

The historical logics and geographical patterns of rural-urban governance in China

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Abstract: The advent of a mobile society has led to profound changes in China's traditional rural-urban pattern and called for new strategies for urban and rural governance. Based on a macro perspective of temporal and spatial evolution, this study analyzes the historical logics of rural-urban governance, explores the geographical patterns of challenges in China's rural-urban governance, and finally puts forward targeted strategies for rural-urban governance toward integrated and sustainable development in China. From the historical perspective, the urban originates from the rural, and the connotation of rural, that is, a regional-scale outlook, rural-urban relations, and sociocultural interaction, forms the traditional approach to rural-urban governance. China's rural-urban governance has evolved from antagonism toward integration. In terms of theoretical development, the turn toward mobility is an important driving factor shaping and promoting the transformation of research focus on rural-urban governance. The mobility of urban and rural factors has especially in recent decades brought extensive challenges for governance, which are highlighted by the disintegration of the stability of rural and urban structures, growing regional disparities in rural education levels, and serious aging and hollowing crises in rural areas. We therefore propose that rural-urban governance should give sufficient consideration to the convergence of wider interests; realize social potential through institutional, cultural and spatial restructuring; and attach importance to collaborative development and governance. And the transfer of rural problems to urban areas should be paid attention to by rural-urban governance. This research enriches the knowledge regarding the logics and patterns of China's rural-urban governance from an interdisciplinary perspective. It is also helpful in the promotion of rural-urban integration and sustainable development, especially at a time when the mobility of social factors between rural areas and urban areas increasingly challenges traditional urban and rural governance and drives its evolution.

Keywords: rural-urban relation; urbanization; sustainable development; mobility; regional disparities

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1 Introduction

The increasingly salient trends of population, logistics, and capital mobility characterize the arrival of a mobile society, bringing unprecedented challenges to traditional social structures and rural and urban governance on a global scale (Shen *et al.*, 2017; Johnson and Lichter, 2019; Chen *et al.*, 2020). China has experienced the largest and fastest urbanization process, which has greatly reshaped the geographical and social space and widened the gap between urban and rural areas since the reform and opening-up (Chen *et al.*, 2021). The dwindling agricultural population and the decline of agriculture and rural areas are becoming increasingly obvious, and issues relating to agriculture, rural areas and farmers in China are thus hot topics and major concerns for academics (Bai *et al.*, 2014; He, 2018). In recent years, the State Council of China has put forward vigorous national strategies such as “rural revitalization”, “rural-urban integration” and “targeted poverty alleviation” to address the dilemma of unbalanced development between urban and rural areas and inadequate rural development (Li *et al.*, 2014; Long and Liu, 2016; Chen *et al.*, 2020; Wei, 2020; Wang, 2021). These strategies seek to promote sustainable urbanization and allow more people to share in the common fruits of high-quality development.

The imbalance of factors moving between urban and rural areas constrains rural development in China. With the wave of urban growth and rural decline, socioeconomic factors such as population, land, etc., in rural areas become urbanized (Long *et al.*, 2009; Lian *et al.*, 2016). The shift is largely irreversible. In the past decade, most rural areas in China have experienced serious population loss, while the urban population has grown by 236 million (NBS, 2021). The lack of policies for introducing talent to rural areas and the lagging innovation of related systems are the main factors restricting the reversal of this movement. Additionally, demography and emotional disorientation have affected cultural development patterns in rural China. The economic and social impacts of consumerism are becoming increasingly serious, manifesting in a loss of rural identity and emotional indifference. The mass exodus of rural populations to urban areas has brought about the hollowing of villages (Ye *et al.*, 2020). The empty nesters, left-behind children, and low-income unmarried people thus become the main components, which have in turn intensified the loss of population of rural areas.

Moreover, regional imbalance has long dominated China’s rural development pattern. The villages with development advantages, i.e., located along the eastern coast, account for less than 20% of the country’s villages. In contrast, the remaining 80% of total villages are in the central and western regions, where traditional agriculture dominates and resources and targeted supportive policies are lacking. Under the evolving top-level design, rural-urban governance continues to advance in depth (Cao *et al.*, 2019). However, clarifying the logics and patterns of rural-urban governance and addressing the challenges associated with rapid development and lagging governance are crucial to achieve sustainable development in both urban and rural areas (Liu and Li, 2017).

Rural-urban governance for sustainable development is not limited to rural or urban issues. Understanding this field requires a comprehensive consideration of rural-urban coordination, social history and culture. Since the beginning of human civilization, urban and rural areas, which are interdependent and organically linked, have had a natural bond (Liu, 2018). However, with rapid development, the relationship between urban and rural areas

becomes fragmented. Especially through the process of large-scale urbanization and industrialization, the imbalanced development between urban and rural areas and the adequacy of rural development pose great challenges to the achievement of Sustainable Development Goals (SDGs) (Ge and Long, 2020; Ye and Liu, 2020). The interconnected urban and rural areas are both places that benefit from and constrain the SDGs (Liu *et al.*, 2021). Achieving the SDGs requires a systematic and integrated effort and, in particular, calls for treating urban and rural areas as cohesive communities and avoiding artificially separating them.

