Spatio-temporal pattern of China's rural development: A rurality index perspective

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Abstract

China's rural areas are undergoing considerable spatio-temporal change. To some extent, this change increases the difficulty in our understanding the regional rural development and thus brings about challenges for the making of feasible regional rural development policies and strategic planning. This study establishes an index system to evaluate the degree of rurality in China at county level using national census data of 2000 and 2010, and examines the correlationship between rurality index and major socio-economic and geographical indicators. The results of evaluation and spatial analysis show that the rurality index can largely reflect the spatio-temporal patterns of China's rural development, and the Pearson correlation analysis confirmed that counties with high rurality have been marginalized in the aspects of both geographical location and economic development. As such, the patterns of rural development identified by rurality index analysis significantly improve our knowledge on the recent development of rural China. However, this index is less successful in revealing the agricultural production status quo alone. The authors argue that rurality index is an important tool for measuring rural development, and could provide us with valuable information for local planning and the innovation of rural development policies. Furthermore, integrating rurality studies and rural socio-economic analysis can contribute greatly to the making of integrated and regionalized rural development policies.

1. Introduction

Since the economic reforms and open-door policy were initiated in 1978, China's rural areas have undergone tremendous changes, particularly, changing from a relatively simple, closed peasant economy to a diversified market economy, and the regional disparities of rural development also increased (Liu, 2006; Long et al., 2010). As the central government of China has maintained a comparative advantage and an open door policy that focus on the growth of coastal regions to attract foreign investment and stimulate economic growth, the eastern coastal regions have made remarkable achievements in rapid economic growth and rural development (Liu, 2007; Long and Woods, 2011; Li et al., 2014a). However, the vast central and western regions of China, especially their rural areas, have been lagged behind severely, under the combined effects of the poor economic base and infrastructure, scarcity of human capital endowments, market distortions and poor geographical location (Li and Qiao, 2001; Ying, 2003; Xu and Tan, 2002; Wei and Ye, 2009; Li and Wei, 2010; Li et al., 2013, 2014b, 2014c). In 2010, about 50% of China’s population still lived in the rural areas and 36.7% of total employment was working in the agriculture sector which generated a 10% gross domestic product (GDP) (NBSC, 2011a). Promoting the sustainable development of agriculture and rural areas should still be the priority in the agenda of China’s central government (Li et al., 2014c). And the innovation of the mechanism and policies of agricultural and rural development to solve the problems related to farmers, agriculture and rural areas (so called “San Nong Wen Ti” in Chinese or three rural issues in English) in various regions is urgently needed (Gu and Li, 2013; Liu, 2007; Liu et al., 2014a; Long et al., 2010).

Rural planning and rural policies need a good understanding of what is rural (Cloke, 1977; Waldorf, 2006). Especially, effective rural development policies must be based on an accurate classification of the essential characteristics of the regional types (OECD, 1994;
Such a framework allows the identification of both needs and opportunities in the rural areas (Bogdanov et al., 2008). However, historically rural development and rural areas were intrinsically associated with non-urbanization and agriculture, which is not sufficient to describe today’s complex reality (Isserman, 2005). The consequences of lack of proper understanding of rurality on rural development are that the advantages associated with targeting policies to rural areas based on better understanding of the dynamics and sense of identity are not harnessed (OECD, 2005). A full recognition and better understanding of the properties of different rural areas may provide important information for decision-makers and thus have significant reference value for restructuring the framework of rural policies.

So far, the existing policy framework of China concerning rural development is still mainly composed of uncoordinated one-size-fits all policies (Long et al., 2010; Li et al., 2013). Compared with Europe and the North America, the approach of targeting policies to rural areas based on informed knowledge of rurality in current China is still lacking and this to a large extent, has been responsible for the relatively poor and fragmented rural development in China. As for China, more efforts could be made on improving regional policies and rural policies concerning local characteristics (Long et al., 2010; Li et al., 2013, 2014b).

The concept, measurement and application of rurality, which has been proved to be effective in somewhere else may provide a reference for China (Cloke, 1977; OECD, 1994, 1996, 2003; Madu, 2010; Long and Zhang, 2012). In general, the analysis of discourses over rurality is important on two levels: first, in obtaining more adequate explanations of social change by observing changes in attitudes and values regarding ‘the rural’ (Pratt, 1996); second, it is on a policy level, more knowledge on rurality allows for planning of more inclusive policies (Cloke, 1977; Zografos, 2007). Given this, continuous studies about the evaluation of rurality have been carried out in various countries and regions like England and Wales (Cloke, 1977; Cloke and Edwards, 1986; Harrington and O’Donoghue, 1998), Spain (Ocaña-Riola and Sánchez-Cantalejo, 2005; Prieto-Lara and Ocaña-Riola, 2010), USA (Waldorf, 2006), Turkey (Gülümser et al., 2008, 2009), Serbia (Bogdanov et al., 2008), Nigeria (Madu, 2010), China (Long et al., 2009a; Meng et al., 2013), and so on. It is believed that the index provides a useful tool which is able to give an insight not only into the static distribution of rurality, but also into the processes of rural change over time.

