

Perinatal Health Inequalities in the Netherlands: The Role of Income and Neighborhoods



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Objective

To document the association between **adverse birth outcomes** (small for gestational age (SGA), preterm birth & infant mortality) and a wide range of **sociodemographic circumstances**.

Background

1. Adverse birth outcomes are more prevalent among low-SES parents and in low-income neighborhoods.
2. Hence, policymakers might target high-risk areas and demographics to address this.
3. However, previous studies have not been able to isolate geographic variation while adjusting for income-driven parents' selection.

Data

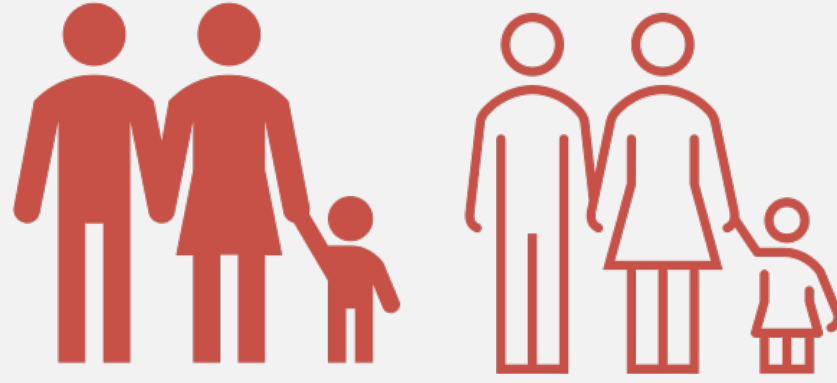
Using Dutch administrative data we link 1.5 million births between 2008-2016 to:



