

Age at first birth and completed family size in Chile, Ecuador and Uruguay: does postponement of childbearing leads to low fertility?

Background & Aim

The literature in the research field of reproductive behavior has acknowledged a negative association between the timing of first birth and completed family size (Berrington, Stone, & Beaujouan, 2015). Thus, women who initiate childbearing at late reproductive ages are expected to have fewer children in comparison to those who started having children at younger ages. Due to biological reasons, women who postpone their first child are exposed to a shorter span of time for reproduction and therefore less likely to progress to subsequent higher parities. Fertility postponement also explains increasing levels of involuntary childlessness in several post-transitional countries (Sobotka, 2017a). However, in those fertility settings where late childbearing is the currently the norm, postponement can be compensated with a faster progression to the second and subsequent order births. Still, the timing and intensity of childbearing are two interrelated components of the reproductive behavior, and the outcome of fertility desires and intentions i.e., women who want fewer children would probably focus on her education and career, and delay marriage and childbearing.

Recent studies have shown that postponement of childbearing is an emergent phenomenon Latin America, particularly in countries that are located in the south of the continent -e.g., Chile and Uruguay (Lima, Zeman, Nathan, Castro, & Sobotka, 2017; Nathan, 2015; Nathan, Pardo, & Cabella, 2016; Rosero-Bixby, Castro-Martín, & Martín-García, 2009). However, late childbearing is far from being a general behavior in the region, and early childbearing is still the observed behavior for a significant share of women in reproductive ages (ECLAC, 2012; Rodríguez-Vignoli & Cavenaghi, 2014). Fertility levels have gone down in Latin America without any dramatic change in the schedule of first births, as opposed to what European countries experienced since 1970 (Cavenaghi & Diniz Alves, 2009; Sobotka, 2017b). Thus, means to control reproduction have operated in Latin America by limiting the progression to higher parities of mothers, and to a lesser extent by shifting the schedule of first birth towards older ages. Still, the emergent trend of fertility postponement raises the question about the impact on fertility quantum in the region, as it might produce a further decline in fertility levels.

This work aims to examine the association between age at first birth and completed family size in Chile, Ecuador, and Uruguay, from a cohort perspective. The association between age at first birth and completed fertility is described for women who have reached the end of reproduction (aged 50-55) in 2010-11, controlling by educational attainment. No study has yet examined the relationship between the age at first birth and completed family size at the individual level in countries that exhibit marked differences regarding fertility timing and quantum.

Data and methods

Data

I used individual retrospective fertility data circa 2010-11 from three sources: the large-scale survey called *Encuesta Nacional de Caracterización Social* (2011 CASEN) for Chile, the 2010 population census for Ecuador and the 2011 population census for Uruguay. These sources provide data on the number of children ever born, and the year or age of the mother at the birth of her first child, for women aged 12 or more. I examined the correlation between age at first birth and completed family size on women with completed fertility i.e., aged 50-55 at the moment of the interview.

Methods

I analyzed the evolution of final parity and childlessness by educational group in each country and described the association between age at first birth and final parity. Due to the observed differences in the distribution of women by level of education in each country, I introduced a relative measure of educational attainment using the information regarding years of schooling. Therefore, women were classified into three educational groups (low, medium and high) corresponding to the first, second and third terciles of their distribution by years of schooling (Table 1).

Table 1. Years of schooling within each educational group by country. 2010-11, women aged 50-55

	Low	Medium	High
Chile	0-8	9-12	13+
Ecuador	0-6	7-12	13+
Uruguay	0-7	8-11	12+

Results

Regarding fertility quantum (see the Table 1, the “Total” column), Uruguay exhibits the lowest mean number of children per woman (2.54) and the highest proportion of childless women (0.105). The mean parity of Chilean women is close to their Uruguayan counterparts (2.66), but the proportion of women with no children is much lower (0.077), revealing that motherhood is a more widespread transition in Chile. Women from Ecuador have by far the highest mean number of children (3.83) and an intermediate value regarding childlessness (0.088).

