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Extended abstract

The impact of education on the occurrence of first union and first birth. A comparative analysis between Mexico and Spain

1. Introduction

During the last decades there have been major changes in the patterns of transition to adulthood due to economic and social transformations. These changes have significant implications for the strategies of family formation of young people. They are mainly characterized by a very low fertility and delayed age at first union and at first child. Worldwide, these changes have taken place in parallel with a dramatic expansion of educational enrolment and attainment. In Spain most educated women usually postpone the formation of a family. On the other hand, we observe that, despite Mexico has also undergone a notable educational expansion; this is not accompanied by a delaying of events associated with the transition to adulthood. This is due to the fact that first union and the first birth still occur at young ages, even for the younger cohorts. Consequently, we believe that raising a family while still being young is an important decision for the Mexican people and that it may be also a factor in explaining why young person leave the education system. We propose to study the differences between Spain and Mexico in the relationship between the first union and the birth of a first child by level of education. We begin by a discussion of some methodological issues and the way to overcome them: most of past studies have tried to explain the timing of occurrence of these events taking into account the educational attainment at the time of survey; however, this amounts to the explanation of current events (forming a union or having a first birth) with something that may happen in the future (the end of main studies). If education were a fixed factor in the life cycle of an individual, this relationship could exist, but clearly this is not true as there is an educational progress over the life of an individual. We then present results of three kinds. First, we highlight the differences between Spain and Mexico in the formation of the first marriage and first maternity. Then, we will determine the educational level differences in the occurrence of these events. Finally, we will study the risk factors for the transition to first marriage and first childbearing using Survival Analysis modelling.

2. Data and Research strategy

We use the data from the Spanish Fertility, Family and Values Survey (FFV) conducted in 2006. Altogether, 9,737 women were interviewed. This survey has several advantages: one is that it covers a range of up to 90 years old, and the other one is that it explores in detail the year and month of occurrence of events. However, the main inconvenient is that the survey contains no detailed information on education prior to the stated educational attainment at the time of survey. For Mexico, the data comes from the Survey of Demographic Dynamics conducted in June of 2009. This survey interviewed 100,515 women aged between 15 and 55. As the Spanish survey, it is accurate on the date at which the first birth occurred, but it doesn't contain detailed information with the education of women. Therefore, we had to reconstruct the educational trajectories with the little information that we had in those surveys, in order to obtain the age at the end of main studies and the educational level reached at that time. We apply a life table strategy to compute risk rates, taking into account the educational level reached at each age, and then calculate two indicators, the median age at first birth and the proportion of women who have had this event. We also use event history analysis in order to explore the determinants of the probability of having a first union and first birth, taking into account the educational expansion and others factors, in order to explain the differences between Spain and Mexico.

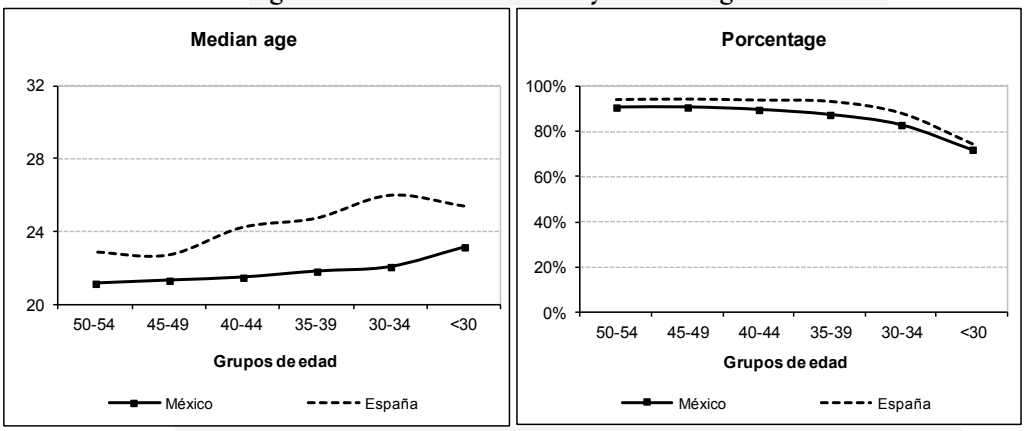
In the following text we present some preliminary results that justify why conducting the previous research is worthwhile and may interest other researchers participating in the European Population Congress.

3. Differences between Spain and Mexico

3.1.1 First union

In recent decades women in Spain have been delaying the entry into first union. The median age in the age group 50 to 54 years is 22.9 years and 26 years for the age group30-34. By contrast, in Mexico unions are usually set at younger ages (21 year for the 50 to 54 years age group and 22.1 years at 30 to 34 years), which means that there is only one year of delay in comparison to the three years from Spain.

