TEAM 9

industry:
DEMOGRAPHIC ANALYSIS

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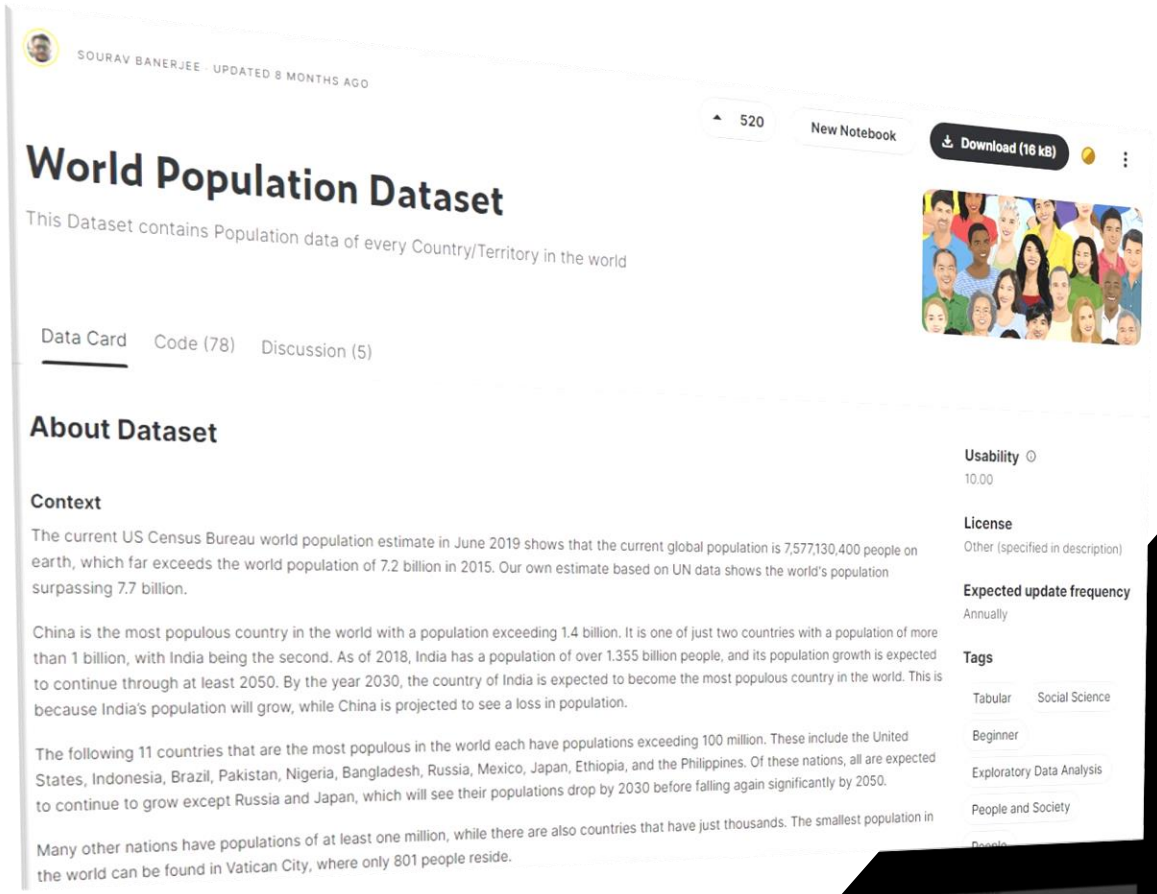
A look at how
socioeconomic factors
influence population growth



Found on Kaggle.com, this dataset showcases the world population by country since 1970 at varying datapoints.

