Global Health Outcomes

A preliminary analysis of global life expectancy indicators.

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Modeling preview:

Multiple Linear regression

R^2 = 0.847

Adjusted R^2 = 0.846

Method: Least Squares

Final # of features: 12

Project Overview:

Context & Goal

- To explore global health status via critical health factors.
- Investigate the impact of social, immunological,

  Economic and mortality indicators.
- Provide recommendations for prescriptive global, public health measures.

Project Overview:

Data

- Life Expectancy and 21 other factors for 193 countries. (WHO: GHO)
- Time span of 15 years (2000-2015)
- Corresponding economic data sourced from United Nations

Project Overview:

Data (cont)

Indicators included in analysis and missing data percent:

Population (13%)

Adult Mortality (3%)

Under five deaths (11%)

Thinness 1 to 9 years (3.5%)

Alcohol (.15%)

Schooling (1.6%)

Total expenditure (.65%)

Hepatitis B (10%)

Polio (8%)

Hiv/aids (15.5%)

Project Overview:

Data (features)

Indicators included in analysis:

Population

Adult Mortality

Under five deaths

Thinness 1 to 9 years

Alcohol

Schooling

Total expenditure

Hepatitis B

Polio

Hiv/aids

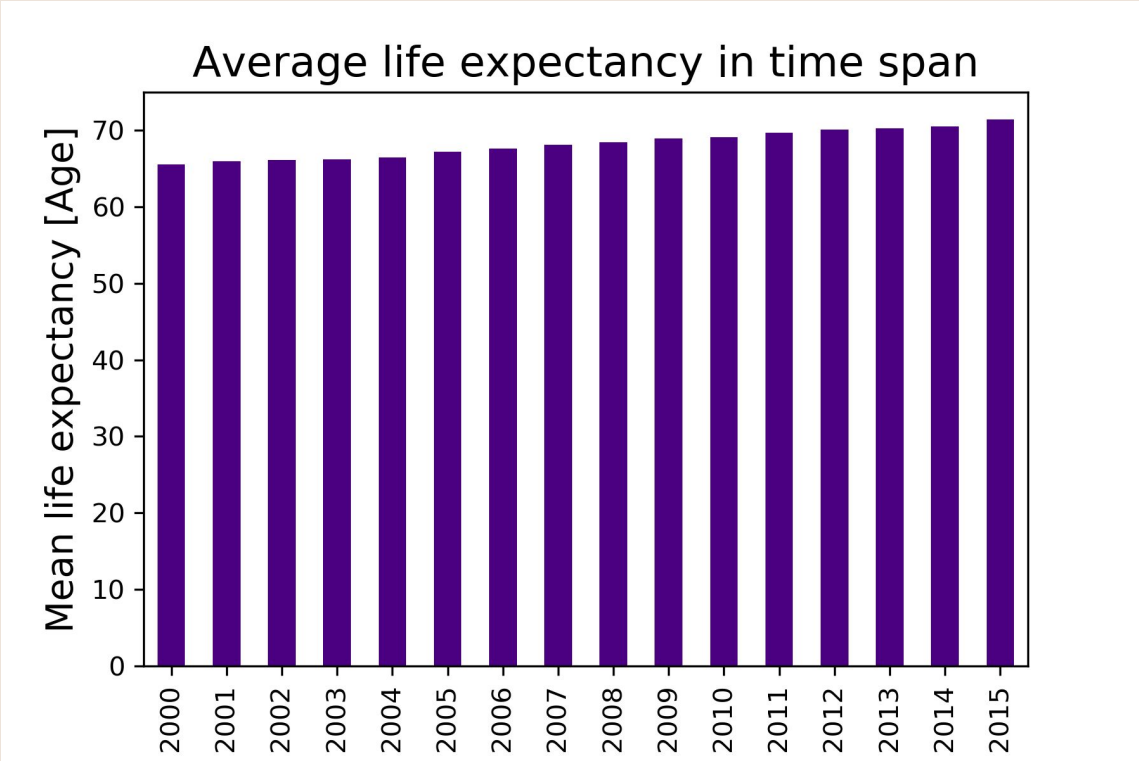
Project Overview:

Data (cont)

Other data completeness issues:

- For smaller countries, missing 5< years.
- GDP information largely missing (~20% of dataset)
- Alternate social factors for countries with no alcohol indicators.