China's urban and rural governance has a profound historical background and is currently facing a complex and changeable global environment. Governance is a dynamic evolutionary process involving multiple spatial and temporal scales (Cheshire *et al.*, 2007). However, the existing studies mainly focus on the specific issues of urban and rural governance, such as climate change, COVID-19, the achievement of the SDGs, and rural shrinkage. Research on urban and rural governance at the macro spatial and temporal scales, especially on the logic and pattern of rural-urban governance from the multiscale and interdisciplinary perspective, is very scarce. To bridge this gap, this study analyzes the historical logic and theoretical evolution of rural-urban governance, focuses on the geographical pattern of rural-urban governance in China to reveal the practical challenges, and finally puts forward recommendations for transforming China's rural-urban governance. This study is expected to contribute to a better understanding and a new kind of viewpoint on rural-urban governance, and also provides beneficial reference for promoting the practice of urban-rural governance under the new era.

2 Historical logic and theoretical evolution of rural-urban governance in China

2.1 Historical features and reinterpretation on China's rural-urban society

The object of urban and rural governance is an urban regional system and rural regional system that intersect, infiltrate and integrate. Importantly, urban and rural areas are a complex and interacted regional system, which also underpin urbanization. Rural refers to the vast area outside the urban built-up area (Liu, 2018). With the continuous development and evolution of urban and rural areas, the connotation of rural areas is constantly enriched. Thus, to better govern rural areas, a more generalized and broader understanding that goes beyond the physical space of rural areas is needed. From the historical perspective, “countryside” and “village” in China are obviously different from the West, although scholars currently use these terms interchangeably (Bascom, 2001). Interestingly, the concept of “rural” has considerably evolved. While it originally referred to “people (especially the upper classes) eat face to face” (Figure 1), it has come to represent a division of classes in modern times. It has become increasingly obvious that rural society has gradually evolved into rural-urban society in the process of further development toward modernization; moreover, it is necessary to advocate for rural and urban co-governance. The goals, tasks and practices of rural governance must be placed in the context of rural-urban mobility and integration. Therefore, “rural” cannot be narrowly equated to “countryside” or “village” especially in China but should be understood on the regional scale and in consideration of the urban-rural linkage and sociocultural interaction. This changed perspective reflects the formation of an integrated so-

cio-spatial community with multiple scales and multidimensionality, which is “rural” conceived in the present research. A comprehensive understanding of this community can also provide an effective solution to rural problems. In other words, revealing the essence of these three aspects is the basis for understanding the evolution of rural-urban relations, which is also the interpretation of the historical logic of rural-urban governance.

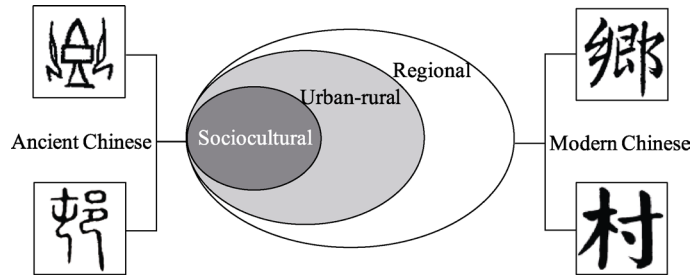


Figure 1 The evolution of the connotation of the “rural (乡村)” in Chinese culture

The priorities of rural-urban governance were very different throughout the history of China’s five-thousand-year civilization (Ye, 2021). Before the Western Zhou Dynasty (771 B.C.), the system of “*Tiguojingye*” dominated, under which the governance pattern of a rural-urban dichotomy was formed. In this period, urban and rural areas were strictly separated from each other, and the fields were allocated to people for cultivation. Later, from the Spring and Autumn Period to the Opium War (771 B.C.–1842), the emergence of the system of “*Bianhuqimin*”, in which people were managed on a household basis with basically equal identity after the collapse of rural and urban restrictions in the Spring and Autumn Period. During the period between Opium Wars and the reform and opening-up (1842–1978), the rural-urban dichotomy arose again, with urban domination and rural decline. Since the reform and opening-up, the relationship between urban and rural areas in China has entered a new stage toward integration, with rural development and governance receiving increasing attention, and this is especially obvious in the last two decades (Ge *et al.*, 2020; Table 1).

Table 1 The historical evolution and characteristics of rural development and governance in China

Rural-urban relations	Time	Governance characteristic
Antagonism	Before 771 B.C.	Separate governance of urban and rural areas
Coordination	771 B.C.–1840	Collapse of urban and rural restrictions
Segregation	1840–1978	Giving priority to urban areas
Toward integration	After 1978	Focusing more on rural areas

Currently, China’s rural-urban governance is dominated by high-speed and large-scale element flows. Rapid urbanization has greatly promoted the movements of population, logistics, and capital between urban and rural areas, which makes urban and rural areas more closely connected on the one hand but intensifies the rural-urban differences between regions on the other hand. In particular, the development differences between the southeastern coastal rural areas and the central and western rural areas have resulted in distinct governance patterns. Therefore, the general trend that is driven by mobility has gradually become the main concern and the dominant feature of China’s rural-urban governance. In this case,

to further clarify the logic of China's rural-urban governance, it is necessary to devise a governance mechanism suitable for China's development pattern with the help of different theoretical logics and finally move toward common prosperity.

