

A review of rural-urban spatial modelling for developmental states: Comparing experiences in China, India and South Africa

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Abstract

Research on the spatial distribution of economic systems spans a wide variety of disciplines – including economics, geography and urban planning. The interdisciplinary connectedness of these disciplines assists significantly in the understanding of overall patterns in economic growth, urbanisation and context-specific social issues. The recent economic gradient of developing countries has been synonymous with rapid economic growth and urbanisation. Although Brazil, China, India and South Africa, which form part of BRICS, experience relative levels of urbanisation, the challenges of rural-urban migration have been analogous. Empirical evidence suggests that rapid urbanisation does not necessarily mean development. Spatial planning models such as the Core and Periphery Model, Small Town Driving Model, Regional Urban-Rural Integration Model, and Urban Rural Network Model, have been experimented by different states in an attempt to curtail the effects of overpopulation in urban areas and to minimise the gap between urban and rural areas. However, during the industrialisation period, much of the successes of these models have been through nationally driven policies such as periodic five-year growth plans that shifted away from agriculture and which have been biased toward radical industrialisation. The contemporary discourse around decentralisation has, over the years, created room for a less concentrated and dogmatic approach to spatial planning. This has, in turn, however, led to much scrutiny of the viability of top-down and bottom-up approaches.

This paper interrogates existing models of planning and compares ways of redressing the increased disparity between core and periphery regions. The findings from the paper expose that the various integrative planning models that have been presented in the different cases, although slightly different, have a strong correlation and relevance to existing planning theory. Furthermore, experiences from the presented cases hint brazenly for more agglomerative and proactive approaches rather than the recurrent reactive approach to populace planning.

Introduction

The emergence of rapidly growing economies in the global fold has reshaped the global political landscape considerably. Of greater importance, is how long-term shifts in global trade and investment are reshaping the world economy and international politics. Chief amongst these developments is the emergence of rapidly growing economies. The decline of long-standing hegemonies through periodic global economic slowdowns has provided space for new regional centres of power such as BRICs (Kahn, 2011). China, India, Brazil and other rapidly growing economies with large populations, are experiencing expansive urbanisation – although at significantly different levels of growth (Acolin, Chattaqraj & Wachter, 2014). Due to the urban transition several challenges have emerged and have led to unsustainable development and inequalities that retard growth (Castells-Quintana & Royuela, 2015). South Africa is one of the most advanced economies in Africa. Its modern infrastructure, high export levels and mixed economy have been its competitive advantage relative to its regional neighbours. However, unlike its Asian and South American counterparts, who have experienced inequalities due to a rapidly growing population, South Africa harbours a segregationist spatial past as part of the legacy of apartheid. Spatial inequality and urban-rural disparities still define the social discourse – mainly due to apartheid master planning and land issues. All this considered, this paper critiques patterns of population

growth and urbanisation in China, India and South Africa – while attempting to find ways to address the increased disparity between core and periphery regions.

From just a “developing country”, China has unwaveringly imprinted its dominance on the world stage over the last five decades. China’s massive industrialisation and mass urbanisation have contributed to its awe-inspiring, hegemonic, international influence. Migration from rural to urban areas has led to China’s rise, since the encouragement of economic reforms in the early 1980s – including the move to a market economy and rapid economic growth policies (Gill & Kharas, 2007). Evidence suggests that the cause of urban migration is often based on income differences between rural and urban areas (Harris & Todaro, 1970). These undertakings have led to some positive spin offs for the Chinese economy – including rapid economic growth, liberalised trade, localised investment and a more liberal outlook for the social system. However, these spin offs do not spontaneously go down without consequences, and the growing Chinese economy has done very little to address the equally growing economic gaps, class inequalities, migrant/urban sprawl, and a host of other demographic issues that are confronted at the local level (Chen & Lu, 2016). According to the World Bank (2015), the strides that China has taken in its economic transformation have been visible in the movement of 260 million migrants from rural to urban areas in recent years. It is also estimated that urban China’s population will reach 1 billion by 2030; this follows a noticeable decline in agricultural jobs given the preference for more industry-orientated and high-paying jobs in the cities (Chen & Lu, 2016). The growing pattern of urban migration due to mass urban development through high quality infrastructure, reliable power and investment in technological innovation, leaves room for current and futuristic dialogue about rural-urban integration and prospective spatial planning for the future (Chen & Lu, 2016).

India (at a growth rate of 7.2%) is arguably the fastest growing economy in the world; this follows the 1991 economic reforms and other recent pro-growth policies its government has instituted. According to the International Monetary Fund (IMF), in 2017, India’s economy was the 6th largest by nominal Gross Domestic Product (GDP) and the third largest by purchasing power. However, India, despite a growing economy, still faces glaring inequality gaps, several health-related challenges, unrelenting poverty, and irrepressible corruption (King *et al.*, 2011). It appears that adequate rural-urban integration planning for India’s population may be vital for the second most populated country in the world. Furthermore, a migrant influx to urban spaces, if not properly managed, may prove costly for its cities and urban areas. Considered to be one of the most advanced countries in Africa, given its advanced modern technology, infrastructure and a stable economy – South Africa has over the years set the tone for its continental counterparts. However, in recent years, economies such as Ghana, Ethiopia and Cote d’Ivoire have come to the fore and have been growing consistently ahead of South Africa. The effects of South Africa’s meltdown cannot, however, be singlehandedly attributed to one factor, and here’s why. The 2008 recession and then the international economic slowdown since 2012 have been contributing factors to the slow pace of the economy, although political instability decreased investor confidence after the 2017 downgrading by S & P (Standard & Poor, 2017) and Fischer and Moody’s. Moreover, the stagnancy in South Africa’s economic growth and urbanisation pattern has also, for a long time, done little to improve the inequality, poverty and unemployment experienced by the majority of the population. In addition to this, the slow process of land reform and growing spatial inequality have somewhat obstructed the whole developmental discourse (Ngcukaitobi, 2017).