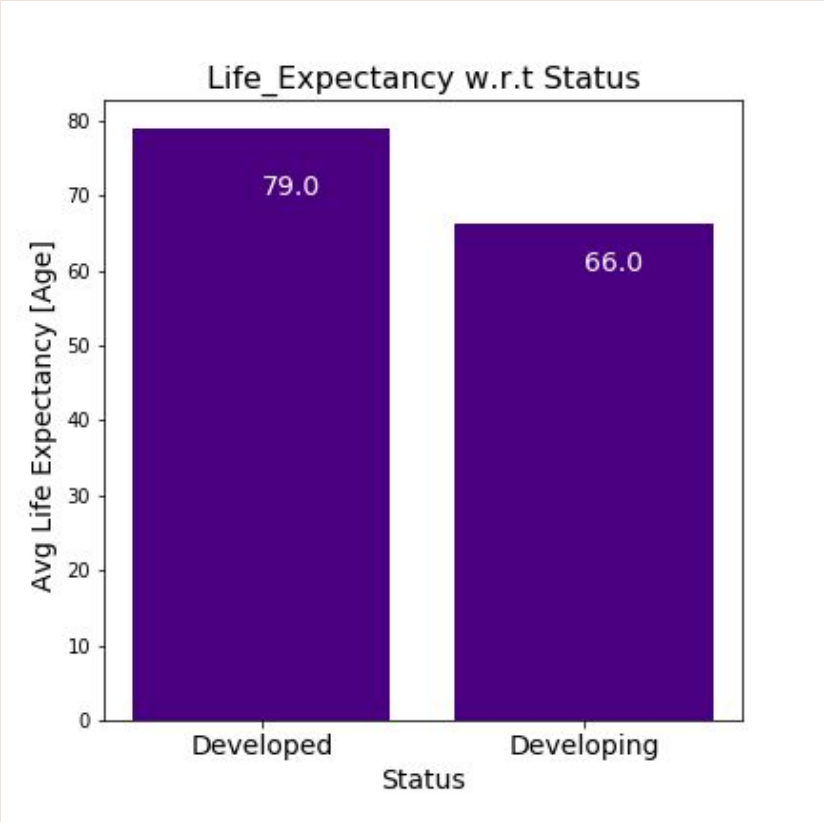
Life Expectancy over data time span.



- Statistically significant result:
  Obs averages are indeed different and not effect of random sampling.

- True developed population values are between (70.6,87.0)

- True developing population values are between (60.9,96.7)