BASE DATASET

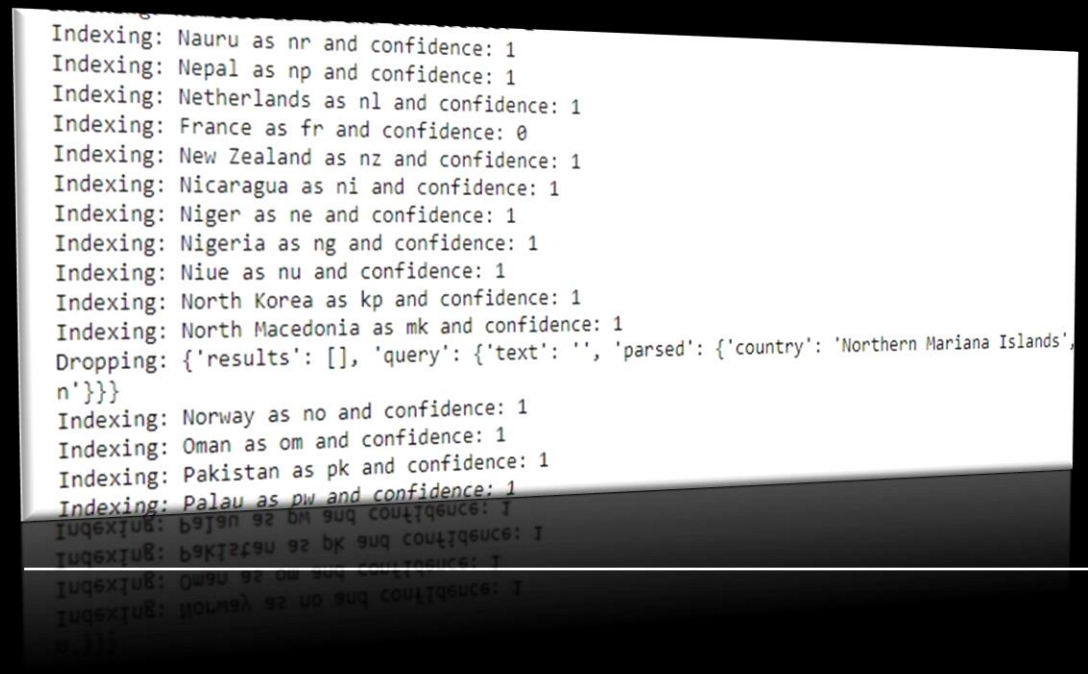
Which countries show significant shifts in population growth rates?
What socioeconomic factors may have influenced these changes?

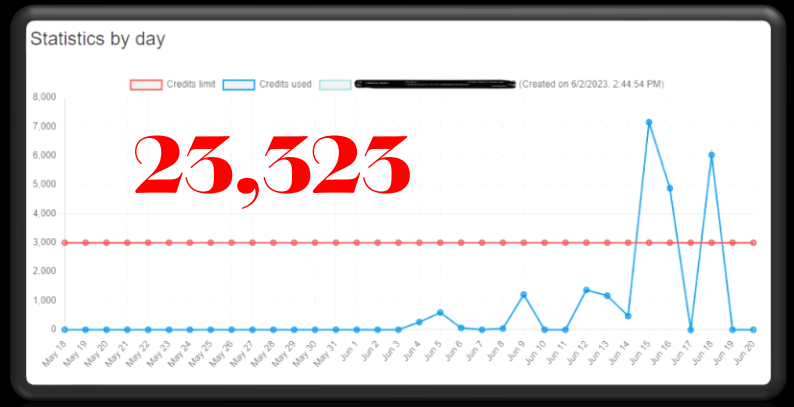
Which factors to test?

POVERTY EDUCATION SAFETY

Before we began

- Country iso code is a universal identifier.
- Cleaned data through GeoApify to make sure sets would merge.