The legacy of segregationist master planning by the apartheid regime has barely been tested by the current government. Twenty one years on, a programme consisting of three pillars – restitution, land redistribution and tenure security – has done very little since the inception of the *White Paper on Land Policy, 1997* to address the spatial and economic inequality gap across South Africa (Turok, 2011). This is further seen in the unchanged disparities between rural and urban areas, the one-way migration patterns, and glaring income gaps between rural and urban dwellers (Turok, 2011). As a notable powerhouse in Africa, and as a newly recruited member of BRICS, South Africa may, sooner than anticipated, need to learn to control rapid growth and take spatial planning lessons from its counterparts such as China and India – which have experienced considerable challenges with the urbanisation and development discourse.

Aim and Objectives

This paper is an attempt at understanding the challenges posed in BRICS countries, in promoting economic development. The paper shows:

How urbanisation affects the rate of economic development in BRICS countries

How international spatial theory plays a role in national integrative policy.

How integrative theory contributes to the urban-rural disparities and equitable urbanization.

Some models to use in generating a solution to the issue - to create a balance in urban and rural development for sustainability at both ends.

Methodology

The research method adopted involves qualitative analysis of archival materials, publications of the BRICS Governments and its agencies, and other secondary data related to spatial planning and the United Nations-Habitat. In addition, primary data was obtained through participant-observation; the researcher purposively observed and recorded the state and quality of physical and social infrastructure, of urban spaces under consideration in the South African context. These research techniques were complemented by a review of literature on urban growth, development and spatial theory and integrative theory. The analysis of this body of data provides the evidence that justify the conclusion and recommendations.

Overview of urbanization and development in developing countries

Development has become easily intertwined with urbanisation, which is essentially the spatial connection of people, commerce and infrastructure advancements. According to the World Bank, in 2014, 54% of the global population lived in urban areas (World Bank, 2014). This, according to the World Bank, is expected to increase to 66% in 2050; furthermore, noteworthy is that, of the forecasted 6.3 billion target by 2050, the 2.4 billion increase from the current 3.9 billion is likely to be seen in Africa and Asia (World Bank, 2014).

The World Bank further suggests that the forecasted trends in urbanization in Africa and Asia will offer for the inclusion for pursuing upward mobility across rural and urban expanses, the accessing of better services, and enhancing the quality of life in these two regions (World Bank, 2014). Urban areas tend, on average, to offer higher standards of living than rural areas. However, more urbanisation does not automatically translate into more development - and not all urban dwellers can reap the potential benefits of urbanisation (Chen & Lu, 2016). Cities are generally attractive for different groups in society; capitalists idealise the opportunity of achieving greater profit and extending their clientele, while the working class seek opportunities in the already competitive job market. In addition, urbanisation is known to yield two conflicting results. On the one hand, it offers better opportunities for investors and migrant workers, including a better quality of life, improved infrastructure (e.g. transport, housing, service facilities), skills, innovation, economies of scale and productivity - while on the other hand the agglomeration of economies is likely to produce negative externalities (e.g. disease, demand for more infrastructure in limited spaces, congestion, augmented crime, spatial inequality, pollution and a variety of other environmental issues) (see Chen & Lu, 2016).

In light of the above, it seems that if migration is not handled properly, it will likely perpetuate further poverty and marginalisation for immigrants, and further contribute to the formation of much more complex slum/shantytown situations. In countries such as China, the process of rapid urbanisation has forced cities to adapt to elasticity, the rapid diaspora toward urban areas has gradually congested the city and has created precarious and unintended springiness to the growth of the city, and the consequence of this may be environmentally detrimental if proper planning is not approached enthusiastically (Chen & Lu, 2016). In attempts to curtail population congestion, planners and governments have gradually moved toward a more integrated system of planning that draws closer rural and urban spaces. Recently, Lewis's Urban-Rural Integration Theory has been a favourable alternative for rural-urban linkages amongst most contemporary planners in developing states, as the need for rapid rural development mounts in order to control urban spill-over and sprawl from the city. Lesetedi, 2003 in (Ndabeni, 2013. p1) defines rural-urban linkages as the following:

"Rural-urban linkages can be defined as the structural social, economic, cultural, and political relationships maintained between individuals and groups in the urban environment and those in rural areas."

However, this is not necessarily the most effective type of spatial planning for urban-rural integration – particularly because the nature and levels of urbanisation vary, and, sometimes, depending on the context, require more than one planning approach. According to Ndabeni (2013), when planning for rural-urban development it is vital that planners know the pertinent context specific push and pull factors that lead to urban-rural migration and vice versa. Figure 1 below highlights the basic reasons for shifts in migration according to *Action Against Hunger* (2012). In addition, Ndabeni (2013) mentions access to basic services, transportation convenience and better employment opportunities as key factors influencing rural-urban migration, she further includes high cost of living and unemployment as pertinent influencers to urban rural migration.