2.2 Theoretical evolution and research review

With the expansion of modernity and advances in culture, information, and technology, the stable social situation has come to an end (Jones and Little, 2000; Little, 2001). Mobility has become a major feature of modern landscapes globally (Jin *et al.*, 2021). Scholars from different fields, including geography, have begun to pay attention to the disintegration and dynamics of the “space of flow” and “space of places” (Zhang *et al.*, 2018). Furthermore, the flowing nature of modern societies has transformed the inherently stable social state of traditional agricultural society, providing the new impetus for the development of governance. Against this background, urban and rural governance, especially under a turn toward mobility, have become an important theoretical paradigm and practical direction in the fields of social sciences such as management, sociology and economics as well as natural sciences such as ecology, environmental science, biology and physics (Flora, 2015).

Rural-urban governance receives widespread attention, although the research concerns vary greatly. Before 2000, scholars focused on structural governance, with special emphasis on democratic governance (Macleod and Goodwin, 1999; Ye *et al.*, 2020). After that, exploring governance from the perspective of space, such as the study of shrinking cities and rural spatial transformation, became a hot issue (Brenner, 2004). Recently, the research focus has turned to climate change, economic structure transformation and smart cities (Bulkeley and Casta'n Broto, 2012; Casta'n and Bulkeley, 2013; Vanolo, 2014). In addition, international scholars focused primarily on the sustainable development and environmental governance of urban and rural areas, including policy (Edwards *et al.*, 2001), power and management (Mohan and Stokke, 2000). In contrast, Chinese scholars have paid more attention to rural governance issues (Shi *et al.*, 2019; Yang and Cai, 2020), especially centered on villager autonomy (Hering and Ingold, 2012), new rural construction and rural revitalization strategies (Jiang *et al.*, 2007; Chen *et al.*, 2010; Zang *et al.*, 2020). This difference in focus in part reflects the greater emphasis on rural areas and the modernization of their governance in China. There are many geographers among the researchers participating in this evolving research field.

Under the influence of neoliberalism and postmodernism, the key role of mobility in rural-urban development has become increasingly prominent and has received increasing academic attention (MacKinnon, 2002; Clark *et al.*, 2007). Many Western scholars, including rural geographers, have analyzed and interpreted rural issues in terms of the relationship between mobility and rural development (Wandji, 2019). Raymond Williams argued that the contradictions and tensions between urban and rural areas reflected the crisis that capitalist development is facing (Williams, 1975). Darren Smith, on the other hand, argued that population movements between urban and rural areas are the concentrated representation of regional differences and social class differentiation (Smith *et al.*, 2015). Similarly, Paul Cloke, in his book *Country Visions*, pointed out that mobility makes rural areas highly connected with the urban world, prompting changes in rural policy and governance accordingly (Cloke, 2003). Furthermore, Michael Woods endowed rural areas with multifunctional characteris-

tics and privileged valuations, giving them an ambiguous and complex quality (Woods, 2010). A theoretical framework to explain rural-urban relations in China from a comprehensive perspective of history and geography was proposed recently (Ye, 2021). This framework considers that since the reform and opening up, China's development environment has changed tremendously. Against that background, a rural governance mode with Chinese characteristics has been established. This framework can be seen as the reconsideration of rural-urban governance in the context of the geographical pattern of China.

Overall, at the global level, the forces of urbanization are strong and take center stage in world history. The process of rural urbanization is accelerating. Therefore, the transfer of rural problems will become an important concern of urban and rural governance (Harvey, 2009). In addition, rural-urban governance modes have been formed along with a mixture of geography, culture, system, ideology, and industrial structure, which can be roughly divided into three categories. One is the solidly inward-looking or strongly egocentric, represented by the governance mode in China; the second is the outward-looking mode, represented by European countries such as ancient Greece and Rome; and the third is the variant inward-looking or weakly egocentric, represented by Japan, especially before the Meiji Restoration (Ye, 2021). Generally, the three modes reflect the differences in rural-urban governance between the Eastern and Western countries, which have far-reaching implications for the local and realistic development of rural and urban areas. Comparing the research variances in terms of objects, subjects, problems, models, and paths of rural-urban governance reveals that Western scholars place more emphasis on the diversity and nonlinear spatial heterogeneity of rural and urban areas, focusing on ecological and humanistic values. Moreover, the structure of rural-urban governance is mixed and usually forms a specific space or landscape. In contrast, Chinese scholars base their analyses on macro aspects such as policies and strategies, exploring how to carry out governance measures under a top-level design, for example, how national and regional policies can be linked with the current rural situation to achieve effective implementation.

3 Geographical pattern of practical challenges in rural-urban governance in China

3.1 Enhanced mobility and weakened stability of urban and rural society

Population is a core element of rural and urban systems, and its governance is constantly evolving. Population migration between rural and urban areas and different regions has accelerated the flow of other socioeconomic factors, such as labor and capital. According to the data of national censuses from 1953 to 2020, China's urban-rural population structure changed significantly, with the proportion of the urban population rising continuously and that of the rural population dropping markedly. The data from the seventh national census showed that the number of people living in rural areas was 509.79 million in 2020, and the proportion of the rural population in the national population decreased from 50.32% in 2010 to 36.11% in 2020 (Figure 2). The size of China's rural population continues to decline, and the rural population in the central region has decreased substantially. In 2010, the rural population of the central region was 231.19 million, accounting for 64% of the total population

of the region. By 2019, the rural population of the central region declined to 186.8 million, dropping nearly 19.2%, or 44.39 million lower than in 2010. Promoted by the new type of urbanization and the rise of the central region, China’s urbanization rate has steadily increased, and the proportion of the rural population has shrunk significantly. In the eastern region, too, the rural population continues to decrease, with the rural population accounting for 32% of the region’s total year-end population in 2019, down from 40% in 2010. The size of the rural population in the western region is relatively stable with a smaller reduction.

