

SI 618 PROJECT 2 PROPOSAL

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1 Motivation

There are several different objective measure to count how a country develops. Social factors like increase in freedom of speech, adoption of democratic values, betterment of women's rights to name a few. Economic factors like per Capita GDP, yearly trade deficit, etc. There are also factors that transcend one particular category like food / nutrition indices, education indices and health indices, that do not belong to either of the two categories. Such socio-economic factors are more complete indicators of progress of any nation. In this project I will focus on economic and socio-economic indicators relate to each other. Some of the questions i will answer are whether economic boom also means better nutrition for its people. Are urban areas moving faster than rural?

2 Dataset

The dataset I have chosen is the World Development Indicators (WDI) available on Kaggle.com [1]. The WDI dataset contains over 400 indicators for each country over the period of 1960-2014 (for many but not all). These are divided several different categories [2].

The country of focus will be India and 1960-2010 will be the timeline I study. Of the 400 indices, this project will attempts to model Education, Economic, Health, Food and Rural. This dataset will be extracted into a Data.Table format for manipulation.

3 Analysis

3.1 Comparing Rural and Urban divide

Comparison between rural and urban poverty with national indicator as the underlying trend of the country. Indicators :

- Rural poverty gap at national poverty lines
- Urban poverty gap at national poverty lines
- Poverty gap at national poverty lines

GGPLOT, Line graph X = year Y = Indicator value

Linear Regression to comment on whether we see them changing in future on not?

3.2 Does better financial condition mean better nutrition

Draw a plot to observe how economic factors correlate with nutrition of the individuals in the country. A regression will help us determine whether the government is using its reserves for feeding its people well.

- Gross capital formation, similar to GDP
- Depth of the food deficit (kilo-calories per person per day)

3.3 Does producing more food mean better nutrition

Plot of annual food production alongside food deficient indicator to see if the deficiency falls as fast as production rises. Indicators:

- Food production index (2004-2006 = 100)
- Depth of the food deficit (kilo-calories per person per day)

3.4 Korea vs India

Comparing rate of development of India and Korea. I plan to draw boxplots for each decade from 1960-2010 .

- Gross capital formation (annual growth, for both India and Korea)

3.5 Women's rights in European countries vs Indian Subcontinent

Bar graph comparing the number of seats in Parliament attained by women (as a reference for women empowerment). Indicator (1994-2010):

- Proportion of seats held by women in national parliaments

3.6 Do wars influence the economy

India and Pakistan have fought 3 wars over the last 70 years, in 1961, 1972 and in 1999. I will draw scatter plot economic indicators ± 5 years before / after the 3 wars for both the countries. This will help me determine whether there is any significant (and lasting) economic impact of war.

3.7 Which economic parameter most correlates with employment rate of India

For developing countries rate of employment is really important. Although, per capita GDP or GDP of the country is most associated with economic progress there are several different related measure. We would want to look at economic indicators that most correlates with employment rate so that the we can work on optimising that.

Techniques: time series analysis and regression

Indicators:

- General government final consumption expenditure (
- Government expenditure on education as
- Gross capital formation
- GDP per person employed (constant 1990 PPP dollar)
- Employment to population ratio, 15+, total

3.8 Does India value is defence over health and education

Time series analysis of yearly spending on defence, health and education.

4 References

- [1] <https://www.kaggle.com/worldbank/world-development-indicators>
[2] <https://www.kaggle.com/kmravikumar/choosing-topics-to-explore>