Decline in Induced Abortion Rates in Spain 2011-2021: Compositional or Behavioral Effect?

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Introduction

Over the past 25 years, highly developed countries have experienced a 31% reduction in induced abortion (IA) rates (Bearak et al., 2020). In line with these findings, evidence for Spain also shows a gradual decrease in abortion rates over the last decade (Requena and Stanek, 2024). This study aims to determine the extent to which the changes in abortion incidence between 2011 and 2021 are attributable to shifts in women's behavior and to what extent they are due to changes in the composition of relevant characteristics such as age, origin, and educational level.

Data and analytical strategy

This study used two publicly available data sources. First, we analyzed microdata from the Voluntary Terminations of Pregnancies register (2011–2021), provided by the Spanish Ministry of Health. This registry includes detailed information on abortions, such as gestational age, reasons, methods, and sociodemographic characteristics. The dataset initially included 208,276 cases for 2011 and 2021, and missing data for educational attainment and country of birth were imputed.

Second, we used sociodemographic data from the 2011 and 2021 Population and Housing Censuses, from the Spanish National Statistics Institute. These datasets represent 10% of the population and include 1,079,574 women in 2011 and 1,229,987 women in 2021. After weighting, the respective populations were 12,988,700 and 12,299,995.

The two datasets were merged using three variables: age, country of birth, and educational attainment, resulting in minimal data loss. The final dataset included 25,288,695 observations, with 208,276 women having had an abortion. The dependent variable indicated whether a woman had an abortion, and independent variables included year, age, country of birth, and educational attainment.

The analysis involved estimating Poisson regression models and subsequently conducting an Oaxaca-Blinder decomposition for this type of model, to identify the contribution of compositional factors to the differences in abortion rates between 2011 and 2021 (Sinning et al., 2008).

Results

During the period 2011–2021, the crude induced abortion rate among women aged 12 to 52 decreased from 9.1 to 7.3 abortions per 1,000 women. The relative changes are illustrated in Figure 1. Over this period, there was an increase in the proportion of

abortions among both younger and older women, while it decreased in the other age groups. Additionally, a decline was observed in the proportion of Spanish women and those with lower educational levels among those who had abortions, alongside an increase in the proportion of women with higher education.

Figure 1. Changes in composition of the Spanish female population 12-52 between 2011 and 2021. Differences in percentages, 2021-2011.

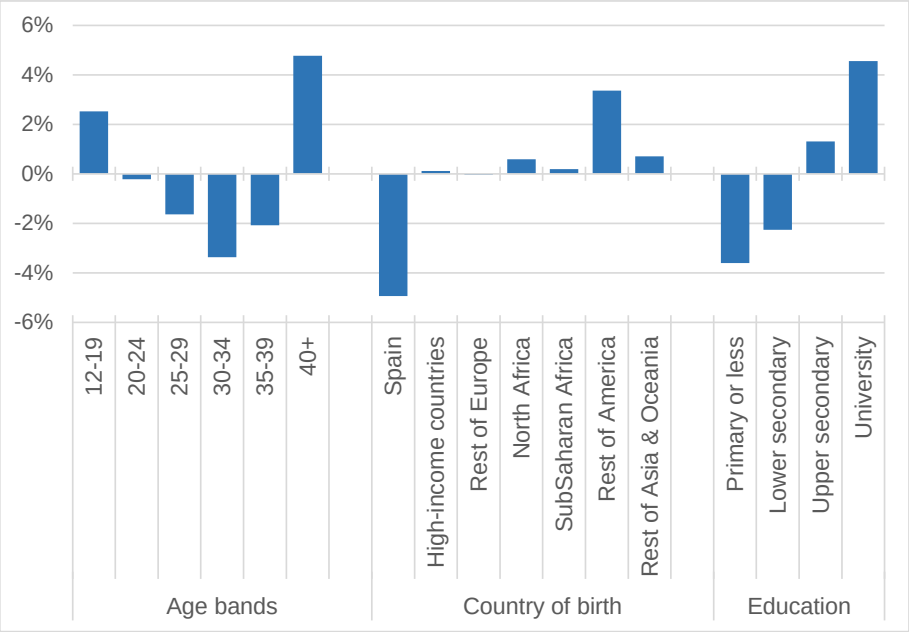


Figure 2 presents the results related to compositional effects (explained portion). Compositional effects account for nearly 40% of the observed change. Changes in the composition by age and educational level significantly contribute to the decrease in abortion rates. In contrast, composition by origin contributes in the opposite direction.

