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This project provides a descriptive empirical overview of global social inequality and its association with selected social outcomes, including happiness, homicide rates, and life expectancy. Using internationally harmonized datasets, we examine how income inequality has evolved over time, how it differs across countries and regions, and how it is related to happiness, homicide rates, and life expectancy.

Income inequality is measured using the Gini coefficient. The analysis combines long-term trend analysis with cross-sectional comparisons. Before-tax income inequality is employed to analyze global and regional trends, abstracting from national tax and redistribution systems, while after-tax income inequality is used when examining real-life outcomes such as happiness, homicide rates, and public health.

### **Research Questions**

The study addresses three main questions:

- I) How has social inequality evolved globally and within individual countries over time?
- II) How do inequality levels differ across nations and major world regions?
- III) How is income inequality related to happiness, homicide rates, and life expectancy?

### **Methodology**

The empirical analysis is confronted with challenges related to data heterogeneity, missing observations, and cross-country comparability over time. To address these issues, the study is sourced exclusively from Our World in Data, following the World Inequality Database (WID) methodology. Income inequality is measured using the Gini coefficient. To ensure methodological transparency and avoid model-based distortions, no interpolation or imputation of missing values is performed. The analysis uses population-weighted aggregates, allowing for a consistent comparison across countries with differing population sizes. Before-tax income inequality is employed to capture long-term macro-level trends, abstracting from national tax and redistribution systems.

Global and regional inequality trends are analyzed using population-weighted aggregates; all analyses are based solely on observed data points. Global and regional inequality trends are allowing for a consistent comparison across countries with differing population sizes. Before-tax income inequality is employed to capture long-term macro-level trends from 2000 to 2023, abstracting from national tax and redistribution systems.

To account for regional heterogeneity, selected representative countries within each continent with the method of Stratified Sampling are compared using a unified visualization scale. All country-level time series are plotted with identical axis limits, ensuring direct visual comparability and preventing scale-induced distortions. This approach allows absolute differences in inequality levels and trend magnitudes to be clearly identified.

Associations between income inequality and social outcomes are examined using cross-sectional data for the year 2021 with sufficiently complete observations. After-tax income inequality is used in these analyses, as it better reflects individual living conditions and redistributive effects. The relationships between inequality and happiness, homicide rates, and life expectancy are quantified using Pearson correlation coefficients and visualized through scatterplots with linear regression lines. All results are interpreted descriptively, without causal inference.

## **Results**

At the global level, income inequality shows a gradual downward trend over the past twenty years, although overall inequality remains high. Regional disparities persist: Latin America consistently exhibits the highest inequality levels, while Europe maintains relatively low and stable inequality. Other regions display intermediate levels with heterogeneous trends.

Country-level analyses reveal substantial heterogeneity within continents. Countries sharing similar geographic or economic contexts often follow markedly different inequality trajectories, indicating that regional averages conceal important national dynamics.

Regarding social outcomes, higher income inequality is generally associated with lower life satisfaction, higher homicide rates, and lower life expectancy. The correlation with happiness is weakly negative, whereas the associations with homicide rates and life expectancy are more pronounced. However, these relationships vary across regions, and income inequality alone does not fully explain cross-country differences in social outcomes.

## **Limitations and Outlook**

The analysis is subject to data limitations, including missing observations for certain regions and years, which restricts the study of short-term fluctuations. In addition, some indicators — particularly self-reported happiness — are sensitive to cultural response bias, complicating cross-country comparisons. The reliance on the Gini coefficient as a single, highly aggregated measure also limits insight into underlying distributional mechanisms.

Despite these limitations, the results reveal clear and robust patterns. Overall, social inequality has declined modestly but remains substantial, varies widely across countries, and is systematically related to important social and health outcomes. These findings highlight the importance of considering income distribution in analyses of related factors and point to the need for more nuanced measures and context-specific approaches in future research.