

# VitaBridge Solutions

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LIFE SPAN TRENDS: ANALYZING LONGEVITY

Fast **Forward** to Your **Best** Life

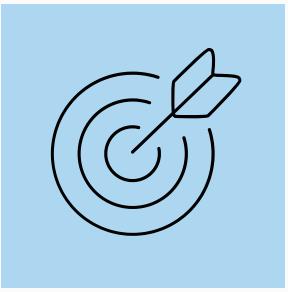


Presenters: Co-Founders

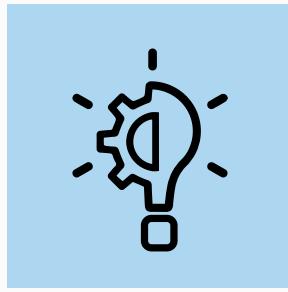
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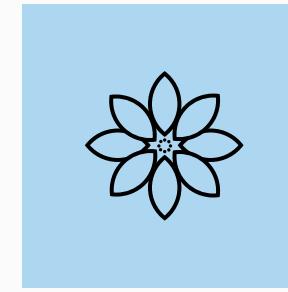
PURPOSE



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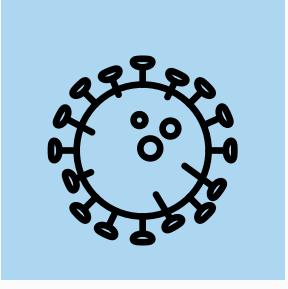
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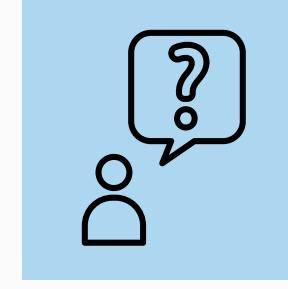
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# MEET THE FOUNDERS



**Vanilla**  
Co-Founder



**Jasleen**  
Co-Founder



**Seethalakshmi**  
Co-Founder



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# PURPOSE



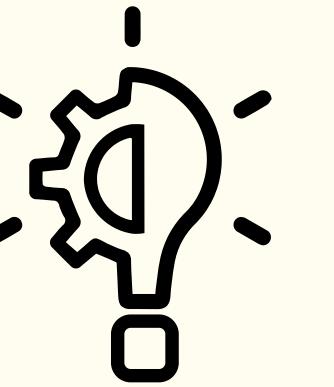
A background photograph of a laboratory setting. In the foreground, a person wearing a white lab coat and green gloves is working at a bench. They are holding a yellow plastic tray with several small containers. On the bench are various pieces of laboratory equipment, including a black rectangular device with a screen and a metal stand holding several test tubes. In the background, there are shelves filled with glassware and other laboratory supplies. The overall atmosphere is one of scientific research and analysis.

**"Uncovering contributors to longer life through economic, health analysis."**



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# SOLUTION



- Identifying contributors to longevity
- Addressing health disparities effectively
- Formulating evidence-based public health policies
- Optimizing healthcare expenditure for improved outcomes
- Supporting informed long-term health decisions
- Partnered with UNICEF
- Emerging markets
- ROI

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# DATASET



- Kaggle - Life Expectancy (WHO)

- <https://www.kaggle.com/datasets/kumarajarshi/life-expectancy-who/data> (Owner: KUMARRAJARSH)
- 2939 rows, 22 columns including the header

- Countries

- 193 Countries
- Tuvalu , Cook Islands, Marshall Islands, Monaco, Palau, Niue, San Marino, Nauru, Saint Kitts and Nevis, Dominica are filtered out as they only contains one year of data, and missing data like life expectancy and other important data.