Against this background, this study is intended to evaluate the degree of rurality in recent China at county level, using classical methods and successive national census data, so as to provide a comparable picture of rurality in China and to improve our knowledge about current characteristics of China’s rural and regional differences, and thus provide valuable information for local planning and the innovation of rural development policy. This paper is organized in five sections. Following the introduction, we will give a brief background about rurality and China’s recent rural development from a spatial perspective. The third section introduces the index, method and data source for evaluating China’s rurality at county level. In the fourth section, the index is used to analyze the variations in rurality across space and time. Moreover, the relationship between rurality index and typical socio-economic and geographical indicators will be also addressed. The final section summarizes the results of the analysis and derives a set of policy-relevant conclusions and directions for future research.

2. The research background: rurality and China’s rural development

2.1. Rurality and rurality index

An operational definition for ‘rural area’ is pivotal if proposals, policies and decisions aimed at optimizing the distribution of resources, closing the gap on inequity between areas and raising standards of living for the least advantaged populations are to be put in place (Ocaña-Riola and Sánchez-Cantalejo, 2005). Questions as to what is meant by a rural area, the identification of diagnostic features and attempts at understanding the nature and scope of rurality are continuing themes in the literature (Cloke, 1977; Blunden et al., 1998; Prieto-Lara and Ocaña-Riola, 2010). It is widely acknowledged that rural is a fuzzy concept which is contested in terms of identifying the critical parameters of rural space (Hoggart, 1990; Halfacree, 1993; Shambaugh-Miller, 2007; Wood, 2011). Low population density, abundance of farmland, and remoteness from urban agglomerations are characteristics that people typically associate with rural places. In fact, people frequently use the term “rural” to collectively express their perception of place characteristics that—in one way or another—typify rurality (Zografos, 2007; Duenckmann, 2010). As such, the meaning of rurality depends on the perception of each individual who integrates visions of rurality into everyday life (Libbery, 1998; Hoggart et al., 1995; Halfacree, 1995). Moreover, the developmental processes of social, economic and political restructuring in many countries are reshaping rural areas (Woods, 2007a, 2011, 2013; Labrianidis, 2006), and rural has also been used in different contexts from developed countries to the underdeveloped ones (Dinis, 2006). Thus, the same as rural, rurality remains an elusive concept (Waldorf, 2006; Woods, 2010), and special attention on rural areas is necessary while focusing on the measurements of the differences in the degree of rurality (Cloke, 1977). In general, rurality has proved very difficult to define in an all-embracing manner for three important reasons involving functions, dynamics and variation (Cloke, 2006). Moreover, rural areas are undergoing considerable spatio-temporal change due to social, economic and technological developments, and especially the interaction of various non-quantitative elements affecting rural development (Long et al., 2009a). This kind of change, to some extent, increases the difficulty in our understanding of the rural and rurality. In broad terms, Cloke (2006) theoretically discussed functional concepts of rurality, political-economic concepts of rurality and social constructions of rurality, which have been influential in constructing conceptualizations of rurality. In their efforts to impose some order on the diversity of claims and conceptions related to the countryside, Frouws (1998) identifies three major strands of discourses, i.e., agri-ruralism, utilitarianism and hedonism, while López-i-Gelats et al. (2009) identify four discourses of rurality, i.e., the conservationist, entrepreneurial, agriculturalist, and endogenous development.

In empirical studies, researchers and international organizations such as the Organization for Economic Co-operation and Development (OECD) and European Union (EU) have developed several typologies and different rural indicators in order to better understand the dynamics of rural areas and to develop relevant policies for rural areas (Cloke, 1977; OECD, 1994, 1996, 2003; EC, 1988; Woods, 2013). Especially since the influential earlier work of Cloke (1977), several rurality indices have been developed specifically for different countries. The rurality index of England and Wales (Cloke, 1977; Cloke and Edwards, 1986; Harrington and O’Donoghue, 1998), the rurality indicator of OECD (OECD, 1994, 1996, 2003), the MSU rurality index and the scale measure of urbanicity of USA (Weinert and Boik, 1995; Dahly, 2007), the
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