1) Parents' income



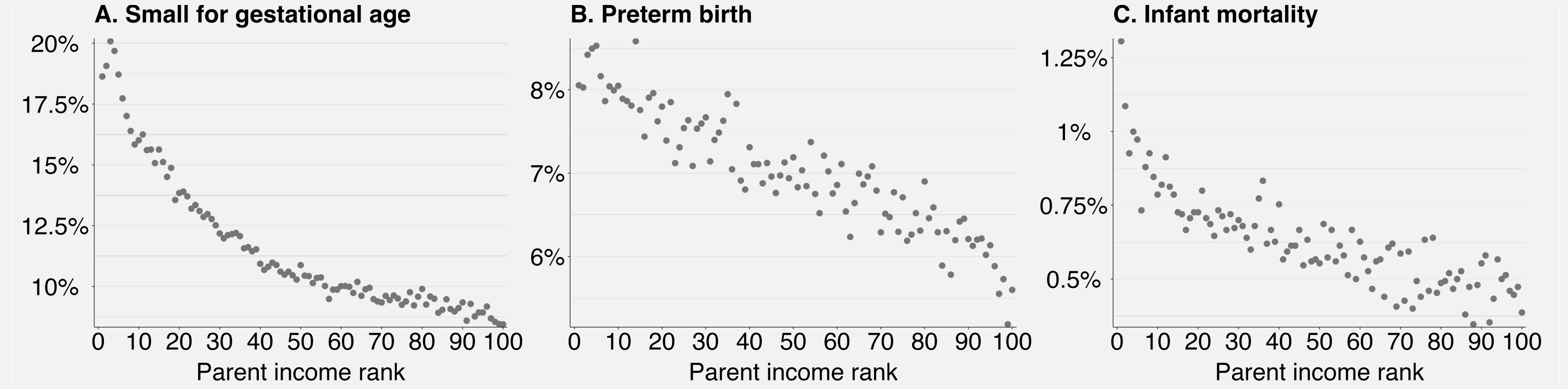
2) Migration background



3) Neighborhoods

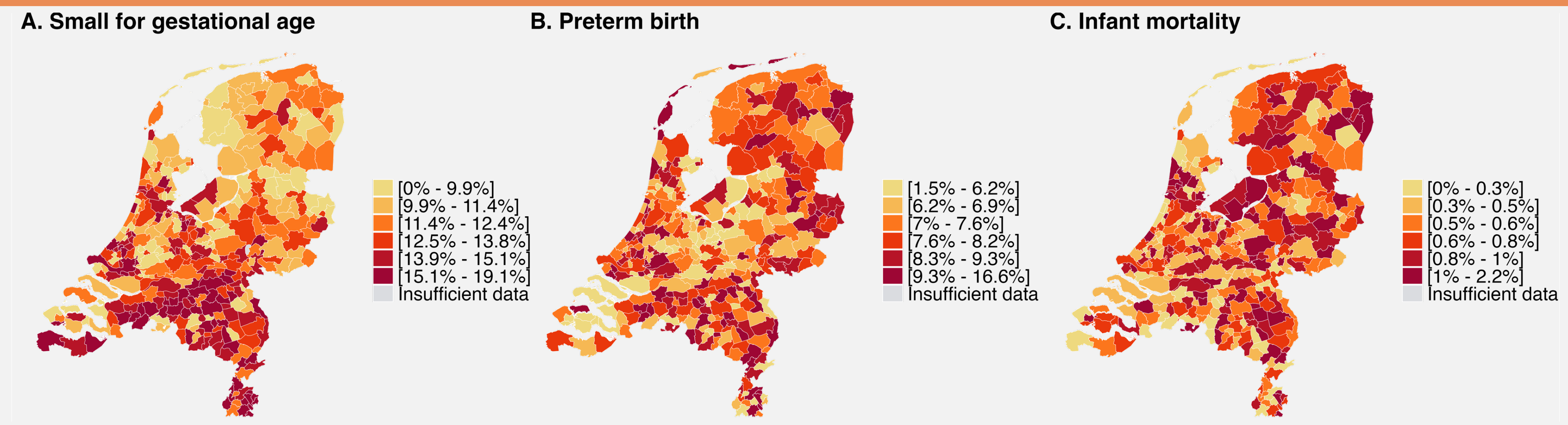


Income and Perinatal Health



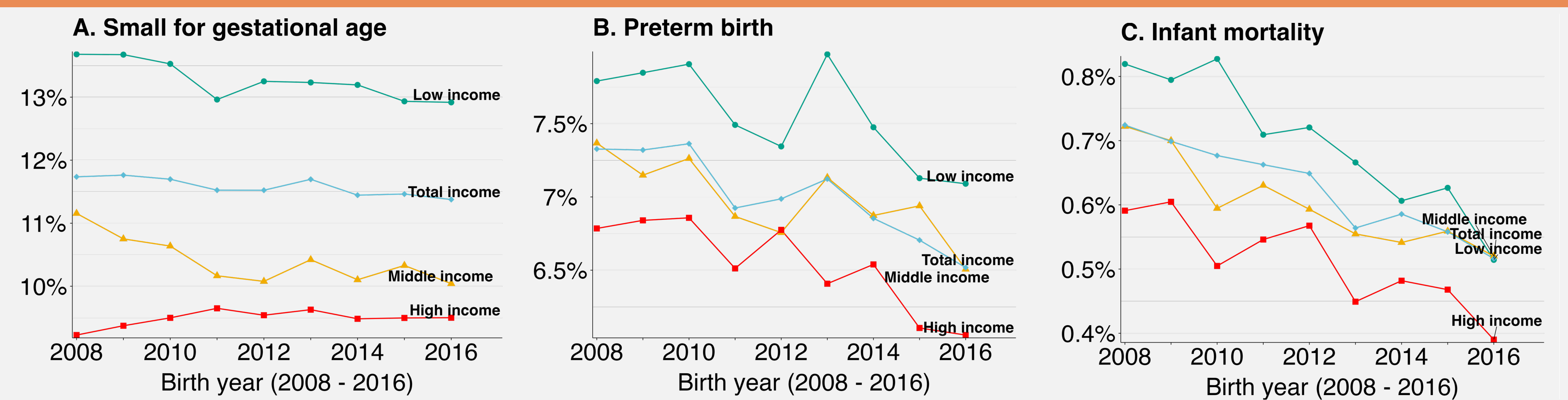
Birth outcomes in the Netherlands vary substantially by parents' income. Low-income births have worse outcomes than high-income births: 18.6% vs. 8.4% for small for gestational age, 8.4% vs. 5.6% for preterm birth, and 1.3% vs. 0.4% for infant mortality.

Spatial Variation of Birth Outcomes for Low-income Parents



Large geographic variation in birth outcomes among low-income parents (around € 52,749) can be observed. In Heerlen (southeast mining zone), children are twice as likely to be SGA, 1.8x more likely to be preterm, and 2.8x more likely to result in infant mortality, than in Barneveld (central NL).