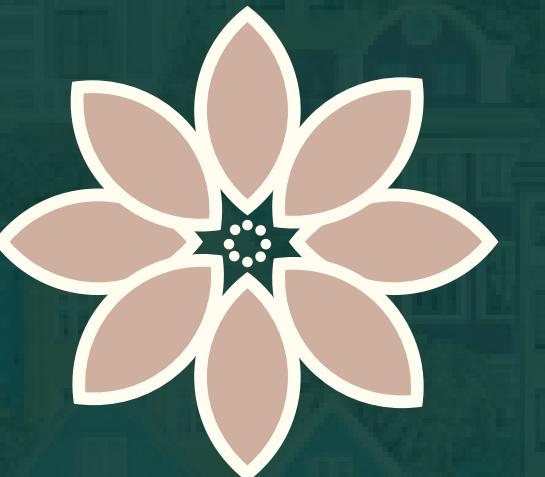
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V
1	Country	Year	Status	Life expectancy	Adult Mortality	infant deaths	Alcohol	percentage expenditure	Hepatitis B	Measles	BMI	under-five deaths	Polio	Total expenditure	Diphtheria	HIV/AIDS	GDP	Population	thinness 1-19 years	thinness 5-9 years	Income composition of	Schooling
2	Cook Islands	2013	Developing					0 0.01	0 98	0 82.8	0 98	3.58	98 0.1					0.1 0.1	0.1 0.1			
3	Dominica	2013	Developing					0 0.01 11.41955507	96 0 58.4	0 96	0 96	5.58	96 0.1 722.7567					2.7 2.6	0.721 12.7			
4	Marshall Islands	2013	Developing					0 0.01 871.8783173	8 0 81.6	0 79	0 79	17.24	79 0.1 3617.752					0.1 0.1	0.1 0.1			
5	Monaco	2013	Developing					0 0.01 0	99 0	0 99	0 99	4.3	99 0.1 136.1832					0.1 0.1	0.1 0.1		9.6	
6	Nauru	2013	Developing					0 0.01 15.60659587	87 0 87.3	0 87	0 87	4.65	87 0.1 1932.122	292				0.1 0.1	0.1 0.1		14.2	
7	Niue	2013	Developing					0 0.01 0	99 0 77.3	0 99	0 99	7.2	99 0.1 3542.136	1819				0.1 0.1	0.1 0.1		13.4	
8	Palau	2013	Developing					0 344.6906308	99 0 83.3	0 99	0 99	9.27	99 0.1 15.1					0.1 0.1	0.1 0.1		15.1	
9	Saint Kitts and Nevis	2013	Developing					0 8.54 0	97 0 5.2	0 96	0 96	6.14	96 0.1 0.2	0.1				3.7 3.6	0.749 0.2			
10	San Marino	2013	Developing					0 0.01 0	69 0	0 69	0 69	6.5	69 0.1 0.1					0.1 0.1	0.1 0.1			
11	Tuvalu	2013	Developing					0 78.28120317	9 0 79.3	0 9	0 16.61	9 0.1 0	0.1					0.2 0.1	0.1 0			

# DATASET LIMITATION

- **Temporal Scope:**
  - Year 2000 to 2015
  - Excluding recent events such as the global COVID-19 pandemic
- **Population Data:**
  - Missing 41 countries, including nations like the USA, UK, New Zealand, Iran, and Korea
  - While merging with additional datasets could address this gap, the dynamic nature of populations due to factors like immigration introduces complexity and potential distortions in analyzing their relationship with life expectancies
- **Alcohol Consumption Metrics:**
  - Limited to the volume of pure alcohol consumed
  - Further research incorporating variables such as the type of alcohol consumed (e.g., red wine, beer, cocktails) or the context of consumption (e.g., social occasions, cultural practices) may yield more nuanced insights into this relationship.