The increasing mobile population, especially in the last decade, has aggravated the difficulty of rural-urban governance. In 2020, the size of the mobile population was 375.8 million, an increase of 154.4 million compared to that in 2010, and rural-urban migrants accounted for 66.3% of the total mobile population, indicating that rural-urban migrants are the main driving force of population migration. Furthermore, when migrant workers are classified according to their flow process, it can also be found that there are significant geographical differences between the intra- and interprovincial migrant workers. The population of outgoing migrant workers nationwide has continued to expand, accounting for more than 50%, although it dropped slightly due to the COVID-19 pandemic in 2020. The mobility of the rural population over the last decade has significantly increased, and the patterns of rural development and rural governance therefore present a new development trend.

Additionally, there are mobile geographical differences in the intra-provincial and inter-provincial migrant workers, with the trend of intra-provincial migration continuing to increase over the last decade. Moreover, the number of migrant workers obviously decreased in the eastern region, while the number of migrant workers who were absorbed by employees in the central and western regions continued to increase (Figure 3). Specifically, in the eastern region, the migrant workers were mainly intra-provincial, accounting for 81.7% to 84.5% of the total migrant workers in this region. For the central region, interprovincial mobility is predominant, accounting for 57.9% to 67.2% of the total number of migrant workers. However, the mobility pattern of migrant workers in the western region has shifted from interprovincial to intra-provincial mobility. With the effective implementation of strategies such as the rise of central China, the development of western China and the coordinated development of eastern, central and western China, the optimization and upgrading of industrial structure and industrial transfer in developed regions have promoted the increase in employment opportunities in central and western China, resulting in significantly enhanced interprovincial migration in central and western China.

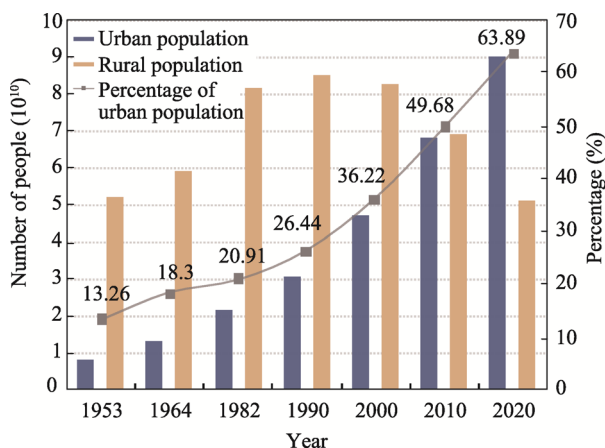


Figure 2 Changes in urban and rural populations in China from 1953 to 2020
 Data source: Communiqué of the Seventh National Population Census

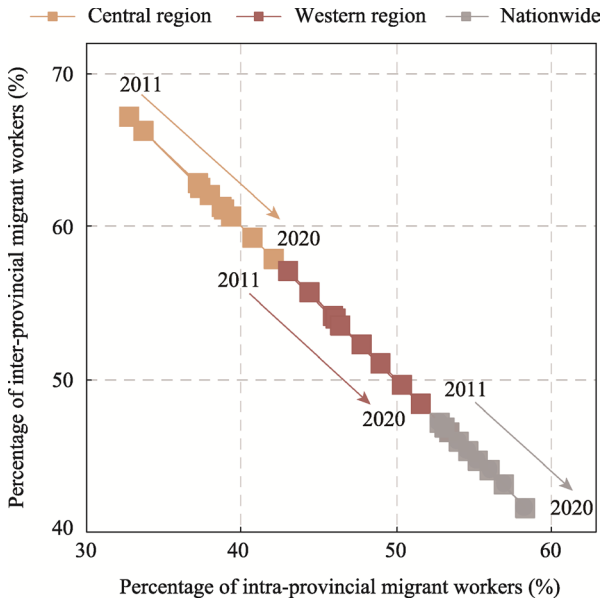


Figure 3 Dynamics of the trajectories of migrant workers in China in 2011–2020
Data source: Monitoring Report on Migrant Workers (2011–2020)

In terms of where the migrant workers were flowing into, there was an obvious trend in which the number of migrant workers who were absorbed by the eastern region decreased, while the number of migrant workers absorbed by the central and western regions continued to increase (Figure 4). It is noteworthy that the eastern region experienced the largest input and output size of migrant workers from 2011 to 2020. However, the number of migrant workers in this region has decreased significantly over the past five years. More specifically, as many as 165.37 million migrant workers were absorbed by this region in 2011, accounting for 65% of the total number of migrant workers in China. However, the number of migrant workers absorbed in the region

dropped to 158.14 million in 2020, and the proportion of the total migrant workers at the national level dropped to 55%. Meanwhile, the central and western regions were net-output

