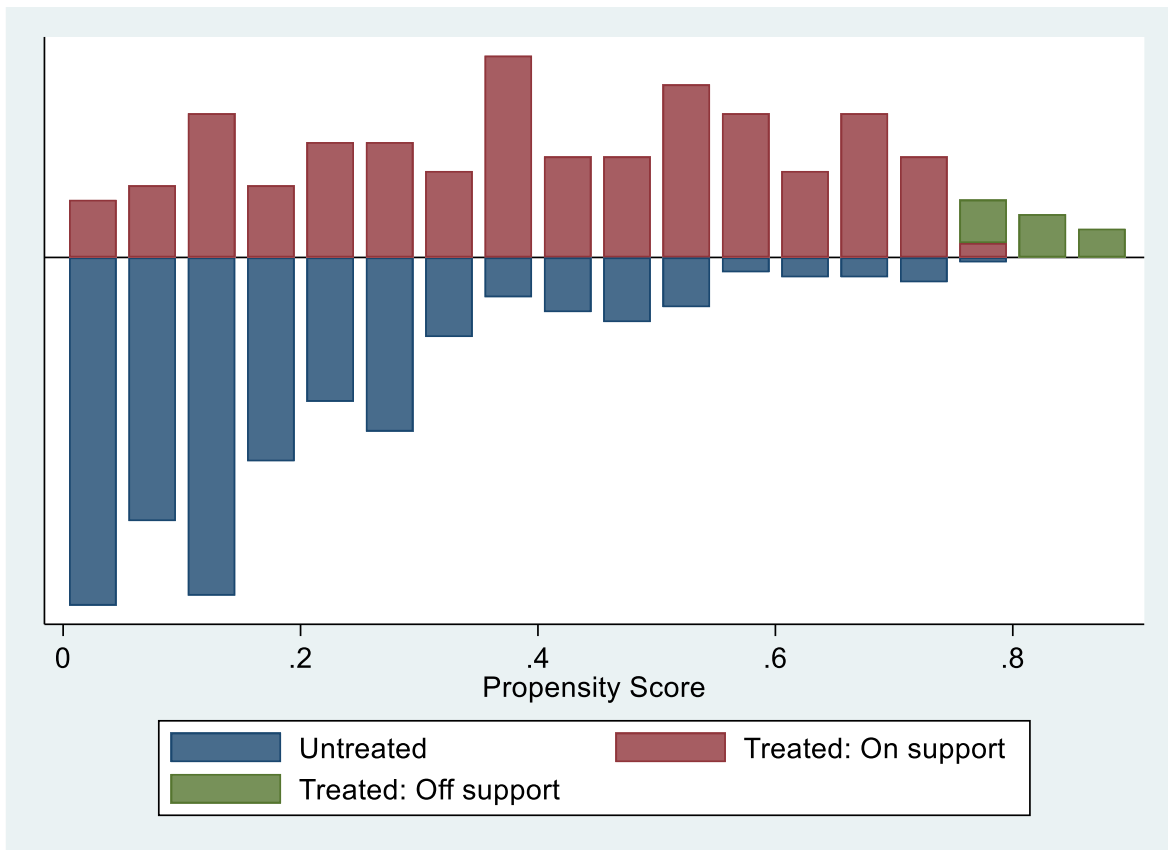


Figure 5-A3 Figure of common support between the treated and untreated of children with parental migration