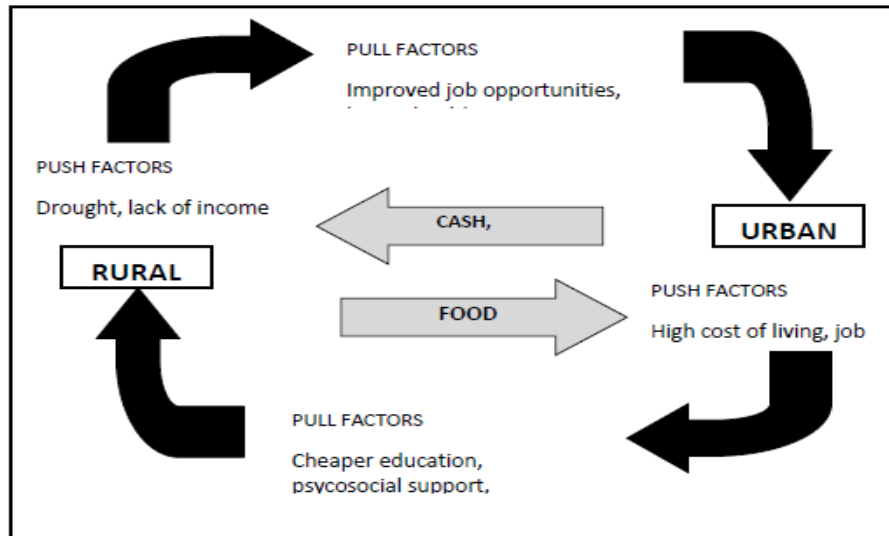


Figure 1: Push and Pull factors in migration

Source: Action Against Hunger (2012)

The next section thus focuses on the variance of integrative spatial approaches in the contemporary planning discourse. The section towards its conclusion, further notes how China, India and South Africa are dealing with urbanization rural-urban integrative modelling.

Rural-Urban Integration Models

Core-Periphery Theory

Conventional models for planning such as the 1963 *Core-Periphery Model* by John Friedmann and other contemporary planning models were largely inspired by Ebenezer Howard's *Garden City Model*. These planning theories have been used by planners to identify the spatial distances from the core (Friedmann, 1966). The Core-Periphery Model works on many scales, from towns and cities – to a global scale. In context, peripheral implies that the nature of rural problems is caused by a lack of key resources and assets for economic development. According to Friedmann (1966), the Core-Periphery Model has (in its prime) managed to steer planners meritoriously – as the divide between agricultural town dynamics differed from industrial town dynamics due to the transition in epochs. The idea was essentially to make cities much more competitive globally, and the fixation on them added to the competitive nature of international trade. However, over the past few decades, the influx into urban areas seems to have been faster than was naturally anticipated by this theory, and it appears that many peripheral areas – instead of growing into cities – have been stagnant due to a lack of resources, planning and investment. Urban migrants have left small cities in order to get a better living in cities, while technological advances and infrastructure in the city have created a distinctive variance between rural and urban areas, with the city becoming more attractive but less accommodative. Furthermore, the nature of such complexities has created a significant gap in inequality among cities and smaller towns, and dual economies are extended rather than curtailed. From a developmental perspective, it is important to note this as a shortcoming of

such a theory, and, in addition, with rapid globalisation taking place, the Core-Periphery Theory may fundamentally depend on how governments decide to approach socio-economic issues at a local level.

Small Town Driving Model / Satellite City Theory

The small town driving model mentioned by Zhao (2009) is popularly associated with Ebenezer Howard's Satellite theory, which is premised predominantly on towns that are built outside big cities. The Satellite theory originated from Howard's Garden city theory, which maintained that around cities should exist smaller towns which resemble satellites around the planet. This bottom-up approach looks at the agglomeration of towns as pioneers of development. The Small Town Driving Model favours and focuses on local development, but, more importantly, focuses on towns with a competitive advantage (Zhao, 2009). Towns with resources and scarce skills are likely to develop from this type of approach. These neighbouring towns rely chiefly on sector and industry agglomeration. The sharing of skills, knowledge and infrastructural flows in trade, is encouraged in such a set-up - meaning that growth is systematically shared throughout the cohort.

Regional Urban-Rural Integration Model

Contrary to the Core-Periphery and Small Town Driving Models, the Regional Urban-Rural Integration Model assumes that the whole region should play a collective role in the process of urbanisation. This model argues that towns should not be built to advance the city's dominance (Zhao, 2009). However, the model further notes that cities should strategically set the tone for the region's development planning, industry structure and arrangement of infrastructure - while smaller towns unintentionally benefit through trickle-down effects brought by the city's interlinked coordination.

Urban-Rural Network Development Model / Urban-Rural Integration Theory

Much like the *Small-Town Driving Model* which focuses on creating town-town networks and the use of agglomeration economies, the *Urban-Rural Network Development Model* suggested by Chinese author Zhao (2009) borrows its roots from the work of German statistician Ernst Engel, as early as 1847- entitled, *the principles of communism* and later from Ebenezer Howard's work entitled *Tomorrow: A peaceful path towards real reform*. These two theorists put forward the idea of urban and rural integration; however, emphasis was based on the agricultural and industrial parts of then Europe. The urban-rural integrative model equips the former with comprehensive and coordinated development of urban and rural areas, which means that the body of the main economic activities between urban and rural areas constitutes an orderly relational system and obtains unique functional effects of network organisation through this process. In planning for rural-urban development in this model, the following should be observed: trade of agricultural products, the use of savings, requisitioning of land, labour transfer, and environmental dividends. Accordingly, urban-rural integration means that key factor allocation must be changed from exclusively benefitting urban development through to benefitting a balanced development of both urban and rural areas (Zhao, 2009).

The four models mentioned above, abstractly appear to be somewhat intertwined and relatively flexible, as they are very open to collaboration and integration. These models share a common goal of regional competitiveness, while, on the other hand, merging the underdeveloped world with the fully developed world. It is therefore vital that planners and governments in developing states like China, Brazil, India and South Africa, find a way to marry the pro-poor and pro-growth planning agendas - before considering the execution of planning projects. An interesting approach that could be essential when planning urbanisation for these developing and other developing countries, could be the agglomeration of economies - much like the *Small-Town Driving Model* and the *Urban-Rural Network Development Model*.