*Dataset columns:*

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
Country	Year	Status (Developed or Developing status)	Life expectancy (Life Expectancy in age)	Adult Mortality Rates of both sexes (probability of dying between 15 and 60 years per 1000 population)	infant deaths (Number of Infant Deaths per 1000 population)	Alcohol (Alcohol, recorded per capita (15+) consumptio n (in litres of pure alcohol))	percentage expenditure (Expenditure on health as a percentage of Gross Domestic Product per capita(%))	Hepatitis B (Hepatitis B (HepB) immunization coverage among 1- year-olds (%))	Measles (Measles - number of reported cases per 1000 population)	BMI (Average Body Mass Index of entire population)	under- five deaths (Number of under-five deaths per 1000 population)	Polio (Polio (Polio3) immunizati on coverage among 1- year-olds (%))	Total expenditure (General government expenditure on health as a percentage of total government expenditure (%))	Diphtheria (Diphtheria tetanus toxoid and pertussis (DTP3) immunizati on coverage among 1- year-olds (%))	HIV/AIDS (Deaths per 1 000 live births HIV/AIDS (0- 4 years))	GDP (Gross Domestic Product per capita (in USD))	Population (Population of the country)	thinness 1-19 years (Prevalence of thinness among children and adolescent s for Age 10 to 19 (%))	thinness 5-9 years (Prevalence of thinness among children for Age 5 to 9(%))	Income composition of resources(Hu man Development Index in terms of income composition of resources (index ranging from 0 to 1))	Schoolin g (Number of years of Schooling(y ears))				
1																									
2	Afghanistan	2015 Developing	65	263	62	0.01	71.27962362	65	1154	19.1	83	6	8.16	65	0.1	584.2592	33736494	17.2	17.3	0.479	10.1				
3	Afghanistan	2014 Developing	59.9	271	64	0.01	73.52358168	62	492	18.6	86	58	8.18	62	0.1	612.6965	327582	17.5	17.5	0.476	10				
4	Afghanistan	2013 Developing	59.9	268	66	0.01	73.21924272	64	430	18.1	89	62	8.13	64	0.1	631.745	31731688	17.7	17.7	0.47	9.9				
5	Afghanistan	2012 Developing	59.5	272	69	0.01	78.1842153	67	2787	17.6	93	67	8.52	67	0.1	669.959	3696958	17.9	18	0.463	9.8				