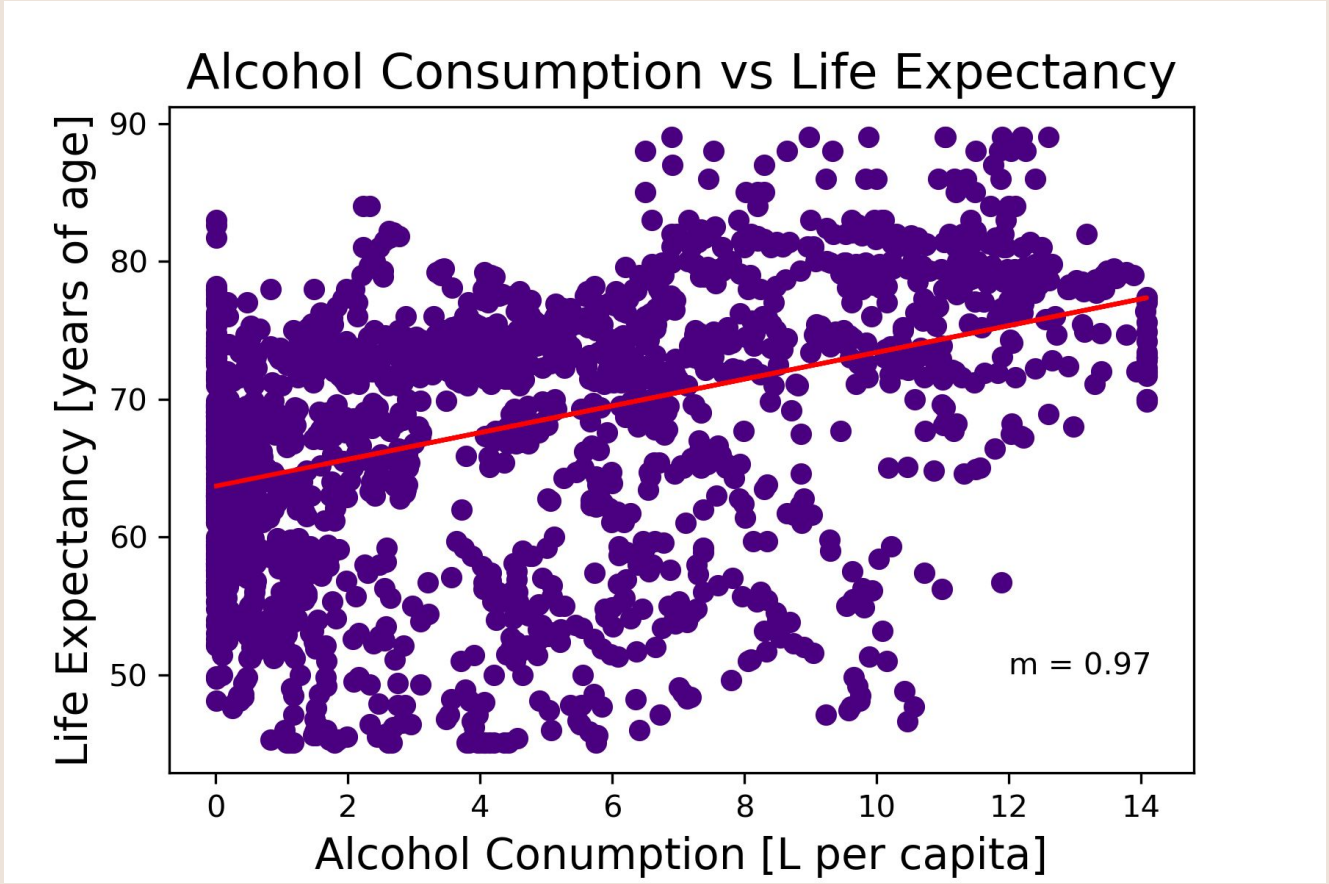
Data Selection

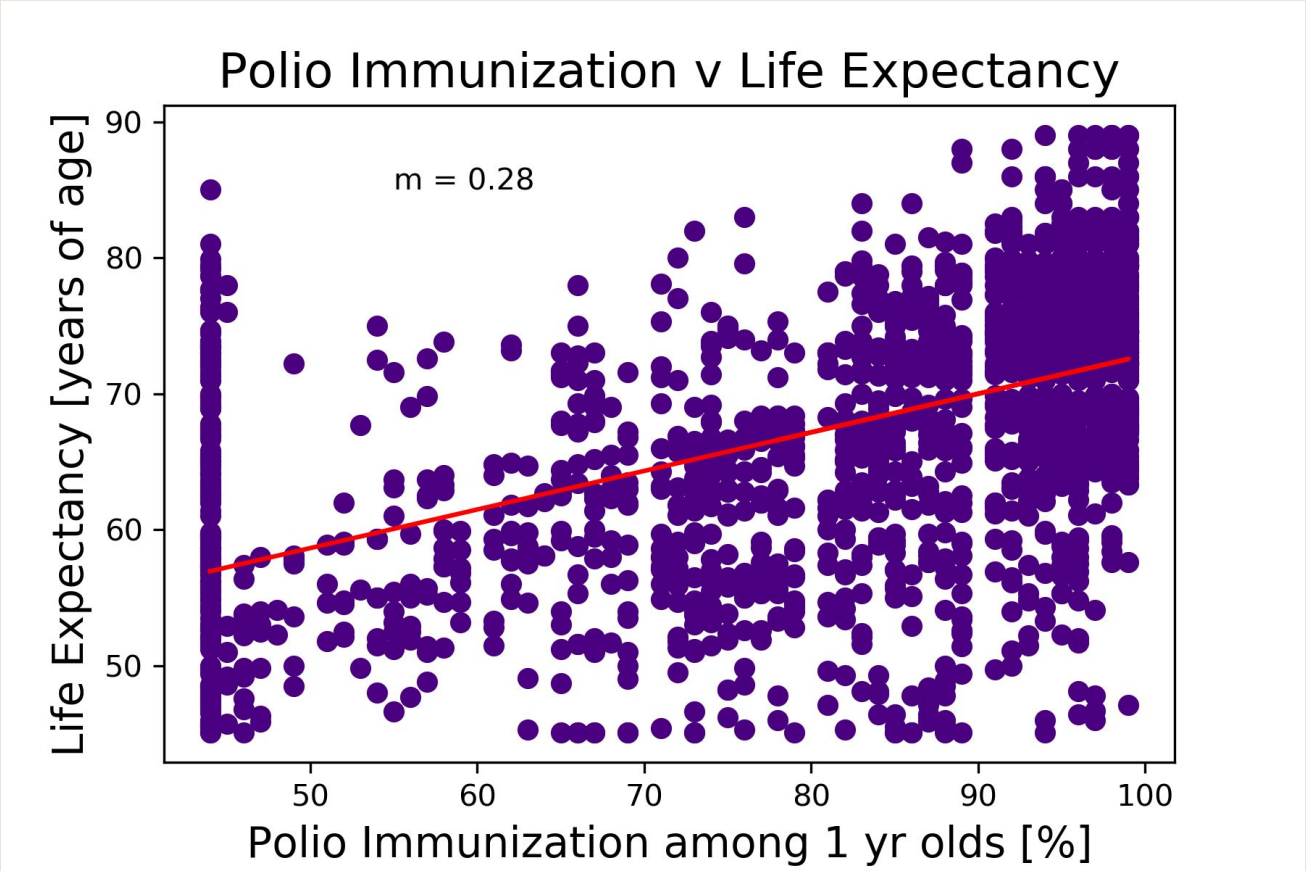
- Following data preparation and analyses of significance:

