

UNBALANCED SAUDI ARABIA

APPLYING RANK-SIZE RULE TO EVALUATE SAUDI URBAN
GROWTH PATTERNS

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The purpose of this paper is to investigate the city-size distribution of Saudi cities during the period from 1989 until 2010, to examine how the distribution evolved throughout this twenty-year period, and to explore the factors that have influenced the growth of cities in Saudi Arabia. The size distribution was found to be far from the rank-size ideal of a constant product of rank and population. Three major urban areas were found to have a very high percentage of the national total population. Although the national five-year development plans were aiming towards balanced population growth throughout the country, this goal has not been achieved yet due to lack of coordination and comprehensive planning.

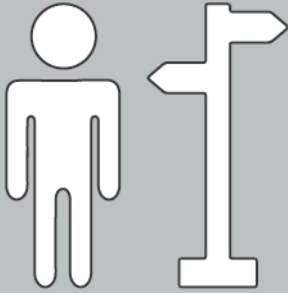
The Saudi Arabian economy's dramatic shift toward oil production over the last 60 years has had a substantial influence on the country's cities and their composition. This transformation, which began in the late 1930's, was a central development in the history of Saudi Arabia. Since then, massive resources have been diverted to the provision of infrastructure and the management of urban growth, and this has continued to escalate at a high pace. In 1990, the level of urbanization in Saudi Arabia, 77.3 percent, surpassed the average level of urbanization in the Arab nations, 56.4 percent (Alkhedheiri, 2002). In 1970, the national government began to plan for this rapid growth with recurring five-year national development plans. These plans aim to prevent the overconcentration of resources in just a few urban areas. They also ensure that all regions in Saudi Arabia, particularly the rural areas, have an equal opportunity to develop their full potential, and that they are provided with a full range of government services. However, a significant variation of growth in size and prosperity across Saudi cities continues today.

This article examines the extent to which Saudi cities are moving toward more balanced growth via investigating the changes in their population size distribution from 1989 to 2010. The article also explores the factors that have influenced the observed growth pattern during this period. Rank-size rule, which describes a general trend observed in urban populations worldwide, is used as a basis for analyzing 26 Saudi cities, with an emphasis on how the population and rank of these cities has changed from 1989 to 2010. The article finds that Saudi Arabia does not follow the trend hypothesized by the rank-size rule.

Rank-size rule is an empirical tool that is commonly used in contemporary urban studies to estimate the relationship between a city's population relative to other cities within a system, and often the system is simply a nation or a region. Rank-size rule hypothetically predicts that the second most populous city in the nation or region will have half of the population of the most populous city, the third most populous city will have one-third of the population of the most populous city, and so on (Shukla, 2010). For instance, Los Angeles, California has about half the population of New York City, New York, the most populous American city, and Chicago, Illinois' population is about one-third the population of New York City. In other words, rank-size rule assumes rank times population is constant across cities, which is equal to the population of the largest city. Investigating rank-size distribution at one point in time and comparing it with the hypothetical rank-size rule assumption allows one to observe and understand the concentration and unequal development between cities. Moreover, analyzing changes in the rank-size distribution over time is useful in order to track the development progress of cities, and how they vary in their growth rates and prosperity.

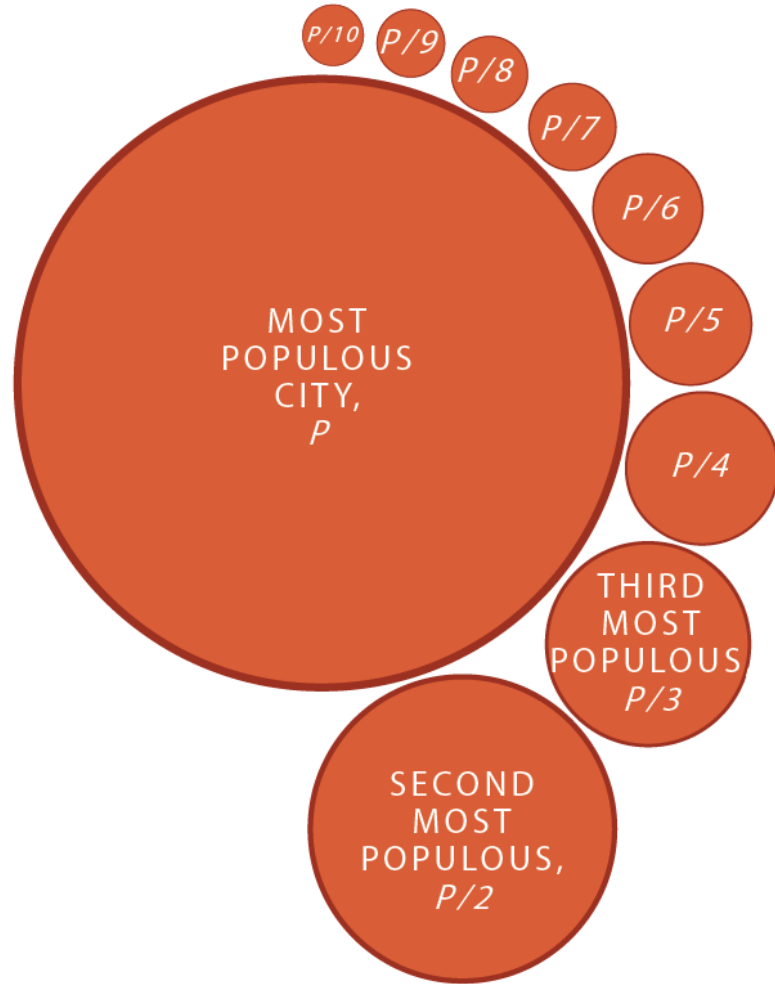
In 1989 the size of the second through eighth most populous Saudi cities were far above what rank-size rule distribution would predict, while the remaining cities were below the expected rank-size rule distribution. The product of rank and population of the smallest city, Surat Abiedah, was almost one-sixth of the product of rank and population of Riyadh, the most populous city. This illustrates that the distribution in 1989 was far from the rank-size ideal.