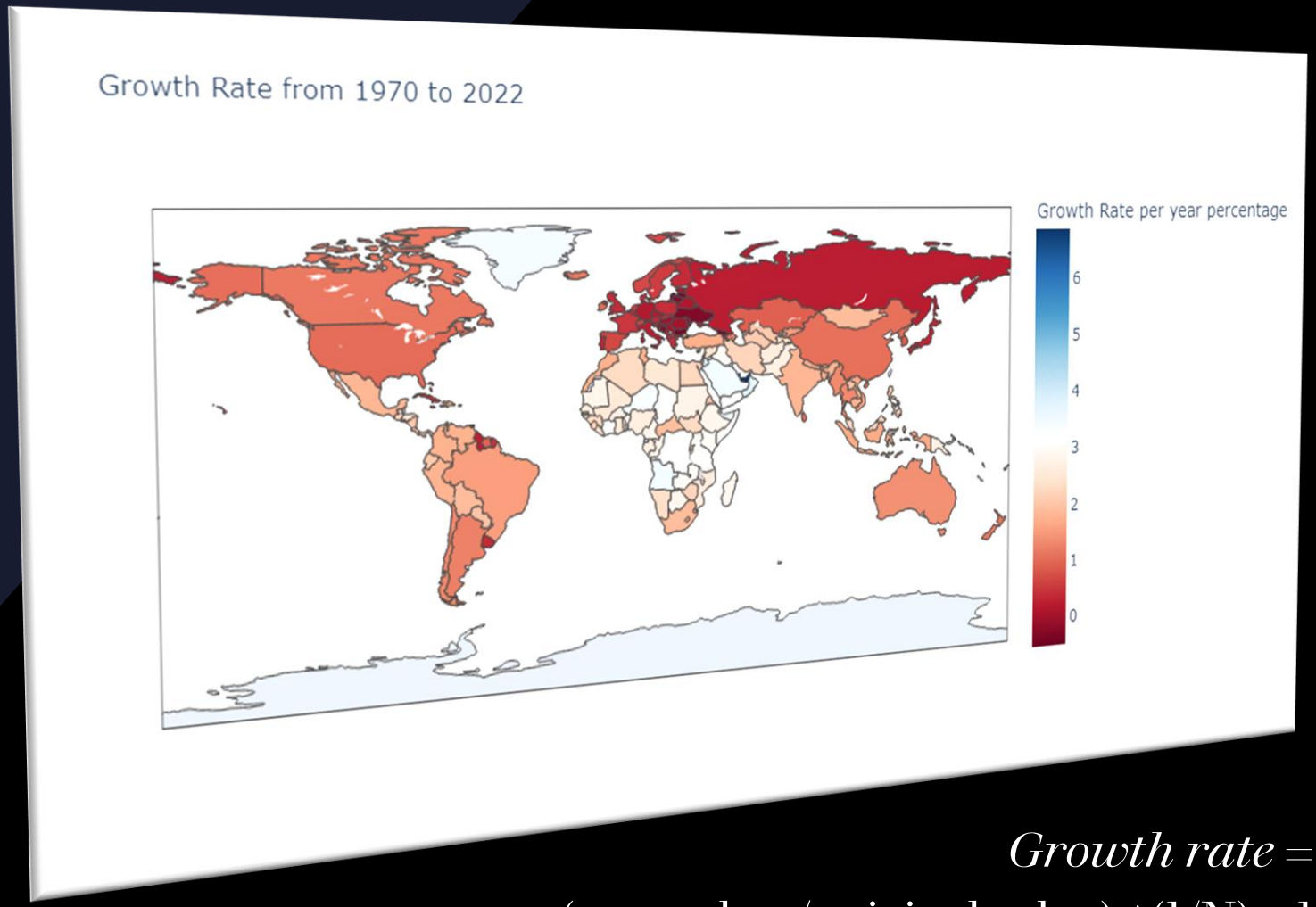


- ~~"U.S.A."~~
- ~~"USA"~~
- ~~"United States of America"~~

Use API to fetch common syntax and iso code

- us
- United States

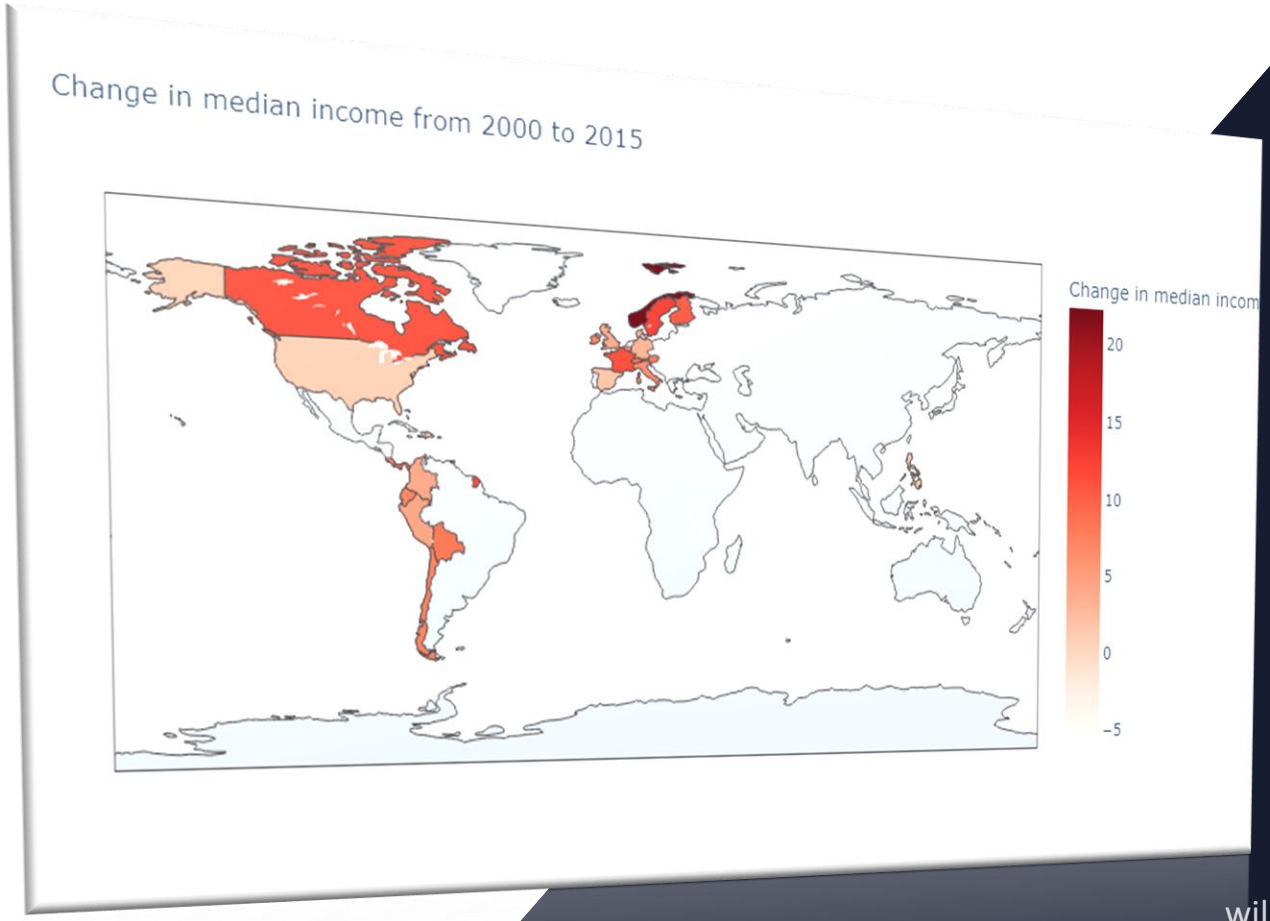
Cleaned base dataset



Growth rate =

(new value / original value) ^(1/N) – 1

(N = number of years)



Income below which half the population lives

(median income)

POVERTY

Null Hypothesis:

An improvement in a country's median income over time
will have no significant impact on the growth rate of its population.

