Child Mortality in the Spanish Civil War. Geographical impact estimated from 1940 Census retrospective fertility data

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Introduction: paper's aim, previous research, and initial hypothesis

The paper's aim is to analyse the impact of the Spanish Civil War (1936-1939) on child mortality / survival geographical patterns. More specifically -following an indirect estimation method proposed by W. Brass- this paper uses 1940 Spanish census data on retrospective fertility (questions done to ever married women on the number of children ever born and their survival at the time of the census) to estimate women's descendants survival levels at different ages, and therefore, child mortality up to the age of 15. As data was classified by province and by mothers' marriage duration, we have been able to reconstruct child survival territorial evolution of at different ages and at diverse moments, more specifically before and during the Spanish Civil War (1936-1939). Despite important differences among provinces, child survival levels had already significantly increased between 1918 (Spanish flu) and 1936. This was partly caused by a change of risks factors (health transition theory), affecting geographic distribution of survival levels. Indeed, urban child survival levels overtook rural ones during the 1930's, breaking with a historical urban over-mortality trend. At the same time, the centre (more mortality) / periphery (less mortality) geographical dichotomy evolved into a somewhat different pattern opposing Northern provinces –with higher childhood survival– to central and southern ones, with higher mortality. Several factors would seem to be behind these changes: improvements in living conditions and education, particularly in urban areas; extension of hygiene and health infrastructures such as sewage systems or hospital networks; and massive application of new medical

technologies (like vaccines and other advances related to the microbial theory), among others. Previous ecological advantages (linked to the climatic conditions) favouring coastal provinces, lost their relative importance in front of other factors more related with social, educational and economic developments, and those connected with society and institutions' ability to mobilise and organise themselves.

Within this context, the initial hypothesis would be that more developed, industrialised and urban provinces, with better health infrastructure and lower child mortality, would be better prepared to cope with the shock that the conflict meant for child survival.

Data and methodology

This paper is based on a method exploiting the 1940 Census data on children ever born, obtained by asking married women two questions: "How many children, who were born alive, have you ever had?" and "How many children have you had who have died?". This way the number of surviving children (or those who have died) is obtained out of those ever born. It is well kwon that the proportions of children ever born who have died are indicators of child mortality and can yield robust estimates of childhood mortality. The births to a group of women follow some distribution over time, and the time since birth is the length of exposure to the risk of dying of each person. The proportion dead among the children ever borne by a group of women will therefore depend upon the distribution of the children by length of exposure to the risk of dying and upon the mortality risks themselves. Therefore, such a proportion of dead children can be converted into a conventional mortality measure expressing their average experience. Specifically, the proportions of children dead classified by the mother's five-year age group or duration of marriage can provide estimates of the probability of dying between birth and various childhood ages. William Brass was the first to develop this method, which was later further developed and diversified by other authors, creating a family of child mortality indirect estimation methods which has been collected in the United Nation's *Manual X*. They constitute probably the most powerful techniques of indirect demographic estimation, especially in view of the difficulty in obtaining valid estimates of child mortality from registration data where deaths of young children are particularly susceptible to omission, as is the case in developing countries with deficient statistical systems or in countries suffering an armed conflict, which was the case of Spain during the Civil War.

Preliminary findings

Results show that even though the war worsened child survival in practically all the provinces, the least affected were Catalan and Northern Meseta ones, which showed opposite child mortality levels before the war -i.e. low in the former and very high ones in the latter. This would mean that, although the regional development level of should be inversely related to the vulnerability of its population to unfavourable situations, child mortality during the war did not seem to be significantly affected by the previous demographic situation. Other factors such as access to food, crop availability, and logistic aspects related to its storage, transport and distribution, that is to say, those regarding rearguard organisation in general, seem to be more significant in explaining differences in child mortality. Here, Francoist side seemed to be ahead of the part of Spain which was loyal to the Republic, and this could explain why Republican Spain provinces, on average, worsened more their child mortality levels.

Keywords: child mortality, 1940 census, census data, retrospective information, territorial distribution, Spanish Civil War, Spain.