Economic Agglomeration as a Plan

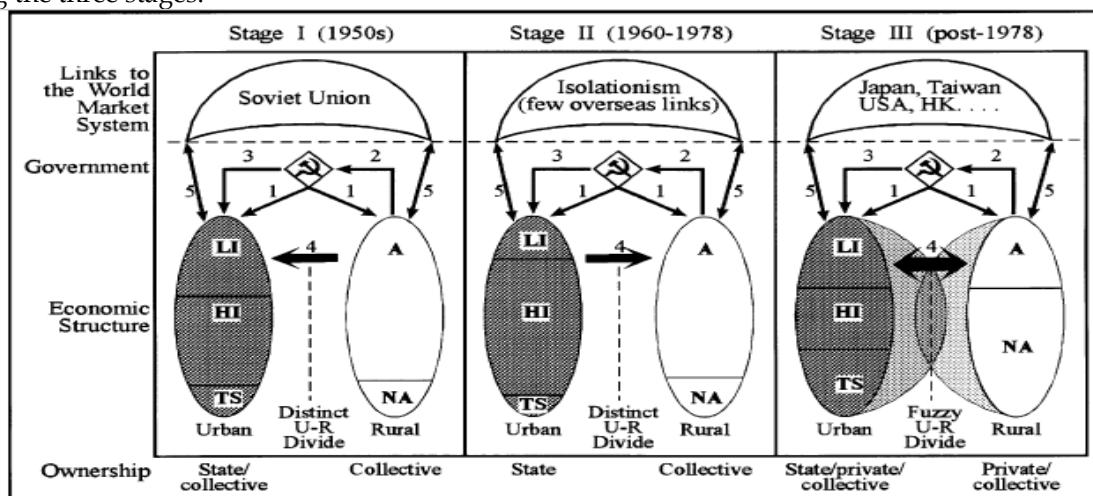
Agglomerate economic theory was first mentioned by German economist; Alfred Weber in 1909 in his publication *Industrial location theory*. Weber (1909) defined agglomerate economy as a benefit gained from production that occurs at the same place according to a certain scale. Empirical evidence supports the notion that increasing returns to measure constancy gives rise to 'agglomeration economies', which is what explains the concentration in urban economies. Haggblade, Peter and Reardon (2010) suggest that

spatial economies are secondarily a result of agglomeration economics. They refer to urban centres as *growth poles, or nodes of productive activity* (similar to the Core-Periphery Model) that essentially generate their own economic gravitational fields.

According to this view, rural areas develop from increased productivity in urban areas and from the trickled down effects of a city's agglomeration competency. Haggblade *et al.* (2010) further believe that agglomeration economies create space for a bigger market reach - for example, the more clients in a specified environment, the more likely firms will want to locate to those places. Therefore, the bigger the specific group in a location, the higher the skills and resource sharing, and the higher the possibility of other firms investing there. What differentiates the new economic geography from the works of *inter alia* Ebenezer Howard, Walter Christaller and John Friedmann, is how modern planning theory has been able to intuitively fuse economic modelling with spatial planning. Post-modern theory articulates and integrates previous work like central place theory, cumulative causation, labour and rent theory, and location theory. Agglomeration economies appear to be more meaningful in reconceptualising spatial planning through the use of scale economies, the spatial extent of the market, and the cost of distance. The concept of *agglomeration-led spatial planning* infuses economic theory with space theory, and further assumes that without the other, effective economic and spatial planning is compromised.

The Case of China

Although China has had a rapidly growing economy over the last three decades, the results of prolonged historical dualism in China's economics have had a protracted effect on the urban-rural discourse. Historically, the 1950-1960 period for China signified an incremental surge in rural to urban migration, to fix this the national agenda invested in structural reforms such as agro-processing in rural areas by government and substantially reversed the trend to urban-rural migration during the 1970's (Kojima, 1987; Tang, Wing-shing & Jenkins, 1990). According to Wang (1997), these two periods contributed significantly to China's independence from the world economy and made China self-reliant region that had controlled and effective production and distribution systems between the farmlands and the city. These two stages signified the capability of the that the Chinese to unleash potential in both urban and rural spaces, the strong administrative transfer of funds from rural areas to develop city-oriented development assisted significant in creating regional local economies. The latest 'open door' stage by the Chinese, has integrated china into the world economy has diversified economic activities between rural and urban areas, creating a breakdown in the structure of rural and urban and former dualistic economies (Wang, 1997). Figure 2 is a depiction of the Changing Rural-Urban Relations in China during the three stages.



Notes: LI=Light Industry; HI=Heavy Industry; TS=Tertiary Sector; A=Agriculture; NA=Non-Agriculture; U-R=Urban-Rural; 1-controlled production and distribution system; 2 & 3-surplus transfer mechanism from rural agriculture to urban industry; 4-mobility of population; and 5-links to the world market system.

Figure 2: Rural-Urban Relations in China; Stage 1-3.

Source: Adapted from Wang (1997)

The rapid increase in rural-urban and urban-rural migration over the years, including the remarkable success of economic reforms and relaxation of institutional controls of rural-urban migration and success of *Township and Village Enterprises* (TVEs) has been remedial to China's densification problem (Xingqing, 2009). In addition, the recent adoption of a radical policy to promote rural-urban integration planning in China depicts further optimism by policy-makers in narrowing down spatial disparities (Chen & Lu, 2016). In 2003, the Chinese government implemented the *coordinated urban and rural development programme* in various cities that is dedicated to eradicating disparities between the two spheres. The use of such policy suggests that the effects of these spatial patterns will be incremental over time, and for the Chinese, these new policies give confidence that the widened urban-rural gap can be halted, and that balanced urban-rural development can be promoted. The increasing rural-urban interaction and integrated regional growth pattern in China is well illustrated by examples such as the Shenyang-Dalian urban corridor and the Suzhou Model (which are be discussed below), where the distinction between rural and urban is rapidly breaking down as economic, political, administration and social forces combine to generate a new urban and regional form (Wang, 1997; Jiang & Zhang, 2011).