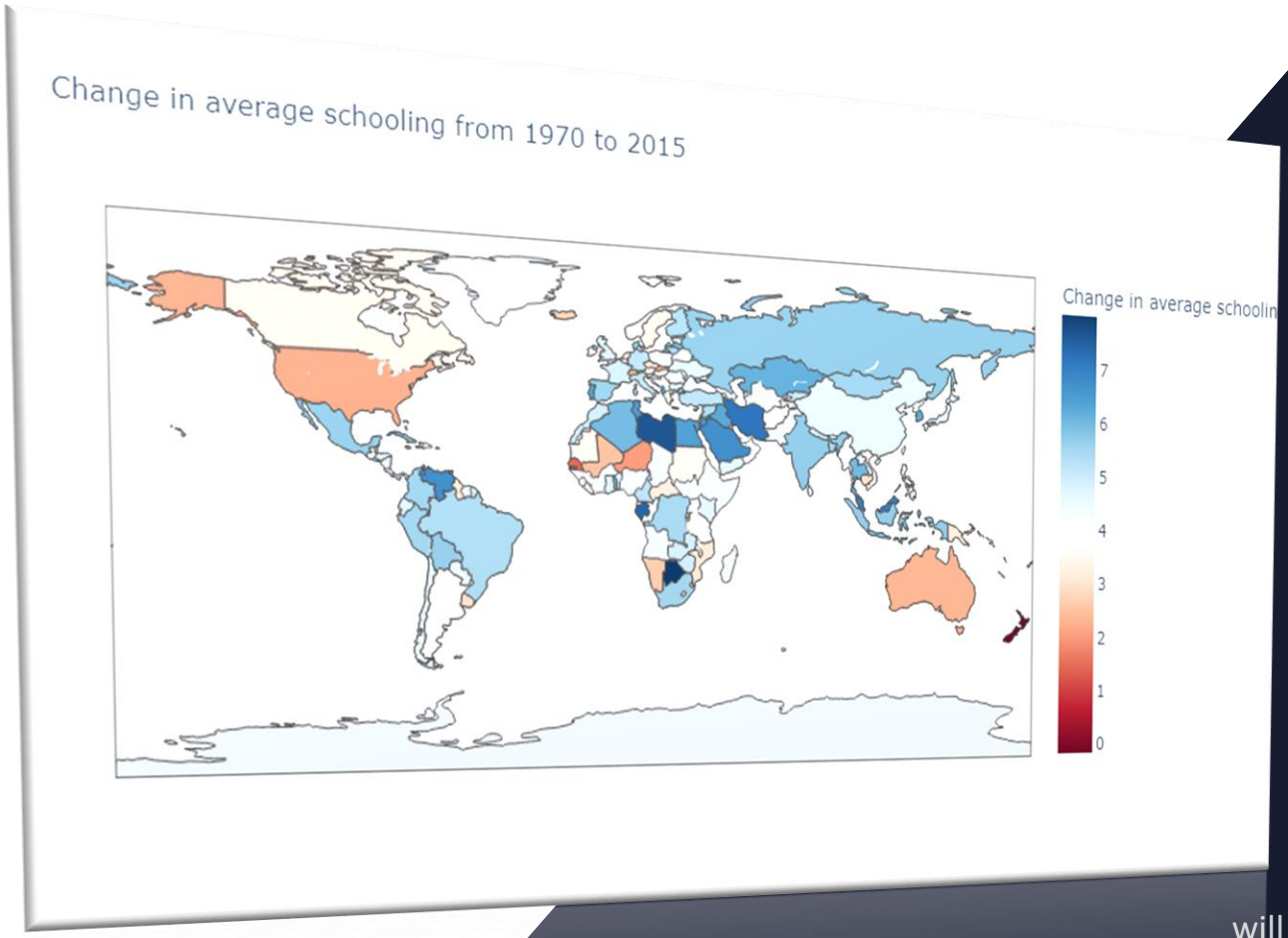
Alternative Hypothesis:

An improvement in a country's median income over time
will have a significant impact on the growth rate of its population.

Change in median income versus growth rate

- Scatter plot has small sample size
- Correlation coefficient = 0.1
- P-value = 0.62476

Conclusion: We fail to reject the null hypothesis



Barro-Lee average years of schooling attained

(average schooling)