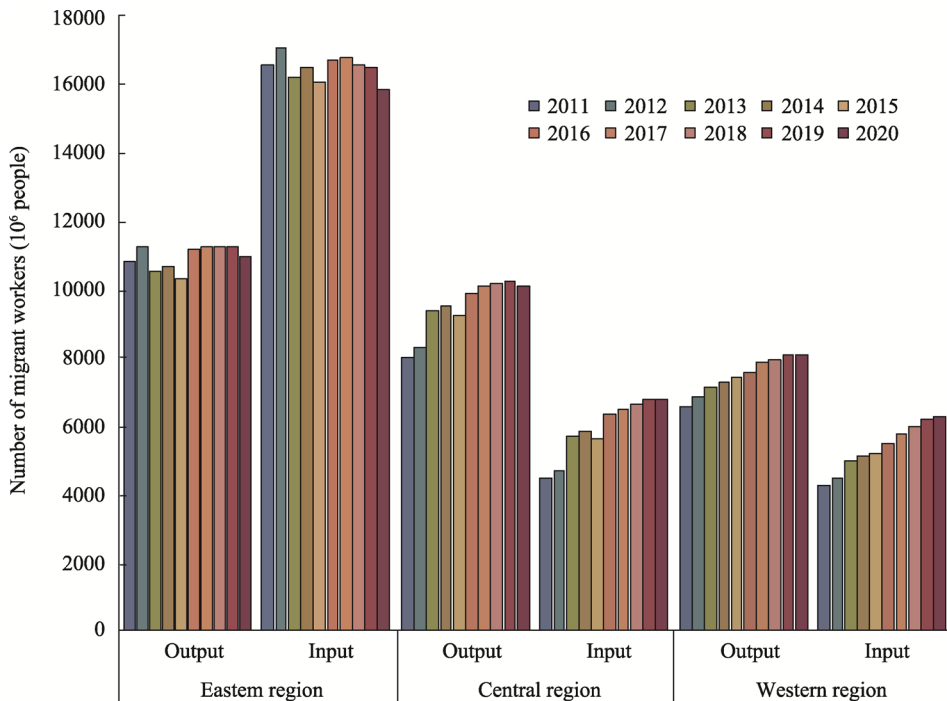


Figure 4 Size of migrant workers absorbed by eastern, central and western regions of China
Data source: Monitoring Report on Migrant Workers (2011–2020)

areas, and the net-output size has been shrinking notably in recent years with the improvement of employment absorption capacity in the region. In terms of the three urban agglomerations with the largest number of migrant workers, the number of migrant workers in the Pearl River Delta decreased the most seriously, and the Yangtze River Delta and Beijing-Tianjin-Hebei remained basically unchanged over the past decade.

In addition, the size of the average household decreased from 4.33 persons in the first national census in 1953 to 2.62 persons in the latest (Figure 5). Overall, we found that the increasingly frequent rural-urban migration and continuous decrease in the average household size have undergone a growing mobility and instability trend in Chinese society. Mobility further disrupts the basic structure of traditional rural and urban society, bringing challenges to rural-urban governance and responding to the urgent need for governance transformation.

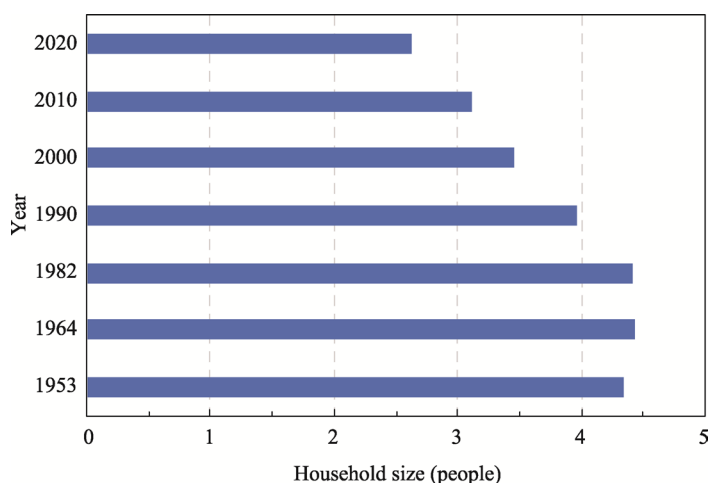


Figure 5 Changes in average household size in China from 1953 to 2020
Data source: Communiqué of the Seventh National Population Census

3.2 Growing regional disparities in rural education level

Regarding the education level, the education situation of China's rural population has improved continuously, but the illiteracy rate in the western region remains high (Figure 6). With the nine-year compulsory education fully universalized, the proportion of illiterate people in the rural population aged 15 or above in the eastern, central and western regions has decreased obviously since 2010. From 2013 to 2018, the illiteracy rate in rural areas fluctuated and increased significantly. In eastern China, the illiteracy rate was 7.57% in 2018, an increase of 3.84% from 2013. Additionally, the percentage of the illiterate population in central and western China increased significantly when compared with the previous year.