Example of Shenyang-Dalian Urban Corridor

The Shenyang-Dalian urban (See Figure 3) corridor is a 30 km long transportation corridor located in the southern parts of Liaoning province in Manchuria. The Shenyang and Dalian corridor and includes a number of the city cores, suburban areas, as well as the surrounding rapidly urbanising rural areas (Wang 1997). According to Wang (1997, p4)

"Geometrically, this urban corridor is dominated by multipolar zones which run mainly along the major transportation lines. At the north of this region is the dominant pole of urban clusters including the large cities of Shenyang (with an urban population of over 4.6 million), Anshan and Fushun (both are over 1.3 million), Benxi (947,000) and Liaoyang (668,900). At the southern end is Dalian (2.5 million) which is the most important port city of Manchuria and acts as this region's secondary metropolitan centre (SBS, 1996). New Dalian, a new city of a million people, has been planned about 30 kilometres northeast of Dalian city. Between Shenyang and Dalian is the port city of Yingkou (570,000) and the newly-developed economic development zone – Bayuquan is another port."

Wang (1997) further maintains that the Shenyang-Dalian urban corridor covers less than a quarter of the whole province, but contains 50% of the provincial population. Furthermore, Wang (1997) adds that the corridor produces two thirds of the provincial GDP and gross agricultural and industrial output. The corridor appears to be the major centre for this region, and because of its coastal location- the Chinese government have prioritized it as an economic development zone and economic growth stimulus (Yeung & Hu, 1992). Due to the economic activity in this corridor, the government has committed to upgrading several rural settlements on the corridor in order to promote rural-urban linkages between Shenyang and Dalian (LSB, 1996). According to Mc Gee (1991) the coexistence of both agricultural and non-agricultural activities within one economic region are amongst the biggest utopia of spatial and economic planning. Therefore, the Shenyang-Dalian urban corridor has become epicentre agricultural and non-agricultural activities, with high levels of rural industrialisation, and increasing growth of non-agricultural occupations.

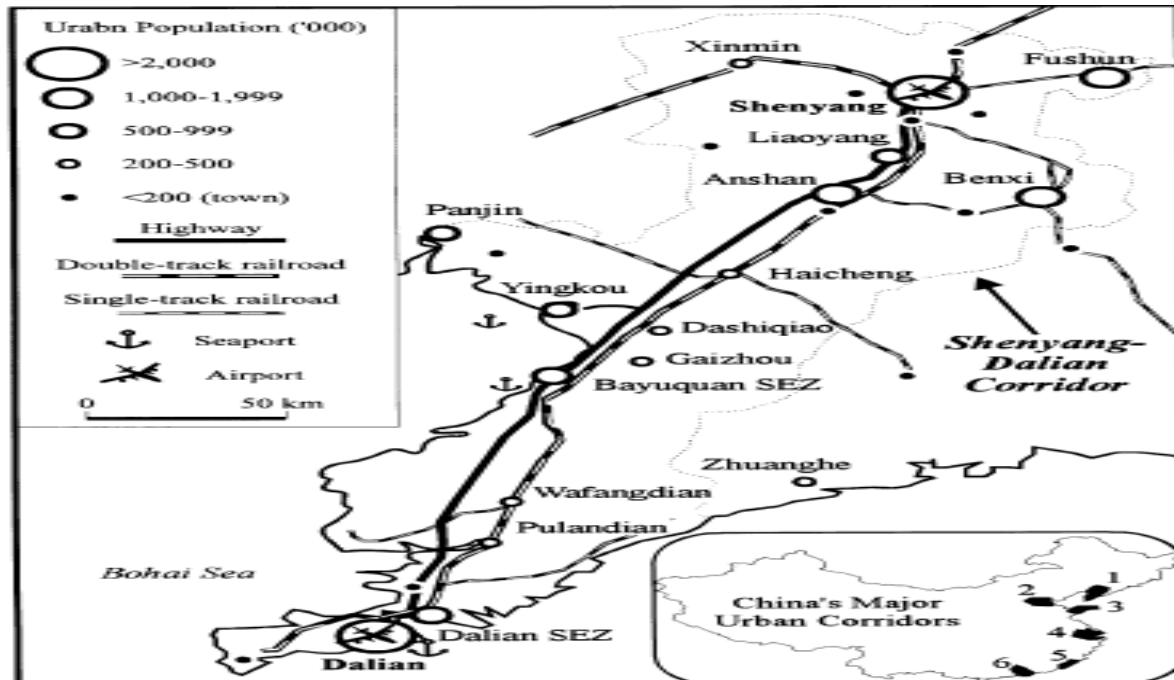


Figure 3: Shenyang-Dalian urban corridor

Source: Adapted from Wang (1997).

Example of Suzhou

Suzhou is considered as one of the areas with the highest levels of economic development and urbanisation in China and has been arranged as a trial area of an urban and rural integrated development programme by its government (Jiang & Zhang, 2011). Thus, the reform of Suzhou in urban and rural integrated development is not only an inherently context-specific demand, but also an obligation of national and regional development. The example of Suzhou – one of the fastest growing regions in China – points out how proactive spatial planning can transform a rural region.

Suzhou is an original beneficiary of the “South Jiangsu Model”, and has been an unparalleled example of rural-urban development. Since the inception of the 1980s economic reforms in China, Suzhou has taken substantial strides to alter its whole developmental discourse. There has been a further increase in economic activity in Suzhou’s rural economy, including the mapping of developed industry nodes, and this has shrunk the countryside and increased industrialised urbanisation (Jiang & Zhang, 2011). Using integrative statutory planning and a vibrant industry, has contributed to the Suzhou’s speedy development and sustainable urbanisation. The *Town and Country Planning Act* implemented by Suzhou’s government includes urban system planning, urban master planning, town master planning, and village planning. This legislation fuses diversified planning systems that revolve around socio-economic and environmental cautions, and, accordingly, the plan furthers urban-rural integration planning that is aimed at covering urban layout planning, industrial development planning, land-use planning, and urban-rural integration system innovation (Chen Junliang, 2009). The exchange in resources between the different worlds – including the supply of public goods and services such as infrastructure, compulsory education, health care and social insurance – will be catalytic if channelled decorously (Jiang & Zhang, 2011). In addition, urban-rural integration means that this amalgamation of two disparate spaces will require sufficient buy-in from policy-makers and local investors if the gap is to be shortened rapidly. Suzhou has, however, set the tone for most Chinese regions, and its progress will be a lesson for other Chinese provinces.