SLOW INSTITUTIONAL LEARNING



National and local institutions for managing urban development were established simultaneously with the rapid population growth (Garba, 2004). Therefore, the development of urban management in Saudi Arabia was an exercise in learning-by-doing, which proves to be inefficient.

IDEAL



LACK OF POLICY COORDINATION



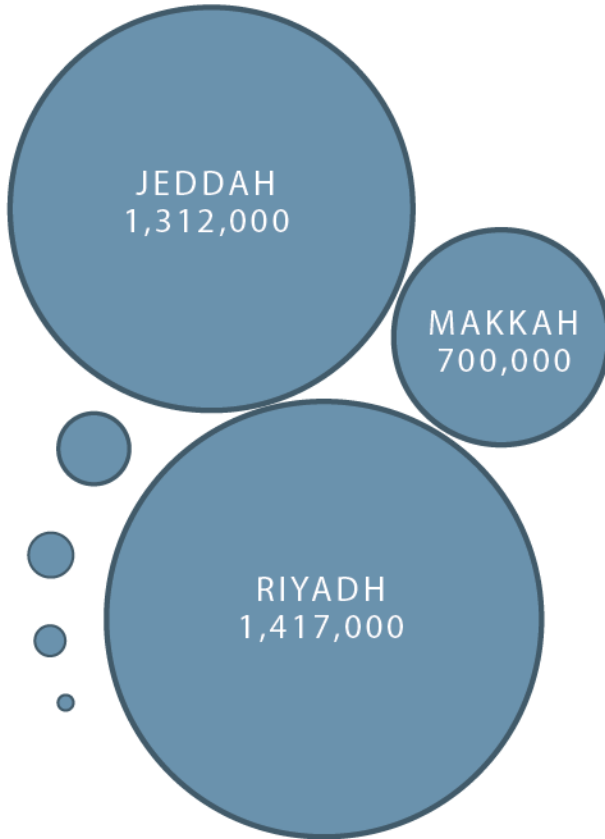
The lack of policy coordination among the several levels of government inhibits efficient urban management (Garba, 2004). Policies are formulated at the national level without properly assessing the impact on the spatial development of each individual locality. Accordingly, some of the policies have worsened or created new urban problems.

NATIONAL CENTRALIZATION

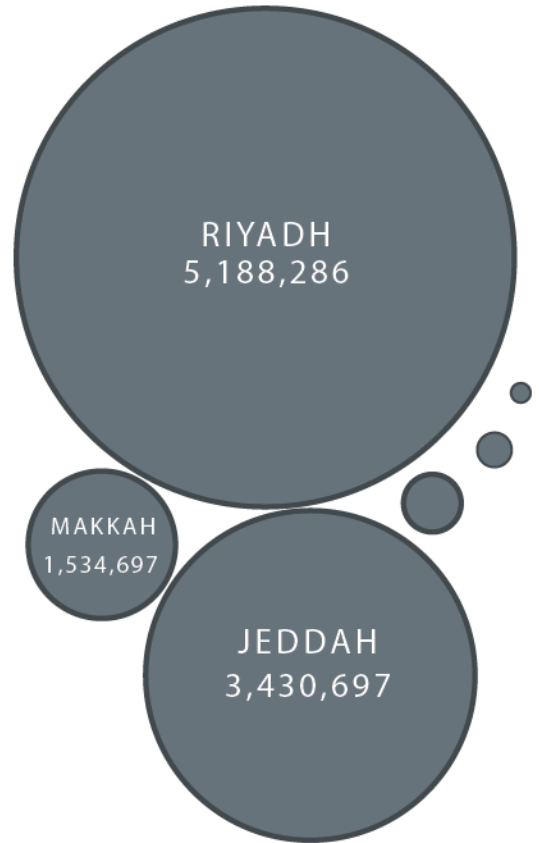


Local governments focus on "...codifying structures and establishing the framework for their management rather than on defining their fundamental role in national development" (Garba, 2004, p.605). The management system is nationally centralized, while local governments are limited to simply implementing the policies that are passed down. Thus local governments have limited power to intervene and develop proactive urban management systems for their own areas.

