

The Urban Bias in Causes-of-Death Patterns in Latin America

AUTHOR
Jenny GARCIA

ABSTRACT

In 1977, Michael Lipton introduced the Urban Bias Thesis (UBT) as a framework to understand economic and social singularities in developing countries. He identified how most macro- and microeconomic policy initiatives have historically benefited the overdevelopment of urban areas and the underdevelopment of rural areas. In recent decades, decreasing infant and maternal mortality, increasing number of deaths from external causes and an incomplete cardiovascular revolution may be changing the urban advantage in life expectancy at birth in the region. I use decomposition methods of life expectancy on the vital statistics data of five Latin American countries over the period 2000-2010 to analyse the disparities in terms of causes of death according to their amenability when urban and rural are divided. Results pointed out urban advantage continues, which is based on the largest improvement in causes of death amenable due to primary care interventions.

KEYWORDS

Urban advantage, Causes of death, Stepwise decomposition method, Life expectancy at birth, Age contributions, Urban-rural differential

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RÉSUMÉ

En 1977, le concept de « biais urbain » (*urban bias*) a été introduit par Michael Lipton pour servir de cadre à l'analyse des disparités observées dans les pays en développement. D'un côté, le fort développement de certaines zones urbaines et, de l'autre, le sous-développement des zones rurales constitueraient une clé de lecture essentielle pour comprendre les écarts entre les conditions de vie des populations. Au cours des dernières décennies, la baisse de la mortalité infantile et maternelle, l'augmentation du nombre de décès dus à des causes externes et une révolution cardiovasculaire incomplète pourraient modifier l'avantage urbain de l'espérance de vie à la naissance dans la région. J'utilise des méthodes de décomposition de l'espérance de vie sur les données de l'état civil de cinq pays d'Amérique latine sur la période 2000-2010 pour analyser les disparités en termes de causes de décès en fonction de leur aptitude à la division urbaine et rurale. Les résultats ont souligné que l'avantage urbain se poursuit et qu'il est basé sur la plus grande amélioration des causes de décès pouvant être imputables aux interventions de soins primaires.

MOTS CLÉS

avantage urbain, causes de décès, méthode de décomposition, espérance de vie à la naissance, contribution de l'âge à la différence, différentiel urbain-rural

INTRODUCTION

In most regions of the world, decreasing mortality has been unstoppable. Despite some small setbacks due to HIV/AIDS epidemic in Africa and the collapse of Soviet Union, trends in mortality reduction have been overwhelmingly positive worldwide. During the last century, Latin American countries have also shown accelerated changes in mortality patterns: a fast decrease in mortality rates and a cause-of-death structure in which degenerative and man-made diseases stage has become prevalent. There is a consensus among experts to ensure that the impact of economic development on the decline of mortality in the region was relevant only until the early 20th century, when the reduction was still incipient. The faster decreasing mortality period –from 1930s on– was marked by a substantial application of sanitary controls, mass vaccination and elimination of disease vectors, the distribution of antibiotics, large-scale construction of potable water and sewage disposals, and the expansion of the health system. After the 1970s, a slowdown in the fall began, as well as an increasing prevalence of deaths due to cardiovascular diseases and external causes (Frenk *et al.*,

1991; ECLAC, 2007; Sabino *et al.*, 2007). None of the changes has been observed as linear stages or homogeneous processes among a region that is mainly characterised by its heterogeneity.

When mortality study takes in consideration different countries, the most traditional approach is through national context, since undoubtedly intervention policies are often inherent in national states. However, it is also true that the analysis of composite mortality indicators and indexes at national level as a whole could obscure differentials relating to particular population groups. Where inequality takes an important place, as in the Latin American case, country level averages are far from reflecting the broad range of co-existent sub-population patterns (Metzger, 2002). To get a closer view of any phenomenon, biased for big inequalities, some distinctions have to be made. Since diseases and causes of death do not appear by chance, but rather correspond to a defined pattern of social organisation and structure, living conditions play a major role.

In this sense, even when gaps in living conditions have been historically correlated to all kind of factors (race, ethnicity, income, education, occupation, etc.) that do not necessarily correspond to some spatial categories, many studies on the living conditions in Latin American countries have highlighted their unequal development along spatial lines. A high concentration of goods and services in cities have left behind rural areas (Prata, 1992; Curto, 1993). This is not actually a new idea; it was in 1977 that Michael Lipton introduced the Urban Bias Thesis (UBT) as a framework to understand economic and social singularities in developing countries. He identified how most macro- and microeconomic policy initiatives have benefited the overdevelopment of urban areas and the underdevelopment of rural areas as a product of capitalist economies (Lipton, 1977). In his first iteration, the UBT claims how rural areas of developing countries suffer from too little spending on welfare and differences in taxes, salary and food prices policies that have set an unfair gap in the population and an inefficient resources distribution. Since then, different reviews and critics have been emitted to this theory; also, various stages have been identified in the way that rural-urban economics manifest into livelihood strategies (Jones & Carbridge, 2010). Although there is every reason to think that an urban bias continues to plague pricing, expenditure policies and overall resources allocation in developing countries, its magnitude remains unknown.