Differences among these countries are also substantial regarding the age at first birth. An early transition into motherhood seems to have been the norm in Ecuador, as 41% of women had their first birth before age 20, and to a lesser extent in Chile where almost one-third of women began motherhood during its adolescence. Women in Uruguay were more likely to begin reproduction at older ages. In this country, 25% of women had their first child before age 20 and 40% after age 24.

Results in Figure 1 and Table 2 show that women who postponed childbearing were more likely to have fewer children than those who started at younger ages. Ecuador exhibited the sharpest association between age at first birth and fertility quantum, as well as the highest gaps among educational groups. In Chile, on the other hand, differences in education were

low, meaning that the number of children women had by age at first birth did not vary much among social groups. Overall, differences in completed family size by education were stronger for those who had experienced the transition to motherhood at younger ages. In that sense, women with high education who had their first birth at younger ages are more likely to achieve more children as compared to low-educated women who entered motherhood at later ages. Education also played a role regarding childlessness: women from high educational groups were more likely to be childless than those with lower education, particularly in Uruguay.

Figure 1. Mean number of children by age at first birth in Chile, Ecuador, and Uruguay. 2010-11, women aged 50-55

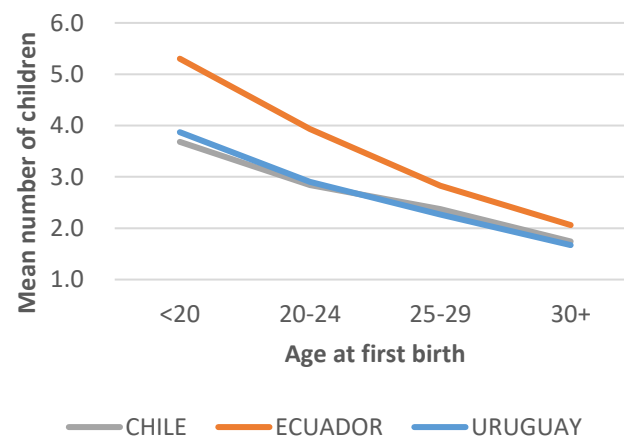


Table 2. Age at first birth, the mean number of children and proportion of women with no children, by country and educational group. 2010-11, women aged 50-55

	Total		Low		Medium		High	
	Age at First Birth	Mean Parity*	Age at First Birth	Mean Parity	Age at First Birth	Mean Parity	Age at First Birth	Mean Parity
CHILE								
<20	0.324	3.68	0.495	4.04	0.273	3.18	0.098	3.21
20-24	0.357	2.84	0.308	3.08	0.396	2.71	0.367	2.77
25-29	0.192	2.38	0.115	2.38	0.193	2.34	0.346	2.42
30+	0.126	1.74	0.082	1.74	0.138	1.65	0.189	1.90
Total	1.000	2.66	1.000	3.17	1.000	2.41	1.000	2.25
No children	0.077	-	0.057	-	0.080	-	0.110	-
ECUADOR								
<20	0.406	5.30	0.514	5.64	0.346	4.07	0.142	3.42
20-24	0.363	3.93	0.347	4.48	0.407	3.32	0.368	2.93
25-29	0.145	2.83	0.089	3.30	0.162	2.61	0.295	2.48
30+	0.086	2.06	0.049	2.42	0.085	1.92	0.195	1.78
Total	1.000	3.83	1.000	4.58	1.000	3.08	1.000	2.28
No children	0.088	-	0.062	-	0.079	-	0.110	-
URUGUAY								
<20	0.324	3.68	0.495	4.04	0.273	3.18	0.098	3.21
20-24	0.357	2.84	0.308	3.08	0.396	2.71	0.367	2.77
25-29	0.192	2.38	0.115	2.38	0.193	2.34	0.346	2.42
30+	0.126	1.74	0.082	1.74	0.138	1.65	0.189	1.90
Total	1.000	2.66	1.000	3.17	1.000	2.41	1.000	2.25
No children	0.077	-	0.057	-	0.080	-	0.110	-