The reasons for the growth in the illiteracy rate in China's rural areas have been characterized by the significant regional heterogeneity. In 2018, the initial year of national implementation of the rural revitalization strategic plan (2018–2022), the rural population was obviously reduced under the promotion of rural revitalization and poverty alleviation by relocation (PAR) strategies. Notably, the scale of the rural population in the western region has been significantly reduced. The continuous migration of the educated population in the central

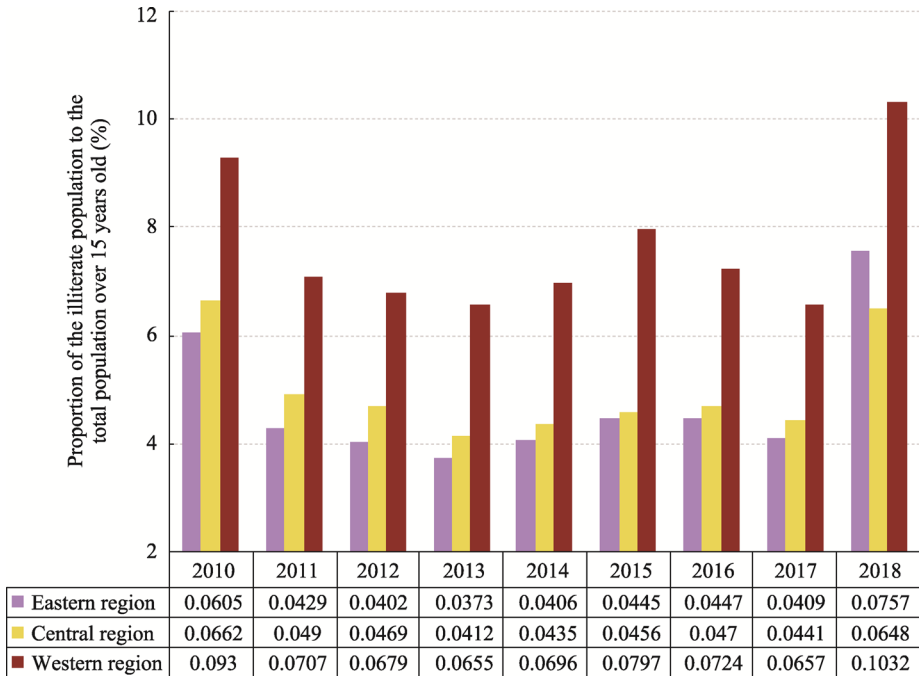


Figure 6 Regional differences in education levels of rural China (2010–2018)
Data source: China Rural Statistical Yearbook (2011–2019)

and western regions to the eastern developed cities and surrounding urban areas is an important factor leading to an increase in the regional illiteracy rate. Moreover, eastern China, as the main exporting area of migrant workers, has a serious outflow of rural laborers.

3.3 Severe aging and weakening of rural society

The rapid de-agriculturalization of the rural population has aggravated the phenomenon of the “three remaining populations” and the aging population, resulting in the lack of rural vitality. The age composition of China’s rural population has obvious regional differences (Figure 7). In the eastern region, the labor force population has decreased significantly as the aging population has continued to expand, and the proportion of the underage population tends to fluctuate and increase. In the central region, the proportion of the rural labor force population is the highest but has decreased significantly, and the aging population and the underage population show almost synchronous changes. The rural population of the western region, however, shows a tendency of “two decreases and one increase”, that is, the underage and elderly populations are decreasing, while the size of the labor force continues to increase.

3.4 Rural hollowing crises caused by population loss

The migration of the rural population, especially the labor force, has also caused a severe social support burden and increased the hollowing and wastage of land. As shown in the spatial pattern of rural population dependency ratio changes (Figure 8), the rural dependency pressure has increased significantly in the last decade, with the average annual change rate in Sichuan Province, Hubei Province, and Hunan Province increasing by more than 1.5%.

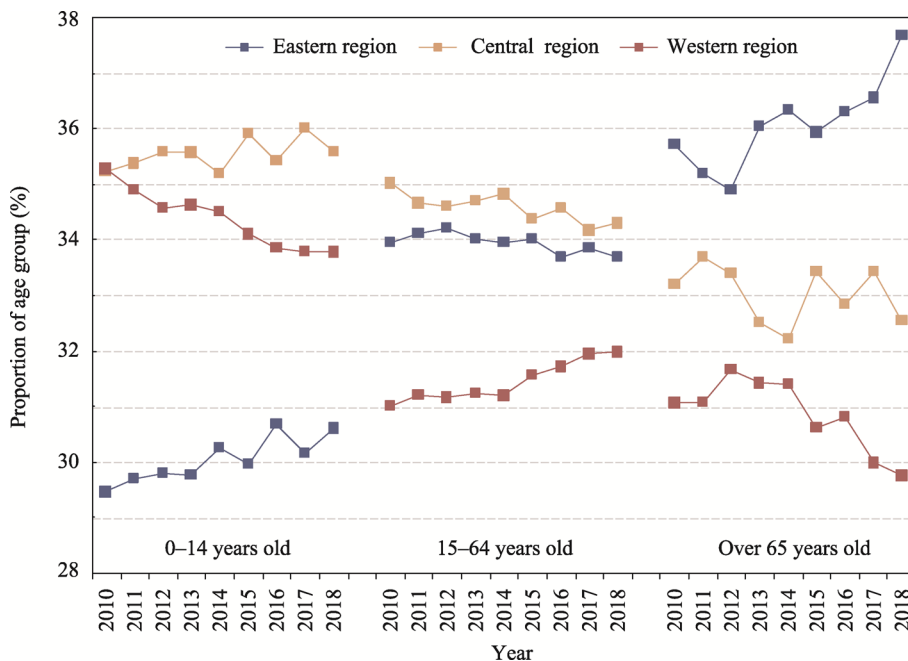


Figure 7 Evolution of age structures in rural China (2010–2018)
 Data source: China Rural Statistical Yearbook (2011–2019)

The shrinking population size in rural areas directly affects land use in rural systems. From 2010 to 2020, the area of arable land per capita in China’s rural areas generally increased, especially in the central and western regions. Among them, Heilongjiang Province, Inner Mongolia Autonomous Region and Xinjiang Uygur Autonomous Region rank among the top three in terms of average annual change in arable land area per capita. Considering housing conditions, rural population outflow has led to the problem of hollowing out of rural residences, especially in the eastern coastal regions, where the size of rural population outflow is larger and the level of urbanization is higher.