Figure 2. Results of the Oaxaca-Blinder Decomposition: Contribution of Characteristics to the Change in Abortion Rate 2011-2021

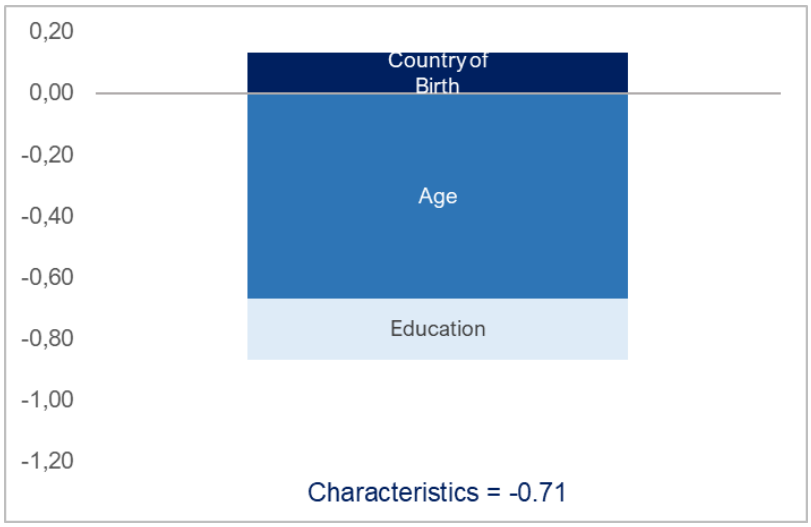
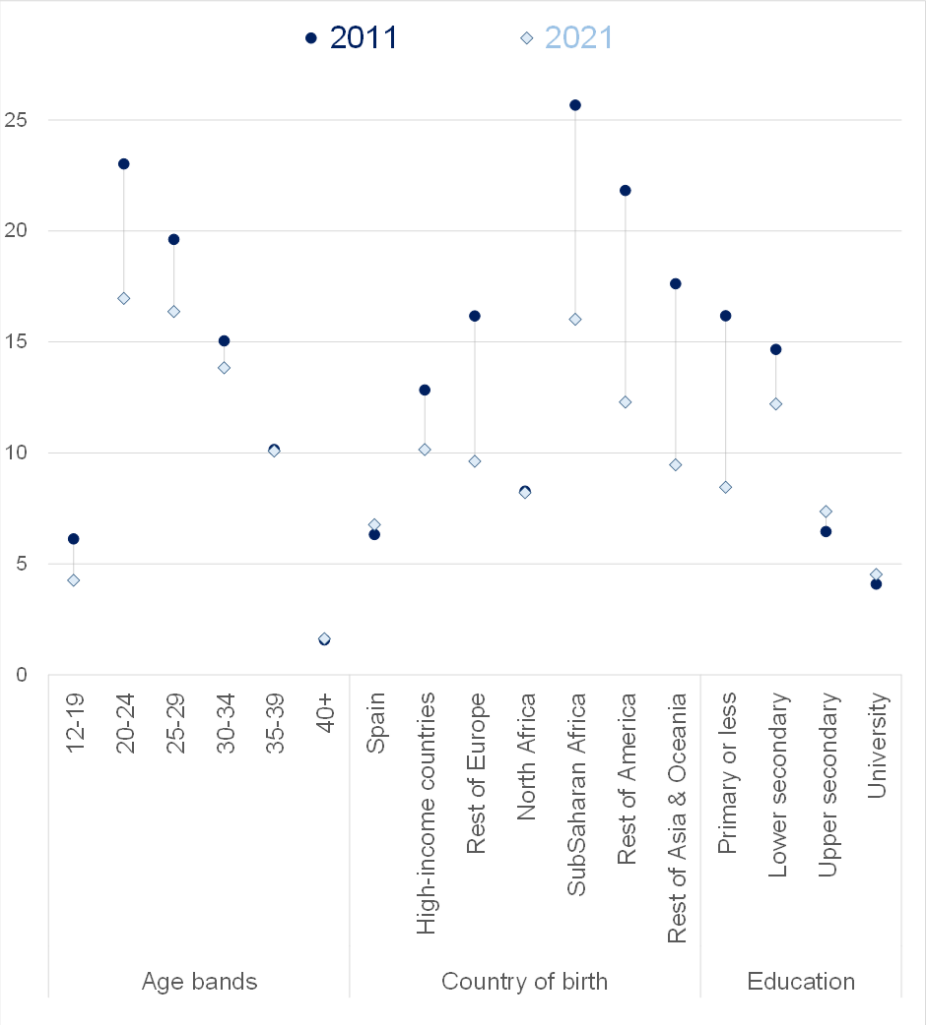


Figure3 summarizes the results of the Poisson regression. A decline in the probability of abortions among younger women is evident, reinforcing the compositional effect observed earlier. Regarding origin, Spanish women show slightly higher probabilities of having abortions in 2021 compared to 2011, while almost all immigrant groups have reduced their probabilities of abortion, suggesting that the decline in crude rates is primarily due to changes in the composition of the Spanish population by origin during the study period. Lastly, there is a shift in abortion probabilities among those with lower educational levels, indicating a combined effect of changes in both composition and behavior.

Figure 3. Predictive margins of rates per thousand of induced abortions in 2011 and 2021 estimated by a Poisson regression model.



Conclusions

Our study highlights the importance of understanding changes in abortion rates as a multidimensional process. Grasping this phenomenon requires recognizing the dynamics of individual behaviors and preferences in response to social and economic changes, as well as understanding how population composition evolves. We emphasize a frequently overlooked aspect: processes like immigration and emigration, shifts in the educational

composition of the population—especially among women—and population aging significantly impact the propensity to seek an abortion.

References

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