# LIFE EXPECTANCY

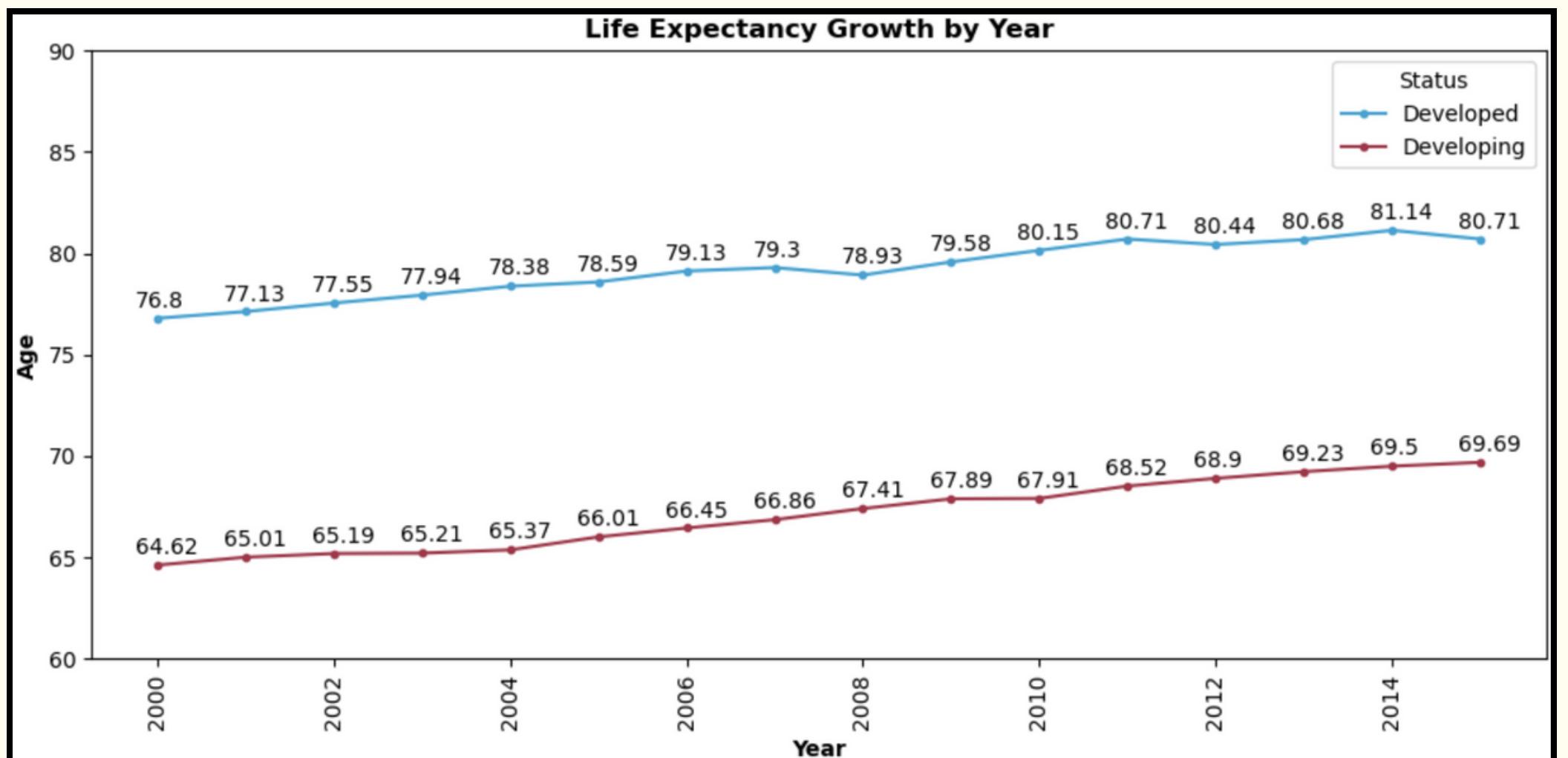
*COVERED BY: VANILLA*



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# LIFE EXPECTANCY

*On average, do people in developed or developing countries live longer?*



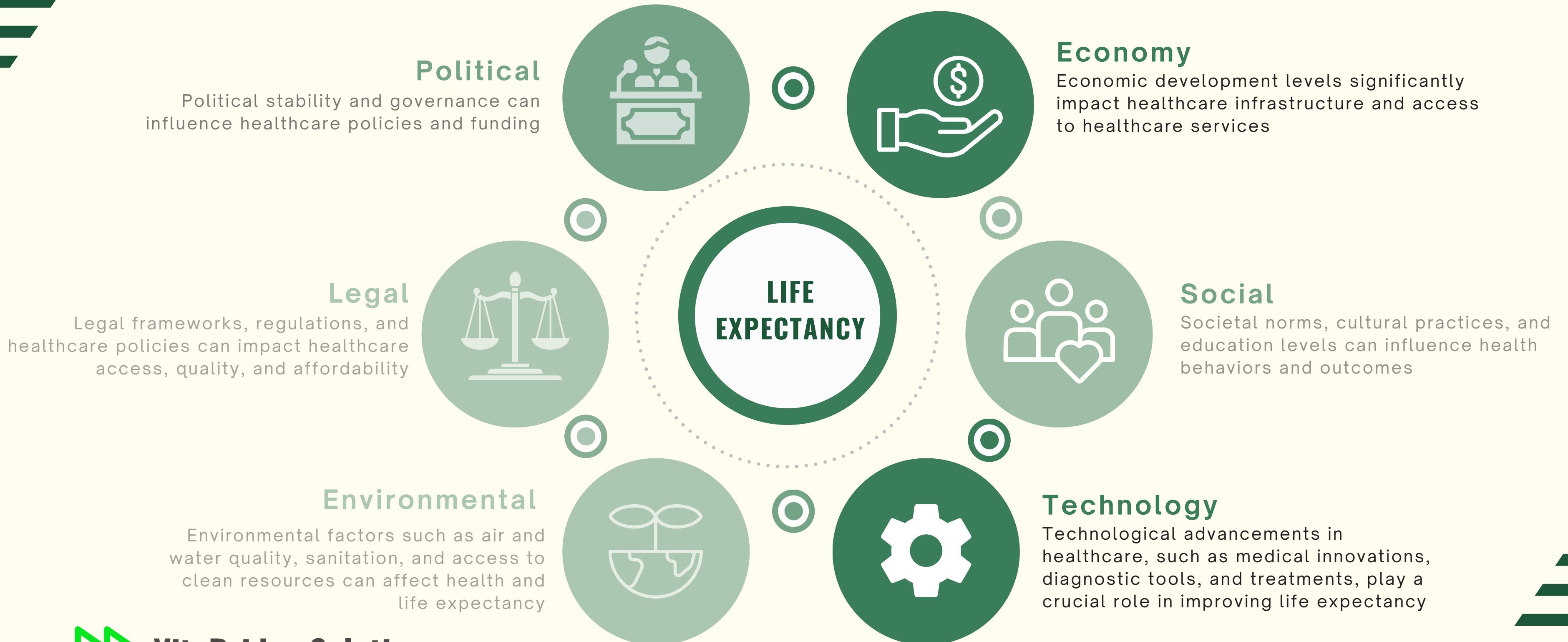
# TOP 5 V.S. BOTTOM 5

*On average, do people in developed or developing countries live longer?*

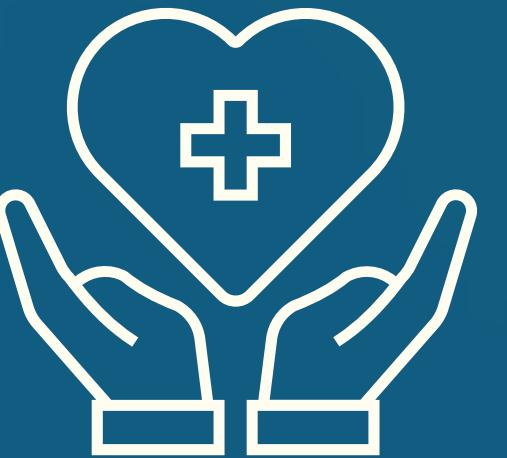
Country	Country_status	Avg. Population	Avg. Life Expectancy	Adult Mortality Rates	Avg. Infant Deaths
Japan	Developed	97,384	82.53750	57.1250	2.8750
Sweden	Developed	5,514,868	82.51875	59.1875	0.0000
Iceland	Developed	186,178	82.44375	49.3750	0.0000
Switzerland	Developed	5,913,242	82.33125	55.7500	0.0000
France	Developing	27,581,733	82.21875	73.1250	2.9375
...	...	...	...	...	...
Malawi	Developing	6,700,263	49.89375	424.4375	37.1250
Angola	Developing	10,147,099	49.01875	328.5625	83.7500
Lesotho	Developing	1,200,528	48.78125	550.0625	4.5000
Central African Republic	Developing	2,016,546	48.51250	333.0625	16.5000
Sierra Leone	Developing	3,336,265	46.11250	357.8125	27.5625