EDUCATION

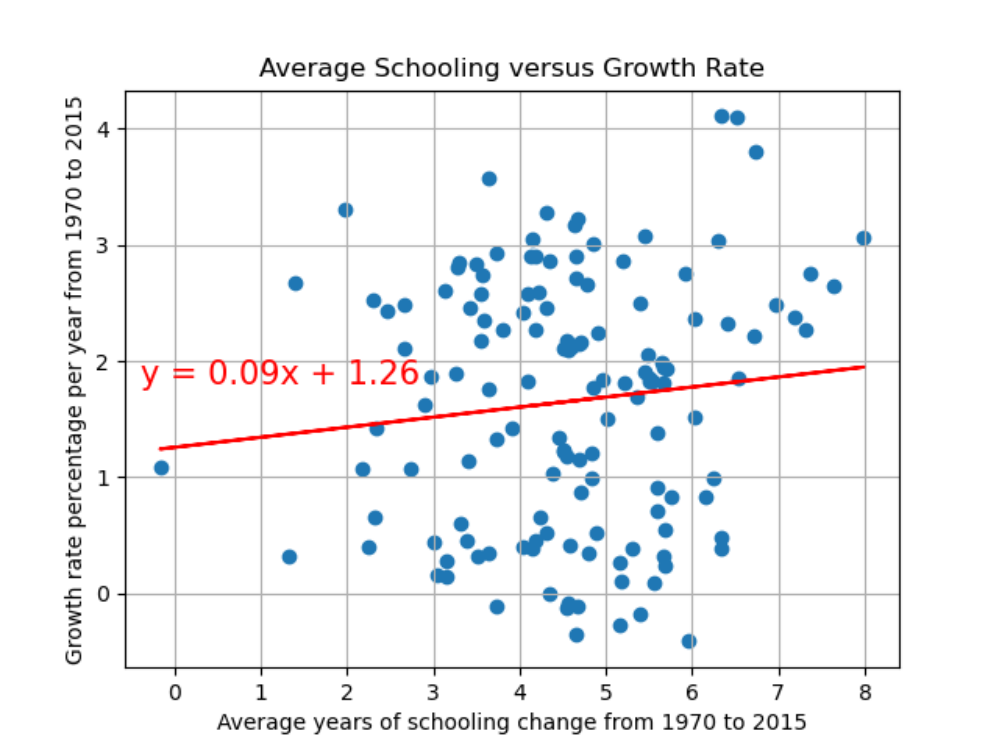
Null Hypothesis:

An improvement in a country's average schooling over time will have no significant impact on the growth rate of its population.

Alternative Hypothesis:

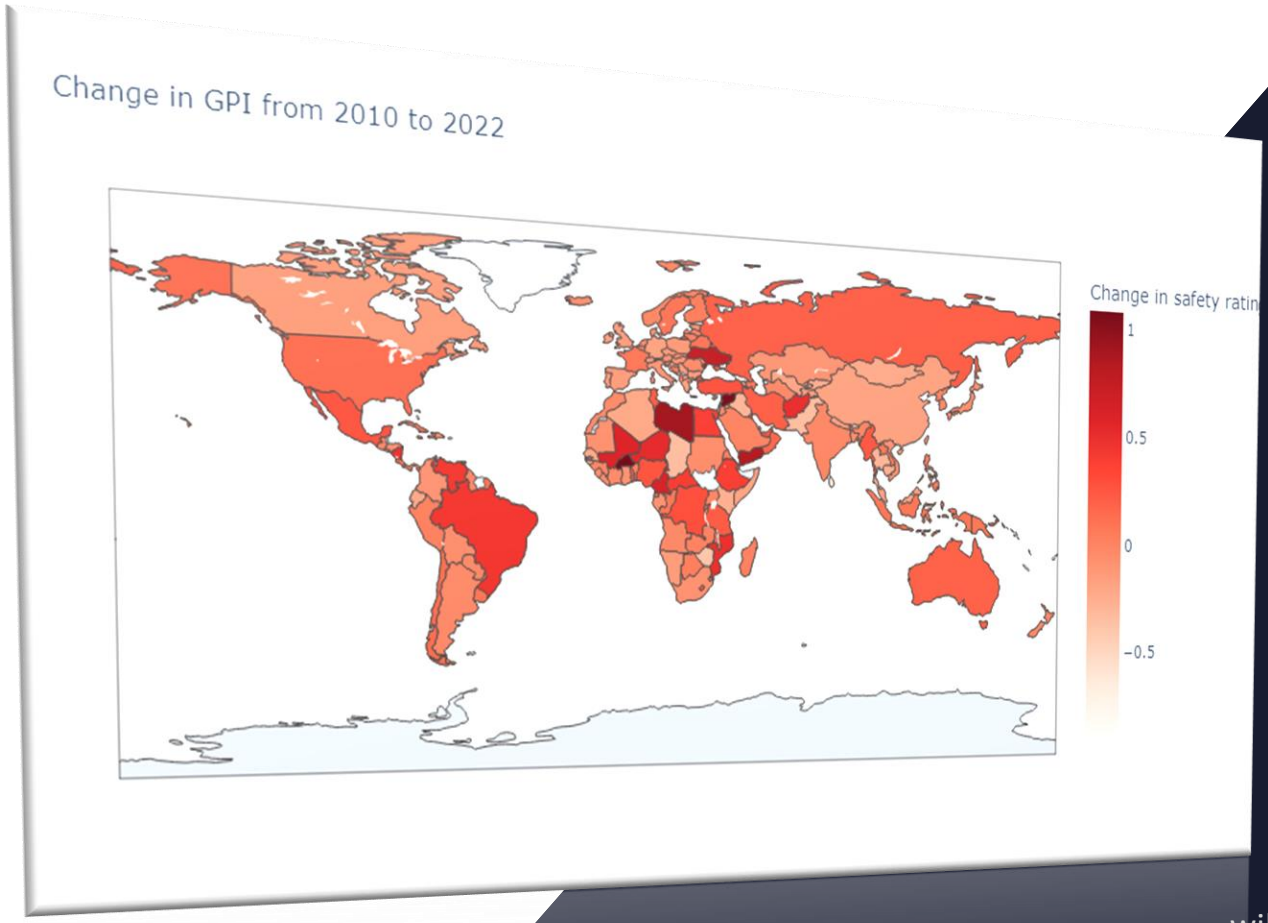
An improvement in a country's average schooling over time will have a significant impact on the growth rate of its population.

