Economic Inequality and Happiness in Europe (based on 2023 data)

Introduction

Happiness and subjective well-being are increasingly recognized as central measures of a society's progress. While economic growth generally improves living standards, its benefits are not always distributed evenly across populations. High income inequality can reduce overall happiness by generating social tension, a sense of injustice, and weaker community cohesion.

This research examines how income inequality and average income levels (measured by GDP per capita) influence happiness across European countries in 2023. Understanding these relationships helps policymakers design strategies that not only stimulate economic development but also enhance the overall well-being of citizens.

Research Hypotheses

H1: Income Inequality and Happiness

Higher income inequality (measured by the Gini Index from the World Bank) is expected to be associated with lower happiness levels.

Theoretical justification:

According to social comparison and relative deprivation theories, individuals assess their well-being relative to others. When income gaps widen, feelings of unfairness and social division increase, reducing average life satisfaction even in economically developed societies. Greater inequality may also erode social cohesion, leading to higher stress and lower perceived happiness.

H2: Income Level and Happiness

Higher average income levels (measured by GDP per capita) are expected to be associated with higher national happiness.

Theoretical justification:

The economic well-being and Maslow's hierarchy of needs frameworks suggest that as income rises, people can better meet their material needs, enjoy improved healthcare,

education, and leisure, and experience higher life satisfaction. However, the relationship may exhibit diminishing returns, meaning that after basic needs are met, additional income contributes less to happiness.

H3: Average Income per Adult and Happiness

Countries with a higher average income per adult (measured by World Inequality Database or World Bank household income data) are expected to report higher happiness levels.

Theoretical justification:

While GDP per capita reflects overall economic output, average income per adult captures the actual individual purchasing power and living standards more directly. The *Easterlin Paradox* suggests that happiness increases with income only up to a certain point — so examining personal income provides a clearer view of how wealth translates into subjective well-being.

H4: Poverty Rate and Happiness

A higher poverty rate (percentage of population below the national or international poverty line) is expected to be associated with lower happiness levels.

Theoretical justification:

Poverty is linked to financial insecurity, limited access to education and healthcare, and chronic stress — all major determinants of low well-being. According to *needs-based* and *capability* theories (Sen, 1999), deprivation of basic capabilities prevents people from living fulfilling lives, directly reducing average national happiness.

Additional potential confounders:

Average income per adult may partially confound the relationship between GDP per capita and happiness, as both capture economic prosperity but from different perspectives — GDP reflects the overall production of goods and services, while average income per adult reflects household-level purchasing power. Including both variables in the model helps control for this overlap and isolates their individual effects on happiness.

Confounders and Interaction Effects

Potential confounders:
GDP per capita and average income per adult may both confound the relationship between income inequality and happiness. Wealthier countries tend to have higher happiness and lower inequality, while countries with higher individual incomes also report greater life satisfaction. To accurately capture these effects, both variables should be included as controls in the regression model.

Interaction effects:
Two interaction effects are theoretically plausible:

1. **Between GDP per capita and the Gini Index** — the negative impact of inequality on happiness is expected to be stronger in low-income countries and weaker in high-income ones.
   Reasoning: In poorer societies, inequality amplifies feelings of deprivation, while in wealthier societies, higher general prosperity buffers these effects.

2. **Between poverty rate and income inequality** — the psychological cost of inequality is likely to increase in countries with high poverty levels.
   Reasoning: When many people live below the poverty line, visible inequality may intensify perceived injustice and lower overall happiness more sharply.

Theoretical Check of Regression Assumptions

1. Continuity of the Dependent Variable:
The dependent variable, the **Happiness Index** (ranging from 0 to 10, as reported in the *World Happiness Report 2023*), is treated as continuous. Although technically ordinal, it is widely used as a continuous measure in cross-country analyses, enabling the use of linear regression.

2. Measurement of Independent Variables:
All four independent variables are continuous and measured at the national level:

- **Gini Index (World Bank, 2023)** – measures income inequality (0 = perfect equality, 100 = maximum inequality).
- **GDP per capita (log-transformed)** – reflects the average national income level.
- **Average income per adult** – indicates real household-level purchasing power.
- **Poverty rate** – percentage of population below the national or international poverty line.

No dummy variables are required.

3. Linearity:

A linear relationship is theoretically expected between **happiness** and both predictors, although for GDP per capita, a **log transformation** is applied to account for diminishing marginal effects of income on well-being.

4. Independence of Observations:

Each observation represents one European country in 2023. Since the data are cross-sectional (not panel), observations are considered independent.

5. Multicollinearity:

Some correlation may exist between GDP per capita, average income per adult, and poverty rate, since they all describe aspects of economic well-being. However, they capture distinct dimensions — national output, individual income, and economic deprivation — so severe multicollinearity is not expected. Correlation diagnostics (such as the Variance Inflation Factor) should still be checked before running the regression.

Conclusion

This theoretical framework supports a multiple linear regression model that investigates how income inequality and average income levels affect happiness in Europe.
It is expected that inequality decreases happiness, while higher GDP per capita increases it. The model also anticipates that the negative impact of inequality may be less pronounced in wealthier countries.
By clarifying these economic determinants of well-being, the study contributes to understanding how European societies can balance economic growth with social fairness to promote sustainable happiness.

References:

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