Figure 1. Indicators of intensity and timing of first union



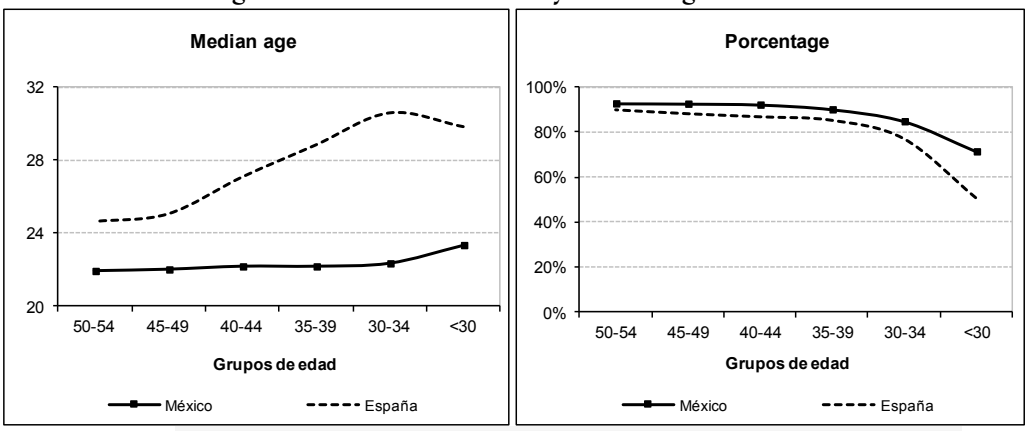
Source: Spain, Fertility and Family Survey of 2006 - Mexico, Demographic Survey of 2009

3.1.2 First birth

Spanish women also postponed their first birth, but at an even higher pace than for the first union: for the same age cohort the increase in the median age at first birth was of 6 years. There was also a postponement in Mexico, but again with relatively smaller increase than for Spanish women: in Mexico the median age went from 22 years for the age group 50-54 to 24 years for the group 30-34.

Taken together, those results indicate that postponement of family related events is well underway in Spain, but only beginning in Mexico. For Spain there are quite a lot of studies, which related this delay in the age at the first union or at the first birth with the education expansion. This is not the case for Mexico, and our objective is to have a look at the relationship between the rise in education levels and the increase in ages related to the transition to adulthood.

Figure 2. Indicators of intensity and timing of first motherhood



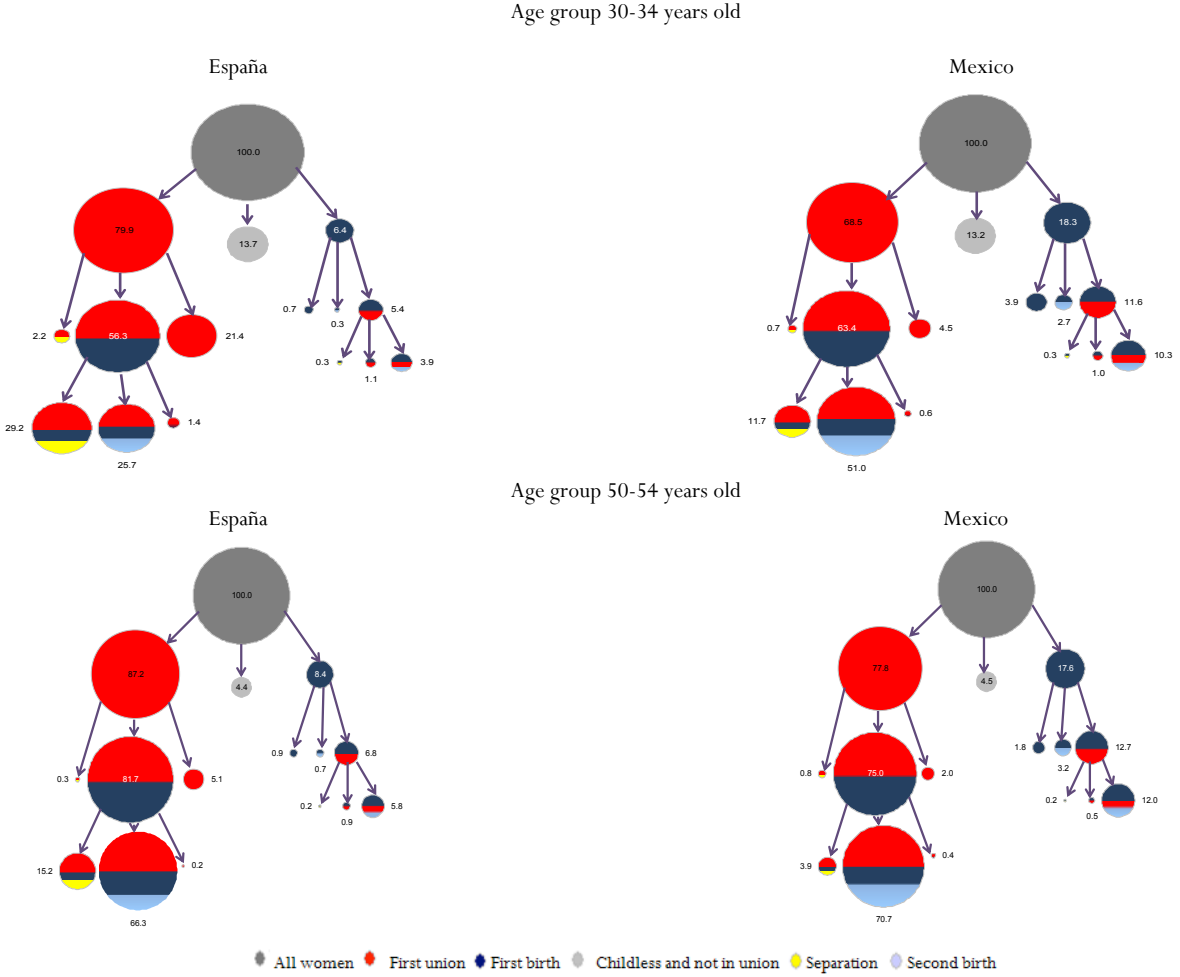
Source: Spain, Fertility and Family Survey of 2006 - Mexico, Demographic Survey of 2009