4 Future strategies for rural-urban governance

The rural-urban relationship is a continuously evolving process. Thus, China’s rural-urban governance has distinct historical characteristics, with the goals and subjects of rural-urban governance changing under the contexts of different eras (Li and Li, 2020; Ye *et al.*, 2021). Since the beginning of the 21st century, the innovation of information and communication technology (ICT), represented by artificial intelligence (AI), machine learning, and high-speed railroads, has greatly promoted time-space compression between regions. Moreover, technological innovation has provided the necessary conditions for the movement of factors that lead to the development of mobility. For rural-urban governance, the mobility of the population across regions and rural-urban areas accelerates the efficient allocation of economic factors, which is crucial for revitalizing rural and urban systems (Van der Kamp *et al.*, 2017). However, under the superposition of the long-term imbalanced development between urban and rural areas, the historical problems caused by the rural-urban dual system

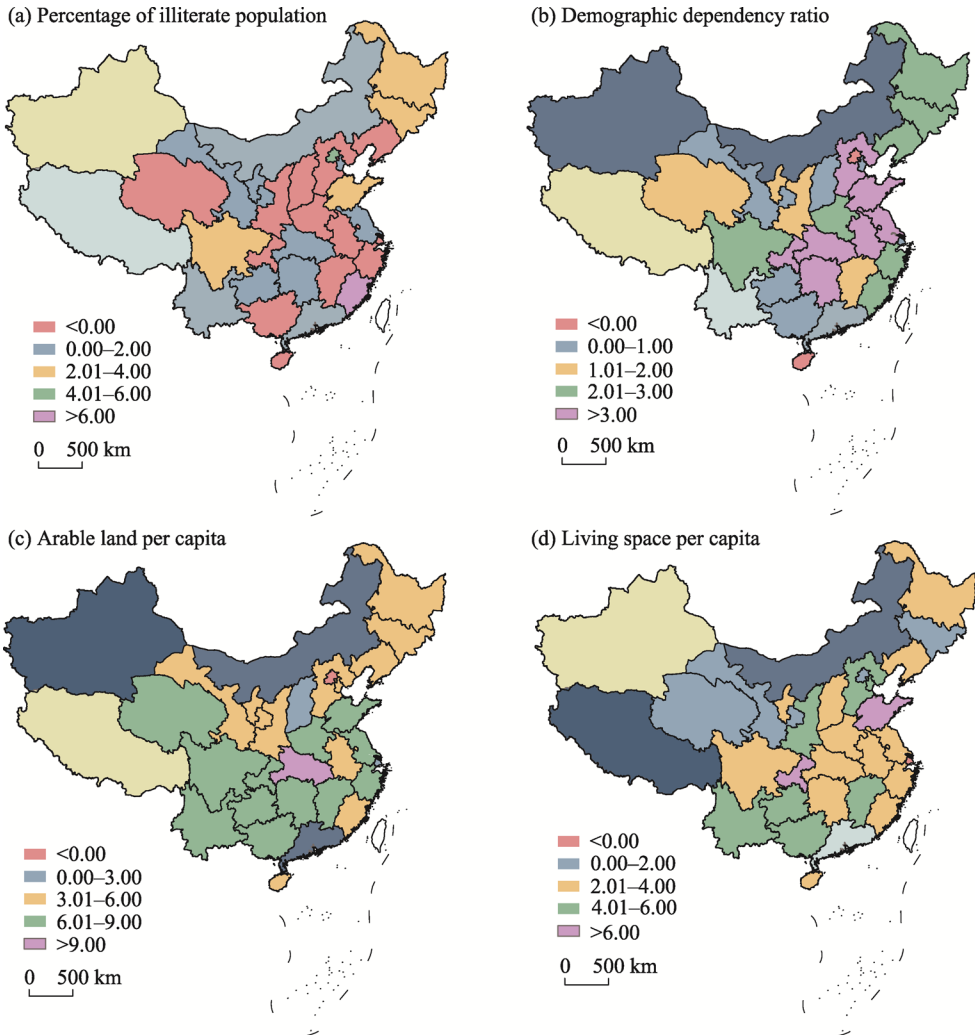


Figure 8 Annual average rate of changes of population and land in rural China from 2010 to 2019 (a) illiterate population rate; (b) demographic dependency ratio; (c) arable land per capita; (d) living space per capita. Data source: China Population and Employment Statistical Yearbook (2011, 2020); China's National Land Use and Cover Change (CNLUCC). The base map is from the Ministry of Natural Resources of the People's Republic of China, drawing review No.GS (2020) 4619.

have broken the internal stability. With a large outflow of land, labor and talent, there is a serious lack of an endogenous driving force for rural development.