Perinatal Health Variation over Time by Income



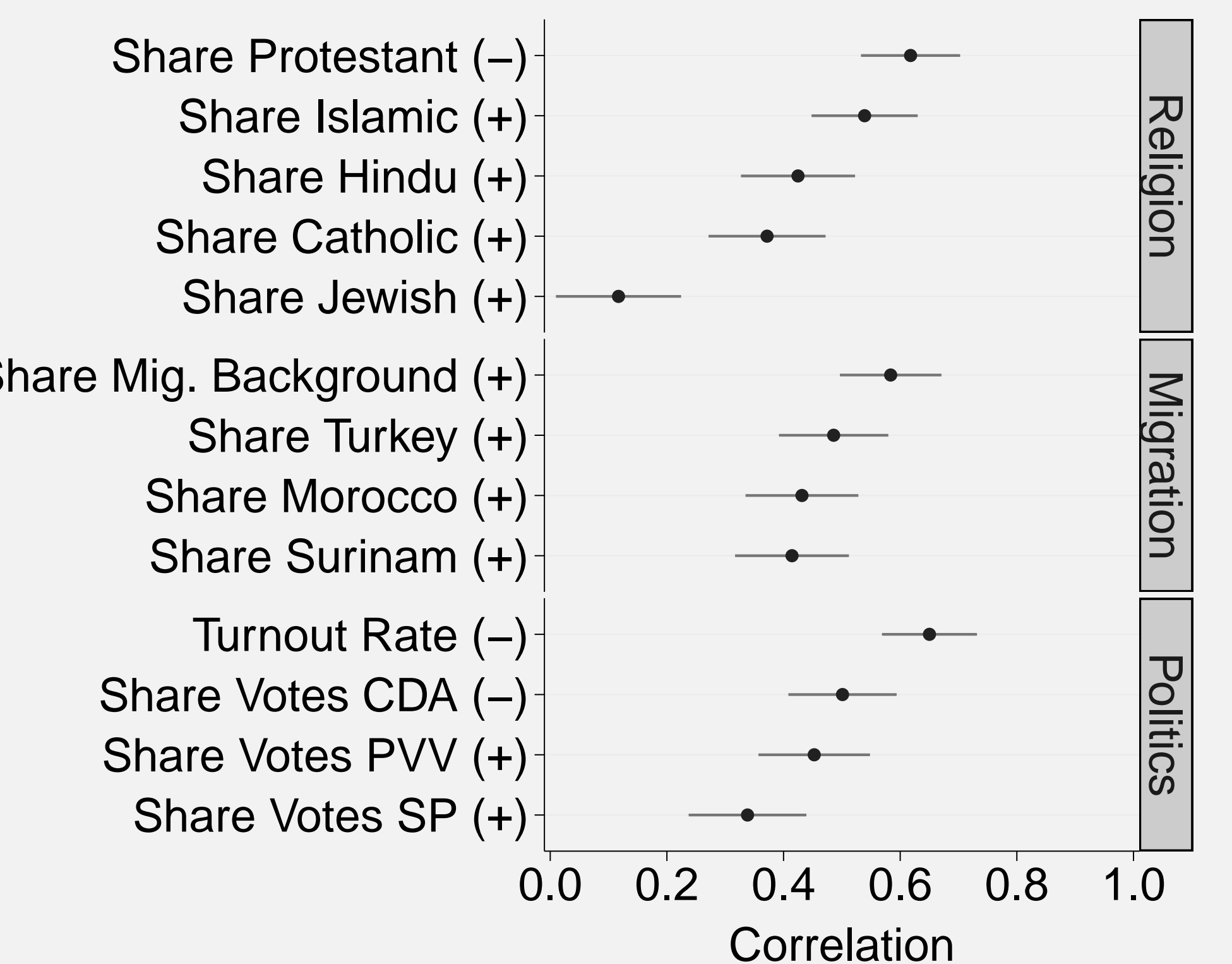
Between 2008-2016, preterm birth rates decreased from 7.3% to 6.8%, and infant mortality decreased from 0.72% to 0.58% across all income groups. However, SGA rates remained stable during this time.

SGA by Background and Income

Background	Total income	Low income	Middle income	High income
Total	11.5%	13.1%	10.3%	9.4%
Native Dutch	10.7%	12.7%	9.8%	8.9%
Moroccan	10.9%	11.1%	10.9%	10.4%
Turkish	12.8%	13.0%	11.8%	10.8%
Dutch Antilles	16.9%	16.1%	13.9%	12.6%
Surinamese	22.7%	23.4%	21.8%	21.9%

Controlling for parents' income, parents with a Surinamese background have the highest incidence of SGA than other backgrounds.

Correlation Analysis of SGA



- Areas, where low-income parents are more likely to experience adverse birth outcomes, are characterized by a large share of:
1. Roman Catholic and Muslim, but not Protestant Christian;
 2. Residents with an immigrant background;
 3. Voters for two populist parties on the left and the right of the political spectrum.

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