3.1.3 Sequence of Events

Generally speaking, the first birth is the last event in the transition to adulthood. However, for Spain and especially for Mexico this is not always the case. Clearly the most common way to initiate the formation of a family is through a union, nonetheless in both countries there is a significant percentage of women that have a child first. For example,

in Spain, 8.4% of women of 50 to 54 years of age, 8.4% in Spain began their family life with a child before union, while in Mexico this percentage doubled to 16.3%. We will also explore the connections between the different sequences and the education level.

Figure 1. Sequences of the family life cycle



Source: Spain, Fertility and Family Survey of 2006 - Mexico, Demographic Survey of 2009

3.2 Differences by educational levels, taking into account the time at end of study

Traditionally the effect of education attainment on the transition to adulthood is studied using the final educational level as an explanatory factor. This means that, when an individual is at risk of an event before the end of his studies, something that will happen in the future may explain a current event, something akin to a time reversal causality. Using the final education level as a fixed characteristic can lead to a bias in the results, for at least two reasons. First due to a selection effect: for example people who have a child may interrupt or end their studies sooner than they would have done otherwise: in that case precocity may explain a lower educational level, when we would have concluded that the reverse is true if we had considered that fertility behaviors depend on the highest educational attainment. Another reason is that the educational process is to some point the result of chance events: people who study longer didn't know it beforehand. So we need to disentangle the interplay of events related to the family formation process and the educational process. There are at least two ways to handle this problem. Hoem and Kreyenfeld proposed the first one recently[1]. It consists in counting only the events that occur after the age at end of studies. But this is practical only for events that occur generally at higher ages than the age span for studies, like having a first birth. For events that occur at younger ages, like leaving parental home or forming a first union, this is not a sound procedure, because this places all the events that happen while studying in a kind of limbo.

Another way, which is more classical and is the method we use here, is to suppose that the risk is the same for everybody while studying and is allowed to vary only after the end of studies. This is a kind of dynamic grouping procedure, as everybody is in the same group at birth, and new groups appear when some individuals finish their main studies. This also means that we suppose there is a situation of maximum homogeneity within each group, which precisely corresponds to the assumption that behavior risks are the same while studying, irrespective of what will be the final level of education for each person. We apply a life table strategy to compute three sets of rates, the first being the risk for each event while studying, the second set for the risk after the end of studies, for each group ending their main studies at the same age, and the third set for the transition out of the state of studying. With these three sets of rates, we calculate two indicators, the median age at the occurrence of each event and the proportion of women who have had the event at age 40.

We present here the results for the comparison between educational levels, using the procedure outlined before. We compare two groups of women, those with a low and those with a high educational level (the first one corresponds to women who ended their studies before age 16, and the second one for women who finished them at more than 20 years). For this second group, we compute our indicators using our procedure (dynamic grouping) and those obtained with the traditional approach (people pertains during their whole life to the same educational group, which correspond to fixed grouping). For the event of leaving parental home, which occurs often while studying, and if we compare the results for the two kind of grouping, we can see that the difference between the highest and the lowest educated women in the median age at leaving home is substantially reduced, between two months and one year, or a quarter of the total distance of around 3 years. For the quantum index, here the proportion of women who have left their parental home at age 40, the difference is almost annulled for the cohorts born around 1955.