China's rural governance and rural revitalization involve not only the development of rural areas but also the coordination between urban and rural areas as well as the integration of social and cultural space, and the aim is to achieve relatively balanced development (Skulska *et al.*, 2020; Ye *et al.*, 2021). Therefore, it is essential to support the dynamic evolution of rural-urban systems and regional systems within a context of mobility. If mobility is more prominent than stability, the "loss" of rural development will become more serious, which is not conducive to the development of rural-urban integration. In contrast, rural development will stagnate, which is also not favorable to the improvement of people's living standards and shared development. China's traditional vernacular society and rural culture have re-

markable stability and a strong capacity for inclusion and internalization (Smith, 2010; Chen *et al.*, 2019). With the rapid development of urbanization and industrialization, however, the dominance of urban society and industrial culture has had a major impact on the inherent rural culture, leading the culture of vernacular society to disintegrate. Particularly, under the general trend of mobility, the development of Chinese rural society is extremely unstable, and its governance is in a difficult situation.

Based on the present situation, China's rural-urban governance should focus on three directions. First, the formulation of public policy should fully consider the current situation and incorporate the concepts of adaptability and resilience. The current situation includes three dimensions: understanding the geographical patterns of mobility and its attendant challenges, anticipating uncertainty and trying to prepare for it, and attaching importance to institutional innovation in the vast central and western regions. Specifically, recognizing the whole situation refers to the three factors of migration to mega-cities, provincial mobility, and county urbanization, and these factors should be integrated into the future governance of China's rural areas. Anticipating changes means that when mobility is limited, e.g., by epidemics, sudden disasters, and other risks, resilience and locality become the two core aspects of governance. Creating new prospects means that China's rural governance should focus on the central and western regions, which contain 80% of the total villages in China. Rural-urban governance should encourage rural population urbanization through institutional innovation, and then promote the effective improvement of the regional agricultural scale and intensification level and advance the coupling and coordination of social, natural and economic systems in China.

Second, it is essential to pay more attention to the reconstruction of social systems, including institutional, cultural, and spatial aspects. In the process of social reconstruction, the most central and crucial issue is rural empowerment, that is, to give new capabilities to rural areas. Through institutional innovation, talent introduction and public space empowerment, rural areas will be developed in a more comprehensive way. With respect to reconstructing social and public spaces, the construction of China's urban and rural space is extremely insufficient compared to that in foreign countries. Additionally, public service space (such as libraries, parks, green spaces) needs to be provided for local disadvantaged groups and outsiders through spatial empowerment. In the process of the social reconstruction of institutions, culture and space, the endogenous dynamics of urban and rural communities should be continuously stimulated.

Third, collaborative governance regarding different regions, rural-urban areas, and multiple subjects needs to be encouraged. Collaboration is necessary to achieve efficient governance, and the promotion of collaborative governance should be improved at the national scale, regional scale, local scale, and community scale. On the national scale, the focus should be on promoting the coupling of the two strategies of rural revitalization and targeted poverty eradication. On the regional scale, the integration of urban and rural development should be realized under the guidance of urban and rural integration planning. At the local scale, the formulation of public policy should be centered on opening the channels of factor movement to promote the free mobility of these supportive factors. Lastly, on the community scale, more attention should be given to the effective interaction between the actions of multiple subjects and individual participation.

5 Conclusion and discussion

Rural-urban governance is an important theoretical and practical issue of multidisciplinary concern. China's urban and rural governance has a profound historical background and is facing a complex and changeable global environment, and governance is a dynamic evolutionary process involving multiple temporal and spatial scales. Within rapid urbanization, rural-urban factors are flowing on a large scale, and the rural-urban gap is widening rapidly. In this case, discussing issues of urban-rural governance in China is particularly salient. However, due to the complexity of urban and rural problems, most of the existing studies focus on the microscale and on specific topics. This study thus explores, from a macro perspective of time and space, the profound historical background of rural-urban governance in China and its geographical pattern of current challenges and then proposes strategies to improve it. This study is expected to help promote rural-urban integration and sustainable development.

From the historical perspective, urban areas originate from rural areas, and the initial meaning of the concept “*rural*” in China, that is, the regional scale, rural-urban interaction, and sociocultural connection, forms the traditional perspective for rural-urban governance in China. Rural-urban governance has experienced an evolutionary process from antagonism toward integration. In terms of theoretical development, it is found that the turn toward mobility is an important driving factor shaping and promoting the research focus of rural-urban governance. Compared with western developed countries, the research hotspots of urban and rural governance in China are both general and unique at present. The mobility of urban and rural factors since 1953 and especially in recent decades has brought many challenges for governance, which are highlighted by the disintegration of stable social structures, growing regional disparities in education level, and serious aging and hollowing crises in rural areas. On this basis, we propose that rural-urban governance should give sufficient consideration to the convergence of wider interests; realize social potential through institutional, cultural and spatial restructuring; and attach importance to collaborative development and governance.

Population migration at present requires urban and rural governance to break through the traditional boundaries of administration, household registration, social security and welfare and carry out multidimensional institutional innovation. Rural and urban co-governance is the future governance trend. This trend will strengthen interdisciplinary cooperation and integration and further explore the new theory of rural-urban co-governance. Moreover, it is the responsibility and obligation of a researcher to actively participate in the practice of urban and rural governance as a citizen. The rural-urban governance is becoming more complex, significant and intertwined than ever, together with unprecedented mobility, great uncertainty and rapid modernization, this evolving topic is worthy of further exploration.

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