# EXTERNAL ANALYSIS: DEVELOPED V.S. DEVELOPING COUNTRIES

Hidden slide: Prep for Q&A



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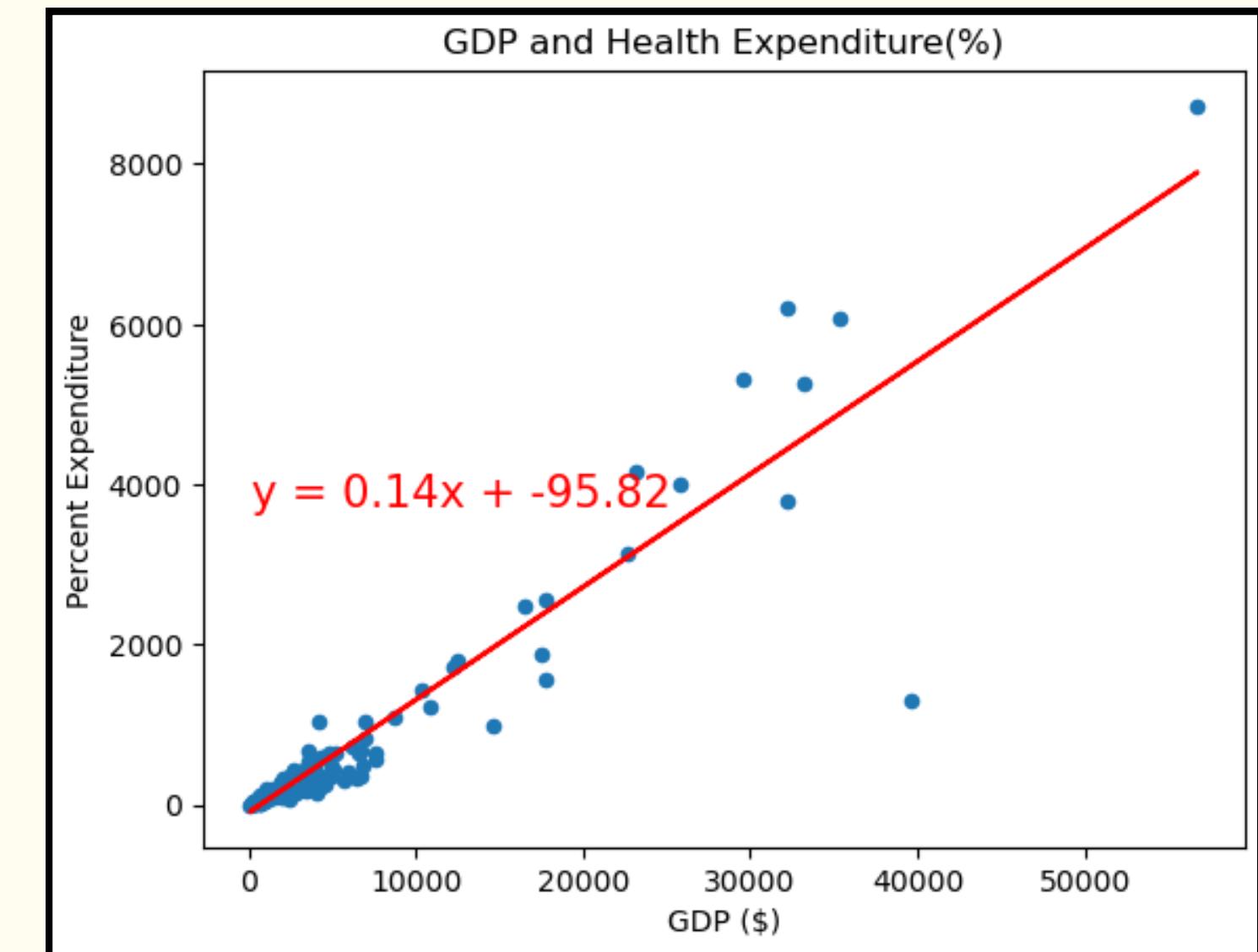
# HEALTH EXPENDITURE

*COVERED BY: SEETHALAKSHIMI*

# GDP & HEALTH EXPENDITURES

*What is the big picture of the relationship between GDP and health expenditures*