The reduction in the differences for results obtained through fixed or dynamic grouping for the two other events: forming a first union or having a first birth is less important than for leaving parental home. Indeed we observe that the difference in childlessness levels between higher and lower educated women is almost not altered by using the dynamic grouping. The obvious explanation is that in Spain the age span for first childbearing has almost no overlap with the age span for main studies, so there is practically no interaction effect here.

These procedure will also be applied for our Mexican data.

[1] "Anticipatory analysis and its alternatives in life-course research, part 1: Education and first childbearing", published in 2006 in the journal *Demographic Research*.

Figure 3. Indicators for leaving the parental home by educational level

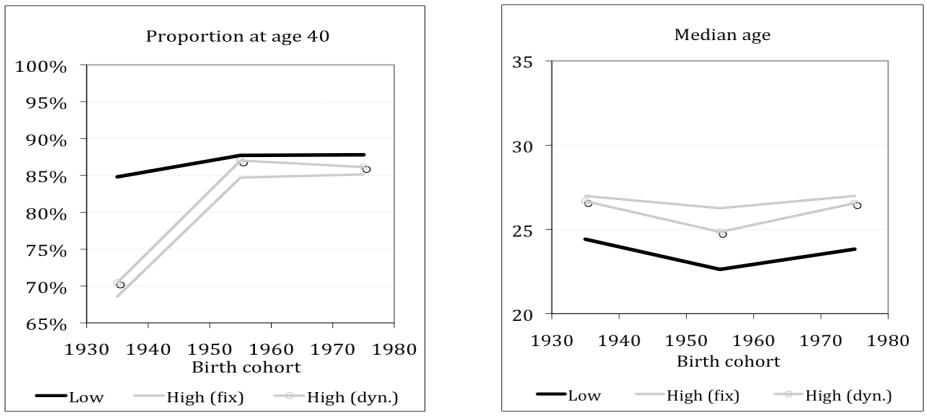
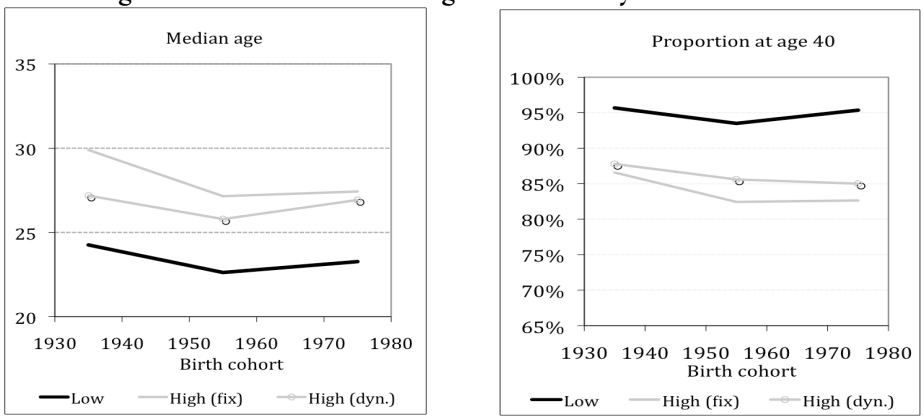
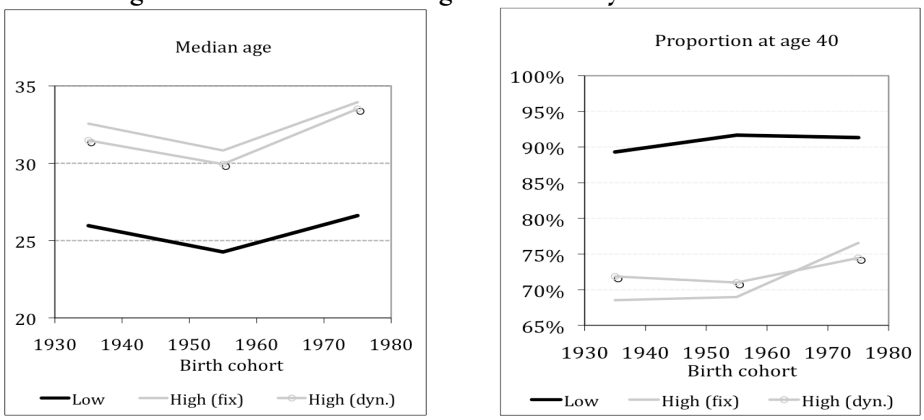


Figure 4. Indicators for forming a first union by educational level



Source: 2006 Spanish Fertility, Family and Values Survey, CIS.

Figure 5. Indicators for having a first child by educational level



Source: 2006 Spanish Fertility, Family and Values Survey, CIS.