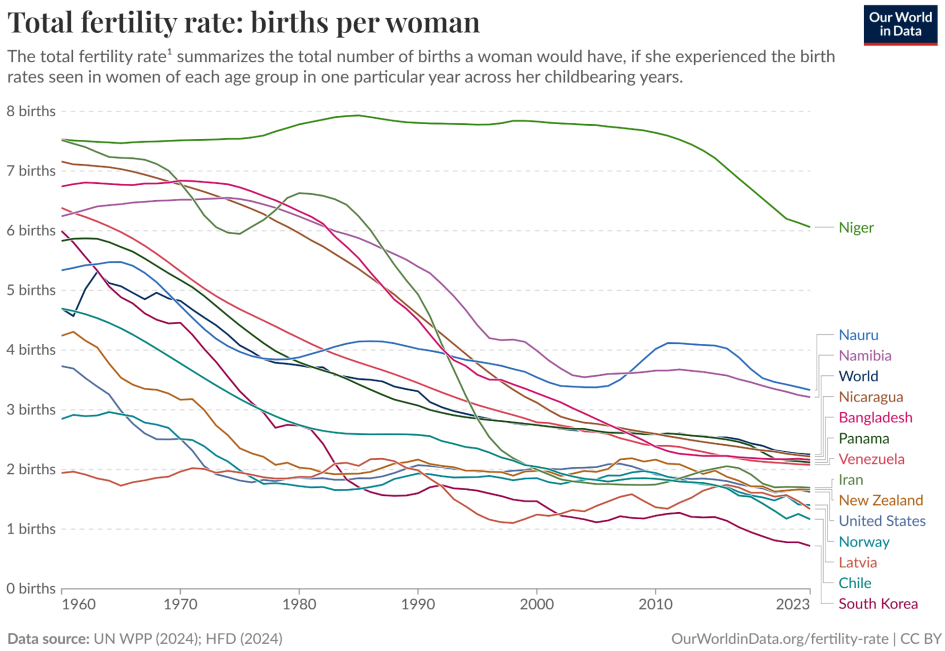
Analyzing the Factors of Fertility Rates

A DS 4002 Case Study by Dana Pham



Many high-income countries have experienced a decline in fertility rates, falling below the replacement level of 2.1 children per woman. This trend, coupled with increased life expectancy, is leading to aging populations and shrinking workforces. Factors such as economic pressures, high living costs, delayed childbearing, and limited access to family-friendly policies all contribute to this decline. While developing countries have higher fertility rates, these are often impacted by lower female education and access to healthcare. Understanding the social and economic drivers of fertility rates is crucial for shaping policies that address these demographic challenges.

As a data scientist, you have been tasked with analyzing the factors that influence fertility rates. You will conduct an in-depth analysis of the data, using regression models to examine how different social and economic factors correlate with fertility rates, and apply statistical models to predict fertility rates based on these variables. After completing the analysis, you will generate visualizations to present your findings and provide actionable insights that could help inform policy decisions on how to address the challenges of aging populations and declining birth rates.

World Health Organization, “Ageing and health,” World Health Organization, Oct. 01, 2024. https://www.who.int/news-room/fact-sheets/detail/ageing-and-health

D. Bloom, M. Kuhn, and K. Prettner, “Confronting low fertility rates and population decline,” CEPR, Aug. 12, 2024. https://cepr.org/voxeu/columns/confronting-low-fertility-rates-and-population-decline