

Trends of the Delay and Variance of Childbirth Timing by Completed Number of Children

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Abstract

The timing of childbirth has undergone significant changes in the past decades. However, it may not be feasible for individuals with many children to further delay the timing of each childbirth given the biological constraints on fecundability and social age deadline for childbirth. Thus, the delay in having children and the increasing heterogeneity in its timing may present different trends when analyzed retrospectively by completed number of children. This study investigates the age at childbirth by birth order among women age 40+ in 17 European countries and Canada based on the number of children they have. Our findings show that individuals having more children tend to have each child at earlier ages, with less variation in timing, compared to the counterparts with fewer children. This suggests that changes in the timing of childbirth are more pronounced among individuals having fewer children and less so among those with having more children.

Keywords

timing of childbirth, variance of childbirth age, parity-specific analysis

Over the past half-century, Western societies have experienced notable shifts in the timing of childbirth. The average age at first childbirth for women among 23 EU countries has increased by 3.1 years, from 26.1 in 1970 to 29.2 in 2021 (OECD 2023). Several forces influenced these delayed childbirth trends, including economic uncertainties, the pursuit of self-realization, and developments in assisted reproductive technology. These factors likely led to a general delay in the transition to adulthood, particularly in leaving parental home and forming a union (Buchmann and Kriesi 2011), resulting in delayed childbirth. These changes involve not only a shift toward later childbirth but also an increase in the variance of timing. The shape of the age-specific fertility rate, especially the age-specific first (and second) birth rate, has become flatter compared to previous years (Burkimsher 2017). All these trends appear to suggest that women have gained greater control over the timing of their childbearing decisions.

However, when considering the biological constraints on human fecundability (Menken, Trussell, and Larsen 1986) and the perceived age limit for childbirth (also known as the “social age deadline for childbirth”; Billari et al. 2011), the timing of each childbirth, particularly among those who have many children, may not vary significantly over time. This

study aims to examine whether the delayed and diverged timing of childbirth over time is a consistent trend across all completed parity or if these behavioural shifts are more pronounced among women with lower completed parity. Here, the term *parity* means the number of children a woman has ever had. The completed parity is defined in this study as the total number of children women have had by age 40. Hence, we compare childbirth age and its variance over time from both between-completed-parity perspectives (i.e., a comparison across completed parity in the same birth cohort) and within-completed-parity perspectives (i.e., a comparison across birth cohorts within a completed parity).