The Case of India

Urbanisation in India today is a complex and multifaceted discourse. Its rapid economic growth and spatial dynamics are synonymous with booming, unplanned and unsustainable megacities with unparalleled spatial disparities. Notably, with urbanisation levels just below 34% in 2016, India is

considered to be the least urbanised country among the top ten economies of the world (World Bank, 2015).

An empirical study on the urbanisation of India's cities and towns concluded with three significant findings on Indian urbanisation. Firstly, Cali (2008) notes that disparities between urban-rural have contributed significantly to the uneven economic and spatial development patterns of India. In addition, the study further noted a negative correlation between the population growth of India and urbanisation. Lastly, evidence has suggested that over the years there have been convergences in growth rates among all Indian towns – with more and more agglomerations gravitating toward the biggest cities (Cali, 2008). It seems that agglomeration contributes to creating economies of scale and sustainable development. However, notable disadvantages of such development include the potential for growing further inequality. That said, it is important to understand the nature and effect of urban agglomerations and their effect on a rapidly developing economy – before pursuing such an approach.

In reviewing India's dynamism in terms of economic growth, Kotwal, Ramaswami and Wadhwa (2011) note that in India – unlike other developing economies where agricultural labour fell during their developmental phase – the share of agricultural employment has instead risen continuously in India. However, unlike India's regional counterparts in Eastern Asia that focus on manufacturing as their main source of growth, India relies very much on the service industry (Chandrasekhar & Sharma, 2014). For this reason, India's growth story appears to follow a very different storyline. While India has sustained an annual GDP growth rate of over 5% over the last decade, it has experienced substantial jobless growth – particularly in rural areas. This has raised some pertinent questions regarding India's urbanisation, such as: "How urbanised is India, the size of its peripheral, the saturation of its cities?"; and "What rural-urban migration is implied for urbanisation, poverty and unemployment patterns across rural and urban India?".

It was envisaged that the establishment of a 3-tier structure in 2005-2006 for decentralised planning in urban areas under the Jawaharlal Nehru National Urban Renewal Mission (JNNURM), by the government of India, would result in strengthened rural-urban linkages. According to Chandrasekhar and Sharma (2014) however, five years later not much has been done and the plan did not usher in a new era in urban planning or significantly strengthen rural-urban linkages. Migration, particularly net rural-urban migration, was expected to speed up in the 1990s with the inception of economic reforms and acceleration in economic growth, but this has not necessarily been the case. In some countries – notably China and Indonesia – migration and reclassification has accounted for 70-80% of urban growth in recent decades (United Nations, 2005). Furthermore, in India, it appears that urbanisation between urban-rural areas has been tricky. The over-crowding of urban areas has led to a derelict quality of life in Indian cities, while rural areas have seen less economic growth and spatial development given the increased migration to megacities (King, Rathi & Sudhira, 2011). Rural poverty-induced urbanisation has resulted in a shift of rural poverty to urban poverty, with the emergence of slums in all the major Indian cities – where the urban poor live in dismal conditions without basic amenities such as water, sanitation, safe shelter, and health facilities.

McKinsey Global Institute (2010) estimates that the population of urban India is likely to increase from 340 million in 2008 to 590 million in 2030. It further projects that the states of Punjab, Gujarat, Tamil Nadu, Karnataka, and Maharashtra, will be more than 50% urbanised. With this immense urbanisation anticipated in India, along with the continued urban migration of the rural poor – a decent life in the major cities will become untenable for many. King *et al.* (2011) further notes that a lack of integrated spatial planning looking into the development of infrastructure, basic amenities, educational and health needs in the rural areas, small towns, and cities – has led to "rural push" factors that push people from the rural areas, small towns, and cities into the large metropolitan cities. This is without the cities having adequate, functional infrastructure to help the population mitigate the impact of this urban explosion and to plan for the future. It is crucial to balance the demands of high growth on the one hand and to ensure sustainable growth on the other hand. In the assessment of King *et al.* (2011), it seems that, in the case of India, the urban agglomeration model has adequately not worked to integrate the rural and urban areas, and thus there is an imperative need for an alternative bottom-up approach that encourages a spatial and economic design of rural areas and smaller towns, that makes urbanisation sustainable. This requires

investment in inter-regional transport and telecommunications to facilitate the deflection of economic activities from the mega cities; it also requires fiscal decentralisation – so that smaller cities are connected to bigger cities and towns.

Example of New Delhi and Gurgaon

In terms of land use planning in India, the case of Gurgaon and Delhi is a good example of rural-urban linkages, due to investments in road networks along with government infrastructure, during the last ten to twelve years, Gurgaon has experienced an increase in population, land value and land use (Gupta, 2014). In addition, due to the exchange in mobility and effects of urbanization, commercialization and industrialization between Delhi and Gurgaon, according to Gupta (2014), in 2011, it was noted that the population of Gurgaon district had grown by 44.15% since 1991. In 2011, the total population of Gurgaon was standing at 2.63 million in 2011, it is further estimated that it will grow up to 4.33 million and 5.83 million in 2021 and 2031 respectively (Gupta, 2014). The above case illustrates just how less developed secondary regions like Gurgaon can benefit from the trickledown effect they receive from being geographically closer to bigger metropolises such as New Delhi. The above example between Gurgaon and New Delhi quite distinctly depicts the example of how the metropolitan functions as a growth pole through the Regional *Urban-Rural Integration* Model as a means to advance developing towns and new cities.