1989



2010



WHY HAVE SAUDI CITIES DEVIATED FROM THE TREND?

The lack of properly-skilled workers is a key factor limiting some urban regions' growth. Underskilled workforces have led to a dependence on imported labor and overseas expertise, which have prevented the country from achieving long-term sustainable growth management (Garba, 2004).



**INSUFFICIENT
LOCAL
WORKFORCES**

The "lack of a comprehensive planning intelligence information database to support the planning, management activities, and monitoring of growth and development" has become a significant obstacle to achieving balanced growth (Garba, 2004).



**LACK OF
COORDINATED
DATA + METRICS
BETWEEN
GOVERNMENTS**

Between 1989 and 2010 Saudi Arabia experienced a dramatic increase in its overall population. In 2010, the sizes of the second and fifth most populous cities, Jeddah and Dammam, were far above the expected rank-size rule distribution, while the remaining cities were below the expected rank-size rule distribution. The product of rank and population of the smallest city, Hulwah, is almost a fourth of the product of rank and population of Riyadh. This shows that the distribution in 2010, although having shifted from that of 1989, was still far from the rank-size ideal of a constant product of rank and population.

The three most populous cities in Saudi Arabia, Riyadh, Jeddah, and Makkah, maintained their population rank during the period from 1989 to 2010, while the remaining cities witnessed either a positive or negative shift in their population rank. However, no city has experienced a shrink in its population size. This means that the negative shifts in the rank of some cities between 1989 and 2010 occurred as a result of higher growth rates in other cities, rather than a decline in the population of the cities themselves.

Data shows there were three urban areas in the country where the population grew more rapidly during the period from 1989 to 2010. These were the Makkah, Jeddah, and Madinah axis; the Riyadh region; and the Dammam metropolitan area made up of Dammam, Khobar, and Dhahran. These three areas comprised

almost 60 percent of the total Saudi population of 7.27 million in 1989, and almost 46 percent of the total population of 27.14 million in 2010. Analyzing the changes in rank-size distribution from 1989 to 2010 clearly shows that Saudi cities vary significantly in their growth rates, with a few urban regions that are more prosperous and growing at higher rates than other regions in the country. Many economic and political factors, highlighted in the adjacent infographic, have contributed to the continuous pattern of unbalanced growth across Saudi cities. These factors include: the learning-by-doing approach resulting from the rapid transformation of population; the centralized urban management system; the lack of coordination in policy formulation; the lack of appropriate local manpower; and the lack of a comprehensive planning intelligence information database (Garba, 2004).

In spite of attempts by the national government to guide and balance the massive population growth across cities since 1970, the Saudi urban system still has an unbalanced growth pattern. This analysis of rank-size distribution reveals that three major urban areas undergoing rapid growth capture almost half of the national total population, leaving smaller urban areas with fewer economic possibilities. Although the national five-year development plans aim for balanced population growth across the country, this goal has not yet been achieved due to economic and political factors. ■

REFERENCES

Alkhedheiri, Abdulaziz A. (2002). *The Role of Secondary Cities in the National Development Process of Saudi Arabia*. Riyadh: Abdulaziz A. Alkhedheiri. Retrieved from: <http://ethos.bl.uk/OrderDetails.do?uin=uk.bl.ethos.287873>

Central Department of Statistics and Information, Ministry of Economy and Planning. (2010). *Administrative Regions and Provinces Population Estimates During the Period From 2010 to 2025*. Retrieved from: http://www.cdsi.gov.sa/english/index.php?option=com_docman&task=cat_view&gid=271&Itemid=113

Garba, Shaibu Bala. (2004). "Managing Urban Growth and Development in the Riyadh Metropolitan Area, Saudi Arabia." *Habitat International* 28(4), 539-608. Retrieved from: <http://www.sciencedirect.com/science/article/pii/S0197397504000232>

Shukla, Tryambakesh. (2010, November 16). "Rank Size Rule and Primate City Concept." Retrieved from <http://www.slideshare.net/tryambakesh/rank-size-rule-and-primate-city-concept>

Shukri, Ibrahim M., Habib M. Alshuwaikhat and Shaibu Bala Garba. (1996). "City-Size Distribution in the Saudi Arabian Urban System." *International Planning Studies* 1(2), 185-198. Retrieved from: <http://www.tandfonline.com/doi/abs/10.1080/13563479608721651>

Note: 1989 population data was obtained from research carried out by Shukri, Alshuwaikhat, and Garba in 1996 under the title "City-Size Distribution in the Saudi Arabian Urban System", while 2010 population data was obtained from the Central Department of Statistics & Information.