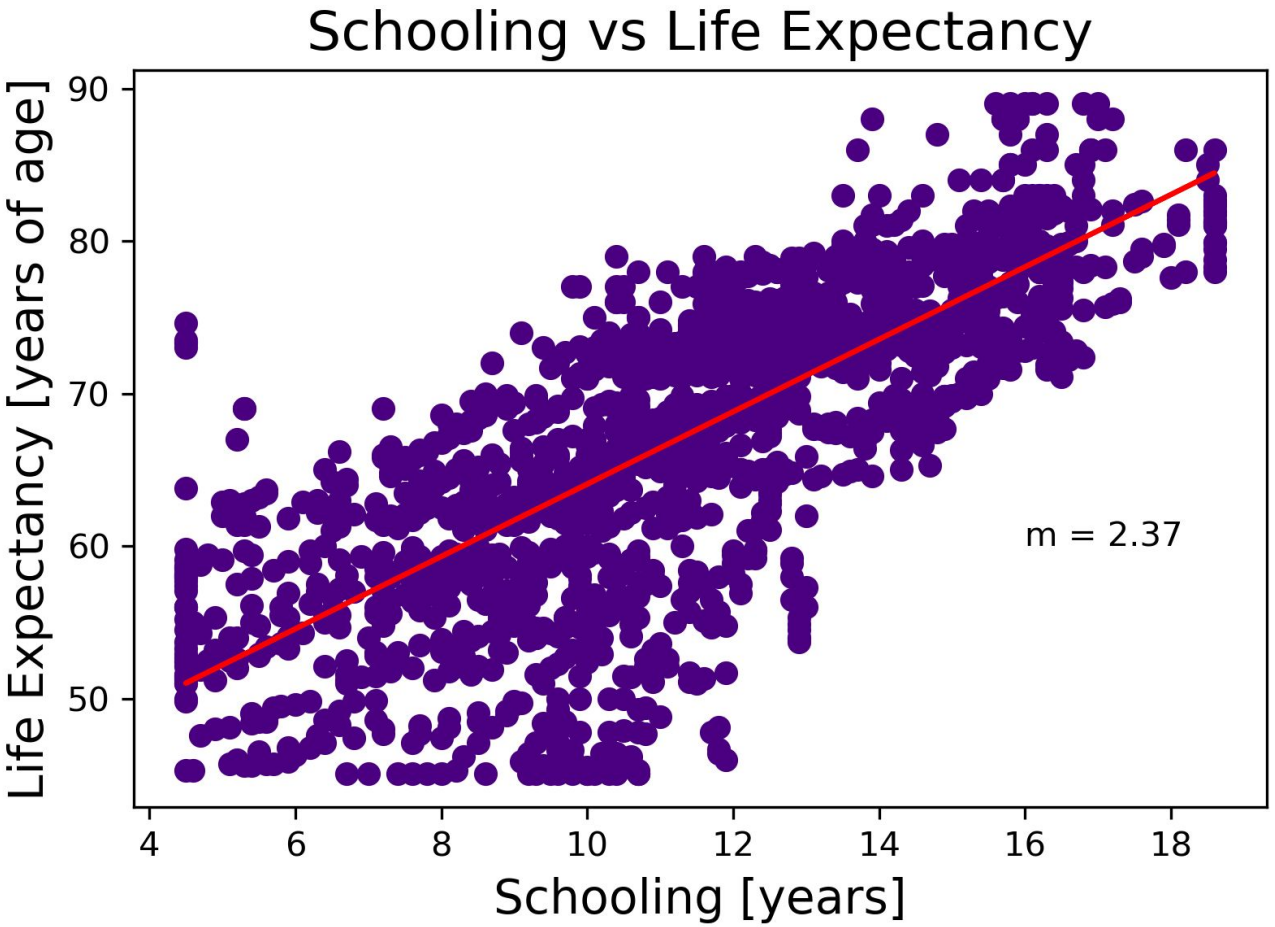
  - Alcohol consumption

  - Polio Immunization

  - Years of schooling


Alcohol Consumption vs Life Expectancy
Life Expectancy [years of age]
90
80
70
60
50
0
2
4
6
8
10
12
14
Alcohol Conumption [L per capita]
m = 0.97


Polio Immunization v Life Expectancy
m = 0.28
Life Expectancy [years of age]
90
80
70
60
50
50
60
70
80
90
100
Polio Immunization among 1 yr olds [%]


Schooling vs Life Expectancy
Life Expectancy [years of age]
90
80
70
60
50
4
6
8
10
12
14
16
18
Schooling [years]
m = 2.37

Insights and recommendations.

- Insight can be served by additional years of data volume.
- Room for increased data acquisition in economic factors for countries with smaller populations
- Focus particularly on social, immunological, education efforts to increase life expectancy.