Intra-urban inequalities in under-five mortality in developing countries: The case of Ouagadougou city, Burkina Faso

Abdramane Bassiahi SOURA, Ph.D Student
Institute of Demography, University of Louvain (Belgium)

Objectives

Inequalities in infant or child mortality are an old concern in demography and epidemiology researches. However, if undoubtedly many studies were completed on this subject in the developing countries, very little are focused on the urban area and specifically on the intra-urban inequalities of this mortality, often considered as the reflection of socio-economic or socio-medical inequalities in the city. It is only recently that health in South cities became a major concern, when the rhythm of the urbanization in these countries was no longer subject to city planners control and was presented as a frightening challenge to the medical authorities.

With my interest in Ouagadougou (capital of Burkina Faso) and by using data resulting essentially from the 1985 and 1996 censuses of the country, my paper relates to the intra-urban inequalities in child mortality. More precisely, it will try to answer the four main following questions:

- *What was the geographical distribution of the under-five mortality in Ouagadougou in the middle of the Nineties?*

- *How these inequalities did evolve since the beginning of the Eighties?*

- *What are the factors associated with these spatial differences in under-five mortality?*

- *How can one explain the changes occurred (between the two dates) in the districts levels of under-five mortality?*

This analysis of spatial differences in mortality makes it possible for example to identify pockets of particularly high mortality in urban areas (sometimes higher than in rural settings). It also enables to identify the influence of community characteristics on child mortality, such as health services supply in districts or the districts socio-economic profile. The fact that our study is circumscribed to Ouagadougou does not hinder us to draw conclusion which embraces the whole sub-Saharan region. Indeed, sub-Saharan African cities have many similarities and the health problems in those cities arise almost in a similar way. Even if there are differences between these cities, the methodological aspects which will be developed in this paper can be applied to other cities and contribute positively in understanding intra-urban inequalities in under-five mortality.

Data and methods

The analyses are essentially based on the 1985 and 1996 censuses. Indeed, census data permit to study mortality at fine geographical levels. Using information available in these censuses (total children ever born and total children died by woman), mortality levels are estimated

using indirect methods (Trussell method). With this method, an average level of under-five mortality is estimated on a period of 5 or 6 years preceding the date of census in each district. The most explanatory variables at districts level such as aggregate education, aggregate migration status, standard of living, etc.) also result from these censuses. Health services supply as its evolution since the beginning of the Eighties results from a specific survey conducted between 2003 and 2004 by the Institute of Research for Development (IRD). This data source includes retrospective information which enables us to connect the changes in health services supply over time and the changes in mortality levels.

We use cartographic methods for geographic cards needs. Spatial autocorrelation of mortality rates is assessed by Moran index. Linear regression is used to explain spatial differences in mortality levels and changes in mortality levels between 1985 and 1996.

First results

The first results show that the opposition which seemed to exist at the beginning of the Eighties between central districts and peripheral districts at Ouagadougou in term of under-five mortality level (the first having a weaker mortality than the seconds) disappeared over time and made place to a more heterogeneous space distribution in the middle of the Nineties. In the light of the data available and in accordance with our expectings, we have noticed visible bonds, reflecting sometimes neighborhood effects between some community characteristics (density of settlement, educational level and women migratory status) and under-five mortality at the beginning of the Eighties. The results are however quite poor with the 1996 census where one notes a quasi-absence of all the awaited relations. The only relation which appears somewhat significant with these data is the one between health services supply and mortality.

The change occurred in the geographical aspect of the under five mortality between 1985 and 1996 would be partly the consequence of the decrease in this mortality level in almost all the districts (30 in total). The explanatory approach used shows that the differences between districts in the rhythm of mortality decline would be the reflection of the differences in the aggregate education level evolution, in the aggregate migration status evolution and in the arrival of basic social services like drinking water and electricity, in particular in the peripheral districts which are more and more densely populated. Between 1985 and 1996, some districts have indeed known a total change in their environment due to actions undertaken within the framework of the urban policy.