With the strong favouritism that urban areas have in Latin American countries, it is no surprise finding large disparities in the capacity of the populations to satisfy their basic needs according to urban and rural areas. What has been said is that, if quality of life is closely linked to urban development (ECLAC, 2009), in its own way causes-of-death analysis could provide an insight into the level of (under)development of the regions and the way strategies to gain access to health, sanitation and so on, could be translated into different epidemiological patterns coexisting when national context analysis is done. For that, this research proposal contemplates to answer the following questions: When considering urban and rural divide, do Latin American countries have different mortality patterns? Is the urban bias in resources allocation perceivable through the amenability of causes of death in Latin American countries?

1. DATA AND METHOD

To answer all questions, data from five Latin American countries have been studied. The selected countries are Brazil, Chile, Colombia, Mexico and Venezuela. They represent diverse situations in terms of life expectancy at birth and percentage of urban population (tabl. 1). The aim is to be able to characterise both the urban-rural differential in mortality in the region and the causes-of-death patterns that could explain the gap. The period of analysis obeys the common use of the International Classification of Diseases (ICD) and its 10th Revision to the causes-of-death coding in order to facilitate comparative analysis from years 2000 to 2010.

Table 1. Life expectancy for the studied countries, in 1995

% Urban Population in 1995	Higher	Lower
	(> 69 years)	(< 69 years)
High (> 80%)	Chile	Brazil
	Venezuela	
Medium (60% to 80%)	Mexico	Colombia

Source: CEPALSTAT. Databases and statistical publications [online: estadisticas.cepal.org/cepalstat/web_cepalstat/estadisticasIndicadores.asp?idioma=i consulted 04.02.2019].

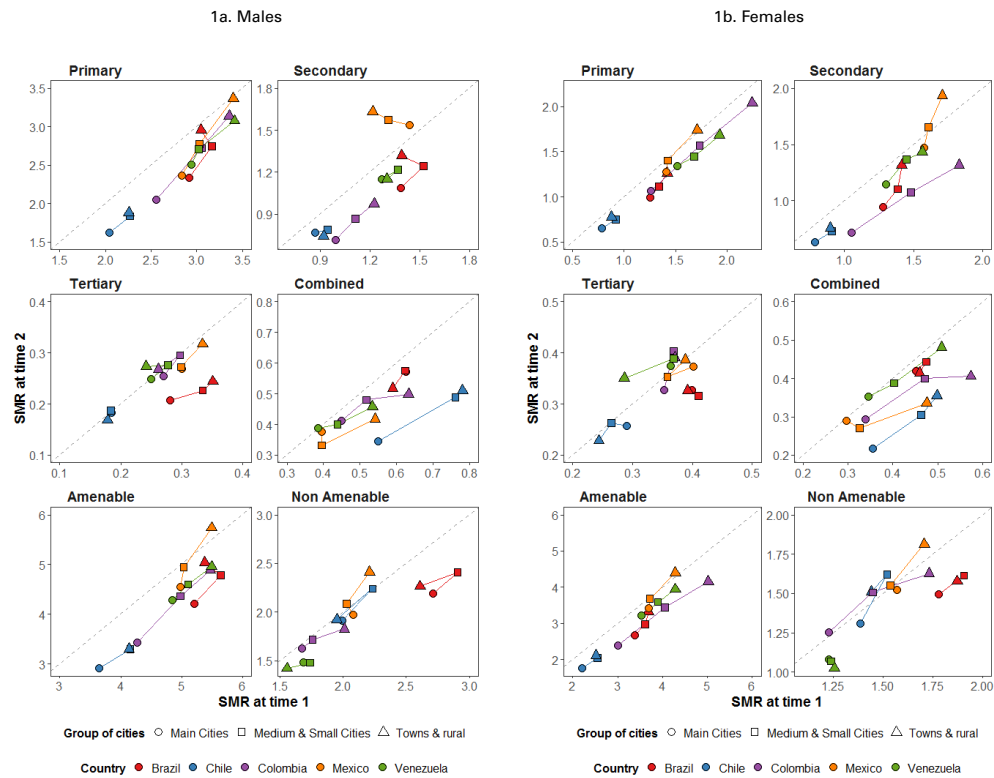
In order to ensure comparability, the definition of "urban area" has been attached to that of "city"; in this way, "urban" is recognised as continuum categories instead of a dichotomous concept. Therefore, three types of spatial groups are specified in all countries: main and large cities (over 500,000 inhabitants), medium and small cities (20,000 to 499,000 inhabitants), and towns and rural areas