The Case of South Africa

As a new member of BRICS, South Africa has a very good chance of benefitting from rapid growth – with potential to increase demands for export commodities through the recently established broad-based clientele across the globe. While South Africa has maintained reasonably sound trade equilibrium, it needs to do more to enhance skills and productivity competitiveness in areas of comparative advantage. Given that South Africa has the second largest economy in Africa, its inclusion in BRICS has further boosted its geopolitical significance. Its economy constitutes a third of economic activity in sub-Saharan Africa, and 80% of economic activity in the Southern African Development Community.¹ The probable exchange of skills and knowledge among South Africa and other BRICS countries will potentially lead to more competitiveness in the job market, which may well help lift labour-intensive exports. In addition, with the visible decline in agriculture in recent years, it appears that there will be a visible decrease in incomes in rural areas – meaning that rural households will be forced to develop new and more innovative forms of livelihood strategies or even have potential migration to cities. The rapid industrialisation and urbanisation wave of other developing countries may well hit South African shores sooner than anticipated. Therefore, the need for adequate spatial planning for cities and town will soon be an imperative in order to ensure future sustainability.

The tricky part for South Africa's futuristic planning however lies in addressing the effects of the pre-democratic land dispossession laws that still determine the livelihoods of many South Africans – 24 years after the end of apartheid. For example, policy such as the 1913 Land Act and the 1950 Group Areas Act were deliberately designed by Afrikaner colonialists and later the National Party to construct racial, economic and spatial inequality among South Africans. The Acts purposefully divided South Africa along racial lines; black South Africans, Indians and coloureds were forcibly moved and confined to less favourable areas and were stripped of land ownership – while white South Africans enjoyed the privilege of the apartheid system. The remnants of such obscure spatial planning left the post-apartheid government with the daunting task of linking spatial planning and infrastructure development between previously disadvantaged areas in rural areas and townships, with privileged urban areas. Interestingly, two decades after apartheid, according to the World Bank (2015), the Gini coefficient for South Africa was estimated at 0.63 % in 2015 – the highest in the world. Accordingly, South Africa lays claim to the most unequal cities in the world. In areas such as Cape Town and Johannesburg, racial and spatial disparity can still be seen in demarcation dynamics more than two decades after the end of apartheid. Socio-economic divisions are closely knitted between neighbouring locations such as Hout Bay and Imizamo Yethu

¹ <http://www.africaneconomicoutlook.org/en/news-events>

Township (see Figure 4); Sandton and Alexandra (see Figure 5); and Morningside & informal settlements on its edge (see Figure 6). These areas are stark examples of how spatial equity has evaded adequate redress in the democratic era.



Figure 4: Hout Bay and Imizamo Yethu Township (right) (Cape Town)

Source: <http://unequalscenes.com/hout-bay-imizamo-yethu>



Figure 5: Aerial view of Sandton and Alexandra (Johannesburg)

Source: <http://unequalscenes.com/alexandra-sandton>



Figure 6: Morningside and informal village (Durban)

Source: <http://unequalscenes.com/durban-metro>

There has, however, been some progress in the quest for spatial and economic equity between developed and less developed areas – particularly in terms of new transport systems and bulk infrastructure development in certain areas. This has been evident mainly between cities and townships and less with rural areas – which generally fall on the outskirts of the periphery. Strategic spatial planning in the post-apartheid era has attempted to promote more accommodative and integrated cities to redress the patterns of past inequality. Although some projects have been successful, the general consensus on the success rate of rural-urban integration has been that it has been rather dismal. This can be partly attributed to shortfall in respect of the land reform, the inadequate resources of local municipalities and deeply rooted corruption in government.

Johannesburg, Cape Town and Durban are South Africa's economic capitals and have strong global and African links. What's interesting though, is delayed discussion of the emergence of nearby contemporary secondary cities and towns as futuristic financial capitals. Accordingly, urban-rural migration is not always restricted to large urban centres. For example, in the Philippines, according to von Braun (2007), migration to peri-urban centres and small neighbouring towns is common as they offer urban-like opportunities in education and employment, and secondary cities or secondary urban centres in Latin America have recently attracted new investment and industries that would have previously been directed to large cities. As a consequence, these towns have also increased their role as migration destinations (Tacoli, 1998). Because of the core and periphery spatial divide created by apartheid, developed cities have maintained their status quos as hegemonies in the economy, and have left little room for emerging towns to develop – thus coercing a continual one-way pattern of migration to urban centres and contributing to a deficit in skilled labour in less-developed areas. Of late, as an attempt to lessen the spatial inequality gap, some local governments have mutually entered into memorandums of understanding with local investors and civil society through initiatives such as Public-Private partnerships (PPPs) – with the piloting of large-scale human settlement and mixed-use projects.