<20	0.254	3.87	0.405	4.31	0.253	3.39	0.078	2.86
20-24	0.357	2.90	0.361	3.26	0.395	2.78	0.313	2.58
25-29	0.239	2.26	0.148	2.38	0.225	2.18	0.361	2.27
30+	0.149	1.67	0.086	1.73	0.128	1.61	0.248	1.68
Total	1.000	2.54	1.000	3.19	1.000	2.43	1.000	1.92
No children	0.105	-	0.077	-	0.086	-	0.155	-

* Values of the mean number of children in the Total row correspond to all women (with and without children).

Discussion and further steps

The analysis of women with completed fertility in Chile, Ecuador and Uruguay circa 2010 confirms the expected negative relationship between age at first birth and completed family size. Still, the slope of this relationship varies among countries and educational groups and differences in the achieved final fertility are more significant for women who start childbearing at an early phase of their reproductive life-span.

Because women aged 50-55 do not belong to the forerunner cohort of the fertility postponement in the region, we may expect the younger generations to enter motherhood at older ages and also have fewer children. However, being more aware of consequences of fertility postponement regarding completed family size, we may also expect the younger cohorts of women to experience a more rapid progression to second and higher order births, compared to those born at the end of the 1950s. Further research is needed to determine to what extent the reproductive behavior of younger generations is changing the slope of the association between age at first birth and completed family size.

Selected references

- Berrington, A., Stone, J., & Beaujouan, E. (2015). Educational differences in timing and quantum of childbearing in Britain: A study of cohorts born 1940–1969. *Demographic Research*, 33, 733–764.
- Cavenaghi, S., & Diniz Alves, J. E. (2009). Fertility and contraception in Latin America: historical trends, recent patterns. In *Demographic transformations and inequalities in Latin America: Historical trends and recent patterns* (pp. 161–192). ALAP, Serie Investigaciones 8.
- ECLAC. (2012). *Social panorama of Latin America* (Vol. 1). Santiago de Chile: ECLAC-UNFPA. <http://doi.org/10.1017/CBO9781107415324.004>
- Lima, E. E. C., Zeman, K., Nathan, M., Castro, R., & Sobotka, T. (2017). *Twin Peaks: The Emergence of Bimodal Fertility Profiles in Latin America* (10/2017). *Vienna Institute of Demography Working Paper* (Vol. 10/2017)
- Nathan, M. (2015). La lenta transición hacia un régimen de fecundidad tardía en Uruguay: los cambios en la edad al primer hijo entre 1978 y 2011. *RELAP*, 9(17), 37–60.
- Nathan, M., Pardo, I., & Cabella, W. (2016). Diverging patterns of fertility decline in Uruguay. *Demographic Research*, 34(20), 563–586.
- Rodríguez-Vignoli, J., & Cavenaghi, S. (2014). Adolescent and youth fertility and social

inequality in Latin America and the Caribbean: what role has education played? *Genus*, 70(1).

Rosero-Bixby, L., Castro-Martín, T., & Martín-García, T. (2009). Is Latin America starting to retreat from early and universal childbearing? *Demographic Research*, 20(9), 169–194. <http://doi.org/10.4054/DemRes.2009.20.9>

Sobotka, T. (2017a). Childlessness in Europe: Reconstructing Long-Term Trends Among Women Born in 1900–1972 (pp. 17–53). http://doi.org/10.1007/978-3-319-44667-7_2

Sobotka, T. (2017b). *Post-Transitional Fertility: Childbearing Postponement and the Shift to Low and Unstable Fertility Levels*. *Vienna Institute of Demography Working Paper* (Vol. 01/2017). Retrieved from <http://www.humanfertility.org/cgi-bin/reports.php>.