Change in average schooling versus growth rate



- Scatter plot shows spread of data
- Correlation coefficient = 0.11
- P-value = 0.20548

Conclusion: We fail to reject the null hypothesis



Global Peace Index

SAFETY

Null Hypothesis:

An improvement in a country's GPI over time will have no significant impact on the growth rate of its population.

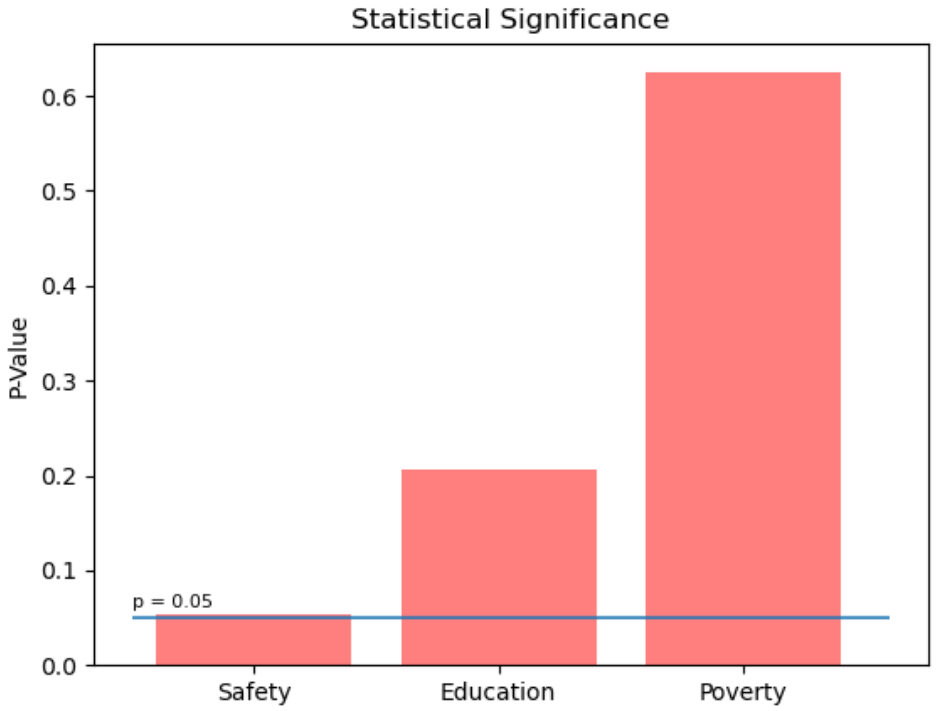
Alternative Hypothesis:

An improvement in a country's GPI over time will have a significant impact on the growth rate of its population.

Change in GPI versus growth rate

- Scatter plot shows clustered datapoints
- Correlation coefficient = 0.15
- P-value = 0.05296

Conclusion: We can (softly) reject the null hypothesis.



** Remember: The higher the p-value, the less statistically significant the correlation.*

Safety showed the most statistically significant correlation to population growth rate.

If a country's GPI improves, the rate at which its population grows will increase.

CONCLUSION