(under 20,000 inhabitants). Because comparability across time and countries is also needed, ensuring a standard of quality of data has been a priority. Subsequently, two major issues are taken into consideration when estimating age-specific mortality rates: coverage errors identified as underreporting levels, and quality errors in reported age, sex, place of residency and causes of death. Comparable and accurate estimates allow to light on urban-rural differentials in mortality; first, standardised cause-specific death rates are computed for the three spatial groups in each country. Second, life expectancy decomposition methods are calculated; in this way, it is possible to evaluate differential contributions by age and cause-of-death.

2. RESULTS

In order to study the amenability of causes of death, amenable and non-amenable deaths are first distinguished from each other. Amenable causes of death in this research are defined according to Tobias and Jackson (2001) refined “avoidable mortality” to study mortality trends in New Zealand. They classified causes of death as avoidable by one or a combination of measures categorised as primary, secondary or tertiary interventions, followed by a last group of causes of death that would have required a combination of measures and/or interventions in order to avoid death. Standardised mortality rates by their amenability are indicated in figures 1a (males) and 1a (females). On the x-axis are rates at the initial time (t_1) corresponding to year 2000, and on the y-axis are the rates at the final time (t_2) corresponding to year 2010. Axis scales are symmetrical, but different scales are used in each category. The goal here is to make it easy to perceive a subpopulation’s progress by causes of death. Thus, the diagonal (dotted line) represents the limit that divides increasing rates (above) from decreasing rates (below) during the period. Countries are distinguished by colours and groups of cities by shape.

Figure 1. Standardised mortality rates by causes-of-death amenability, 2000 vs. 2010



There is a persistent urban advantage in mortality in Latin America, which is mostly concentrated in the main and large cities, for which initial level and trends –during the period of analysis– are the most advanced in terms of mortality decline in comparison with the rest of the country. Urban advantage remains regardless the level of urbanisation in each country. The urban advantage in Latin American mortality mainly comes from the differential impact of amenable causes of death in the spatial groups, higher in occurrence in towns and rural areas in comparison with main and large cities. Results showed that amenable causes of death exhibited a clear gradient between spatial groups, being in the main and large cities of all countries in the sample where amenable mortality achieved its lowest rates. Since amenable deaths are largely related to the existence of public infrastructures, goods and services, one can confirm the influence of the urban bias in resource allocation in the regional health outcomes through mortality pattern.

3. DISCUSSION

Having areas with urban structures and minimum access to goods and service seems to be relevant to the spatial differential in amenable mortality, because the concentration of population in main and large cities enables a larger coverage of the sewage and water systems, adequate housing, proper roads, among other goods and services. In addition to the advantage set by the urban bias in resource allocation, the urban advantage might also be relying on a composition effect of the population. Large cities concentrate most of the wealth in the region; consequently, advantage could come from a higher concentration of non-poor population rather than the setting itself, especially if changes in mortality during the studied period are more associated with individual access to commodities than to macro-policies or large-scale public investments. The pattern of amenable causes due to primary intervention sets a dissimilar spatial threshold because of the influence of urban bias in comparison with simpler urban advantage in mortality. In the most urbanised countries, the threshold in which urban advantage was visible was set to the main and large cities, while in the less urbanised countries, it was set to all cities regardless of their size and in opposition to rural. On its side, the spatial differential impact of amenable causes of death due to primary intervention seems to be more related to the historical concentration of power and wealth in the capital city. For countries such as Chile and Colombia, the advantage of the main-and-large-cities group mostly comes from the low rates of amenable causes due to primary interventions, which does not appear when comparing how all amenable causes of death are distributed in their others spatial groups. On the contrary, in Brazil, Mexico and Venezuela, the advantage introduced by lower mortality rates due to primary interventions spreads for all cities and at lesser extent reaches towns and rural areas.

The difference between these two groups of countries might come from strategies applied for the de-concentration of their capital cities. Brazil, Mexico and Venezuela have consolidated strategies of de-concentrating their capital cities by creating new planned industrial cities, or consolidating secondary industrial metropolises and agro-industrial regions, such as Manaus in Brazil, Ciudad Guayana in Venezuela, and the system of industrial city in the Mexican northern border. With this expansion, previous isolated or remote medium-sized and small cities became important to the national population and wealth distribution, as well as beneficiary of large-scale public investments. At the same time, Colombia and Chile strategy was led to accelerate the expansion of their larger cities, thus enlarging the demographic and economic weight of the major metropolises and expanding their areas of influence.

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THE AUTHOR

Jenny Garcia

Ined

jenny.garcia@ined.fr