Proposal

Visualizing Abortion Trends and Population Dynamics in the EU

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Abstract

This project explores the complex interplay between abortion rates, natality trends, and population changes across EU member states. Using a combination of publicly available datasets—including abortion statistics, birth rates, and demographic data—this project aims to uncover patterns and regional differences. Through interactive and comparative visualizations, we seek to highlight policy impacts, healthcare access, and social dynamics shaping reproductive outcomes in Europe.

Introduction (Motivation, Background, and Objectives)

Abortion remains a highly sensitive and politicized issue, yet it is also a deeply human and social reality that varies greatly across European nations. While some EU countries have liberal access to abortion services, others enforce strict regulations, influencing not only abortion rates but also natality and population growth.

The motivation for this project lies in visualizing these variations and understanding how they relate to broader demographic trends. I aim to raise awareness and provide insightful, data-driven narratives about reproductive health in the EU.

Review of Existing Visualizations

Many visualizations exist regarding abortion data, such as:

- **Our World in Data's Abortion Law Map:** Useful for comparing legal restrictions, but lacks temporal trends and deeper correlations with birth rates or demographics.
- **Eurostat Visual Dashboards:** Present country-by-country abortion or natality rates but lack integrative views combining multiple datasets.
- **World Bank Fertility Rate Choropleths:** Provide valuable insights but are disconnected from abortion or policy data.

These visualizations are helpful in isolation but rarely connect the dots between different data dimensions—something this project aims to do with layered visual narratives.

Questions or Objectives

1. How do abortion rates vary across EU countries, and how have they changed over time?
2. Is there a visible relationship between abortion rates and natality or overall population growth?
3. Can we detect the impact of specific policy changes or events (e.g., bans, liberalizations)?
4. How do demographics like age and region affect abortion and natality rates?
5. What kinds of visualizations can best support public understanding of these sensitive trends?

Visualizations I plan to create:

- Choropleth maps of abortion rates and birth rates by country and year
- Line charts comparing abortion trends vs. natality over time
- Scatter plots showing correlations (e.g., abortion rate vs. fertility rate)

Datasets and Methods

Datasets

I plan to use the following sources:

- **Eurostat Abortion Statistics:** Yearly data by country, including age groups and gestational weeks.
- **Eurostat Natality and Fertility Statistics:** Data on births by country and year.
- **Eurostat Demographic Data:** Population by country, age group, gender, etc.
- **Kaggle World Abortion Dataset**

These are tabular datasets with columns like:

- Country, Year
- Abortion Rate, Birth Rate, Fertility Rate
- Population by Age, Total Population
- Abortion Method, Gestational Week

Methods

- **Data Cleaning:** Harmonizing timeframes and aligning country codes
- **Visualization Libraries:** Seaborn/Matplotlib
- **Temporal Analysis:** Line and area charts to explore long-term trends
- **Interactive Filtering:** Dashboards for deeper user-driven exploration

The datasets are rich, detailed, and appropriate for answering the questions above. They support temporal, spatial, and demographic analysis, making them ideal for a multi-layered visual project.

References

- Eurostat: `https://ec.europa.eu/eurostat`
- Our World in Data: `https://ourworldindata.org/grapher/fertility-vs-unmet-contracept`
- World Bank Fertility Data: `https://data.worldbank.org`
- European Abortion Policies Database (UN): `https://abortion-policies.srhr.org`
- Tableau Public Dashboards on Abortion: `https://public.tableau.com/app/search/vizzes/abortion`