Peri-Urban-Urban Integration in Johannesburg and Durban

This bottom-up approach has proved relatively successful in some cases where the framework has been consultative and open among the various stakeholders – including the affected communities. Of note, however, is how the increase in city-driven developments in South Africa has, to a certain extent, addressed the basic issues of spatial inequality. In Johannesburg – particularly between Sandton and Alexandra where there is a constant flow of traffic with people commuting from Alexandra Township to urban Sandton – there has been experimentation with residential developments which mix low- and middle-income housing provided by the private and public sectors in these areas (COJ, 2009). While the Johannesburg Metro has experienced considerable growth on the urban edge, problems around spatial planning still loom in complexity, as the density of the city continuously grows (COJ, 2009). eThekweni Metro similarly to Johannesburg Metro also draws a comparable strategy of integrative development through consultative projects such as collaborations with reputable local stakeholders like *Tongaat Hulett* (a significant role-player in the agriculture and real estate sectors in the province of KwaZulu-Natal) that has joined forces in a number of mixed-use developmental projects with the eThekweni Metro. These include the construction of middle income housing, malls and transport infrastructure on the outskirts of peri-urban Durban – for example, *Cornubia*, Bridge City and uMhlanga Ridge Town (Charlton, 2009; Department of Housing, 2004; Sutherland, Robbins, Scott, & Sim, 2013). In less developed areas such as rural areas, however, development of this kind can be problematic. In fact, the formation of such partnerships can be a challenge, as issues of land ownership and tenure come into effect. In addition, rural local government further faces issues of being under-resourced financially, tender corruption, and also a lack of clear policy that endorses such opportunities. Empirical evidence on relations among local stakeholders in rural areas by Mdllalose (2015), suggests the multi-layered disconnect in communication between the traditional council and the respective local governments is an underlying but also pertinent factor to counter-progressive integrative planning, and also a level of distrust with regard to developmental projects. Such complexities in governance demonstrate how politics often gets in the way of development and appropriate spatial planning. Outside stakeholder dynamics, however, it appears

that local government in rural towns focuses greatly on day-to-day functions – rather than on the long-term developmental agenda.

The biggest counter urbanisation challenge faced by rural towns is the scarcity of competitive space, and the fact that vast pockets of land are diversely owned that make it a challenge for planners to plan and for local government to attract foreign direct investment (FDI) (Todes, Kok, Wentzel, van Zyl & Cross, 2010). However, even though there have been a handful of successful initiatives in less than a handful of rural towns, most cases have been disappointing. In essence, South Africa's land dynamics play a central role in determining South Africa's spatial future; the above factors therefore, make it an added challenge for integrative approaches like the rural-urban integration theory used in parts of China to successfully work within South Africa's current confines. The economic stagnation of most rural and peripheral areas can perhaps be attributed to weak financial capabilities of firms, 'second best' technologies, and a dependence on external knowledge sources. Incremental notions of innovation suggest that branch plant economies and low-technology regions can also be repositories of forms of practical know-how that provide localised competitive advantage (Malmberg & Maskell, 1997).

Conclusion

Urban agglomerations are very important to understand, because they give a detailed indication about area synchronisation (UNDP, 2014). Chen and Lu (2016) suggest that, when planning ahead for future urbanisation and urban-rural development, developing countries should aim at a policy that gives leeway to the spatial agglomeration effect and creates a type of process that allows for social harmony in the cities. In the same breath, Gill and Kharas (2007) further suggest that in countries such as China, cities are best positioned to push the regional urbanising and development agenda of the country, and that this can be done by observing some significant points; firstly by information sharing. According to Gill and Kharas (2007) having more input, producers will enjoy a larger supply of input to give play to a scale economy, and because of this the market demand will also be higher since input sharing by local vendors will increase as they provide highly specialised products and services according to demand. Secondly, the process of learning, through spatial agglomeration helps accelerate the flow of knowledge among labour and business in different industries. In addition, Au and Henderson (2006) note that the scale effect mainly comes from diversified inputs in the process of population agglomeration. Lastly, Gill and Kharas (2007) include matching as a catalytic feature in spatial agglomerations, in a perfectly competitive market; enterprises, through input, can adequately locate the most skilled labour and employees within the designated space. In planning for city-propelled development and urbanisation in China, an important factor that may cause discord during rapid urbanisation, however, is the formation of a dualistic society caused by polarisation between hukou and non-hukou populations – which is attributed to the household registration system (Chen & Lu, 2016). For China to avoid hitches, discrimination-free public services and equal development opportunities must be encouraged. Furthermore, according to Ding and Zhao (2011), efficient gains would be significant if current SEZ (Special Economic Zones) are integrated with each other as well as with the city proper, if university towns are further developed to accommodate no more than a few colleges, and if CBDs are concentrated with high-value activities. Ding and Zhao (2011) however, insist that mixed land use may not be an appropriate policy instrument to promote smart growth in Chinese cities, because of the high degree of existing mixed land-use patterns.

In the African context, as noted in the beginning, South Africa's joining BRICS will be a kick start in the right direction for the African economy. However, the planning approach used by the Indians and Chinese may need to be tweaked if there is to be any chance that it will work in South Africa. The idea of city-centred development may not necessarily work for African countries, and this is why, between urban and rural areas, the gaps are glaringly wider due to factors like colonial master planning and population size. In contrast to India and China which generally have dense urban and rural populaces due to their large populations, South Africa and many other developing countries, on the other hand, may find the idea of centre-periphery development challenging, and here's why. First, the technological, infrastructural and educational gap between urban and rural areas is too large, and therefore the agglomeration effect for smaller populated developing countries may create an even wider gap across regions. Second, the gap between the city and rural areas is widened – not necessarily because of

geographical distance, but, as there is no real exchange of resources, the one-way input like the flow of migration moves towards cities, and, interestingly, rural areas are left with no option but to be consumers of the city Todes *et al.* (2010). Therefore, balanced regional development by means of a rural-urban integration model would be an interesting option for South Africa at present – even though this may sacrifice the pace of rapidly developing cities like Johannesburg, Durban and Cape Town. Moreover, as a short-term goal, robust local investments on the current major and secondary cities may be what South Africa needs, but at a longer term, when rural areas have reached a certain development level, the spatial agglomeration of local markets would also create competitiveness among urban and peri-urban areas and therefore burn the bridge between urban and rural areas. In essence, three principles of urban-rural integration planning should be taken into account: respecting public opinion, the protection of arable land, and intensive development. The benefits that are traceable to urbanization will continue to elude people and developing countries due to lack of vision, planning, good governance, transparency and accountability.

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