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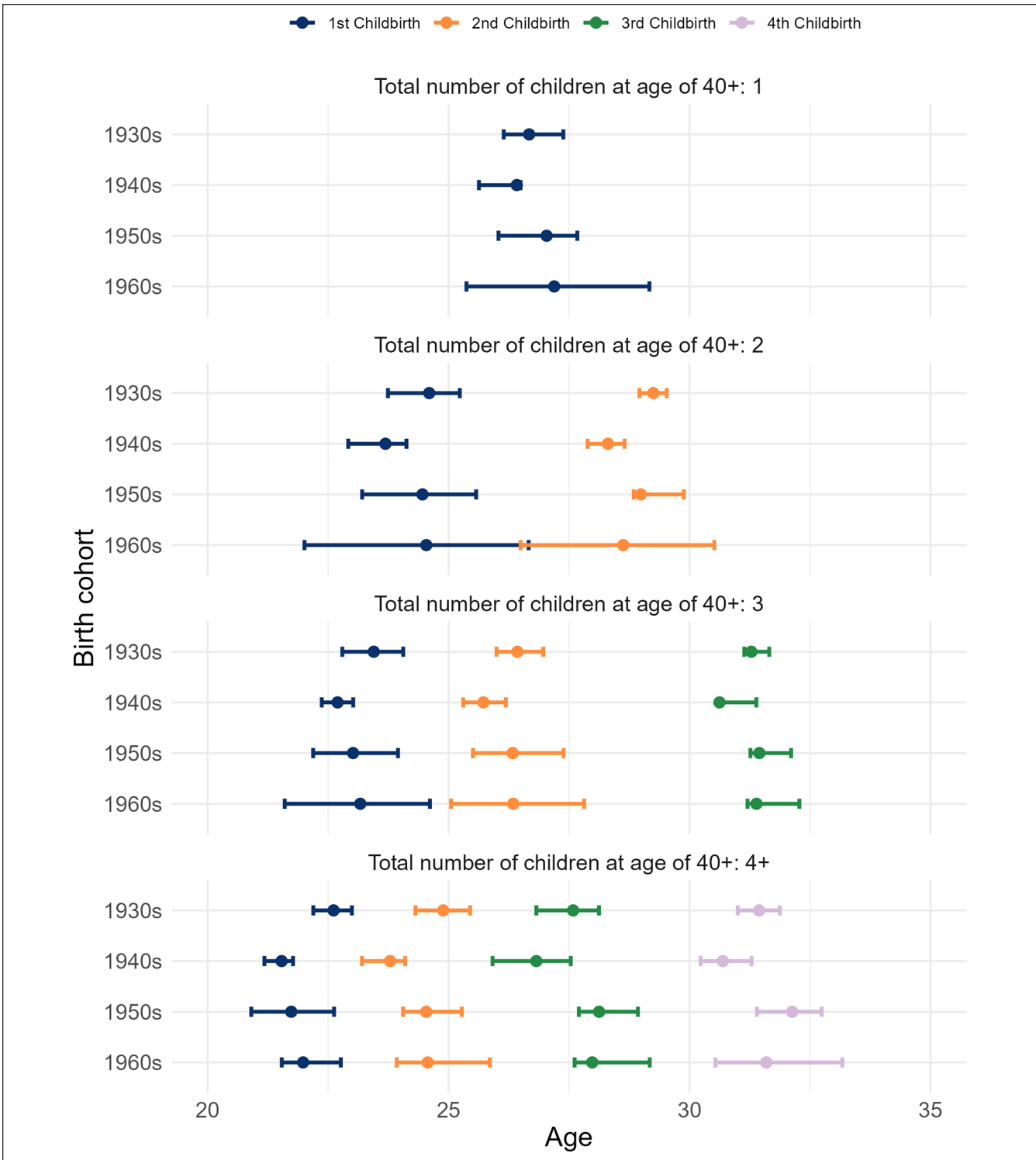


Figure 1. Average age of each childbirth among women age 40+ by number of children in 17 European countries and Canada. *Note:* Individuals having more children tend to have each child at earlier ages, with less variation in timing, compared to the counterparts. This suggests that changes in the timing of childbirth are more pronounced among individuals having fewer children and less so among those having more children. The dots represent the weighted average age of childbirth across all countries, and the lines correspond to the range between the age of childbirth at the weighted 25 percentile (the left side) and the 75 percentile (the right side). Birth orders are distinguished by different colors, with the first birth in blue, the second in orange, the third in green, and the fourth in pink. The data are from the Harmonized Histories, including Belarus, Belgium, Bulgaria, Canada, Czechia, Estonia, France, Georgia, Germany, Lithuania, Norway, Poland, Romania, Russia, Spain, the UK, the Netherlands, and Sweden.

The Figure 1 illustrates the average age at each childbirth by completed parity i ($i = 1, 2, 3, 4+$) at age 40+ in 17 countries across Europe and Canada. We obtained the data from the Harmonized Histories. In this figure, the dots represent the average age of childbirth across all countries, and the lines correspond to the second and fourth quantile range of average age at childbirth by birth order of each analyzed country. Birth orders are distinguished by different colors. Our results reveal two key findings. First, individuals with higher completed parity tend to have each child at an earlier age than those with lower completed parity. The average childbirth timing of each parity among individuals with lower completed parity delays further compared to those with higher completed parity. Second, the variance of the age at each childbirth, particularly among the 1960s birth cohort, is larger among individuals with lower completed parity. For instance, the standard deviation of childbirth age increased more than double among those with completed parity 1 from the 1930s to 1960s birth cohort, while the rise during the same period is much smaller for individuals with completed parity 3 and parity 4+. In summary, the delay and rising heterogeneity in timing of having children have been primarily observed among individuals with lower completed parity, with fewer such temporal differences found among those with higher completed parity. This visualisation of fertility history from a retrospective perspective implies that having many children still entails an earlier entry into parenthood, even after various societal changes and developments. This pattern seems to persist at least until the 1960s birth cohort across Europe and Canada. Considering the use of assisted reproductive technologies is concentrated to having the first child (Lazzari, Gray, and Chambers 2021), the trajectories among the lower and higher parities will be perhaps more diverged for future.

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Supplemental Material

Supplemental material for this article is available online.

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