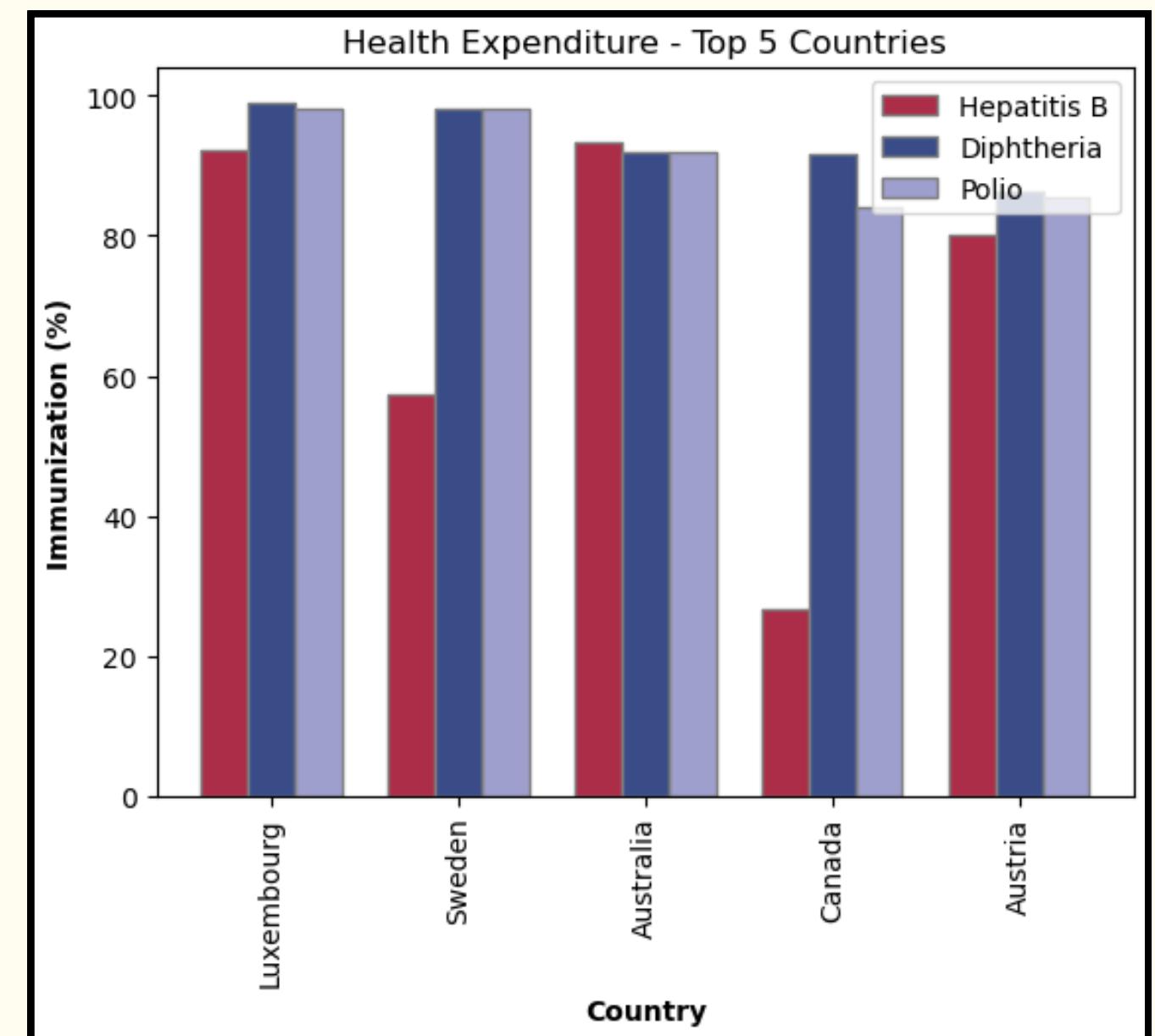
- **Positive Correlation:** increased GDP = increased spending on health
- **Analysis:** Countries which have the funds through their GDP are spending on the health of their citizens



# IMMUNIZATION RATES - TOP 5 COUNTRIES

*What is the big picture of the relationship between GDP and health expenditures*

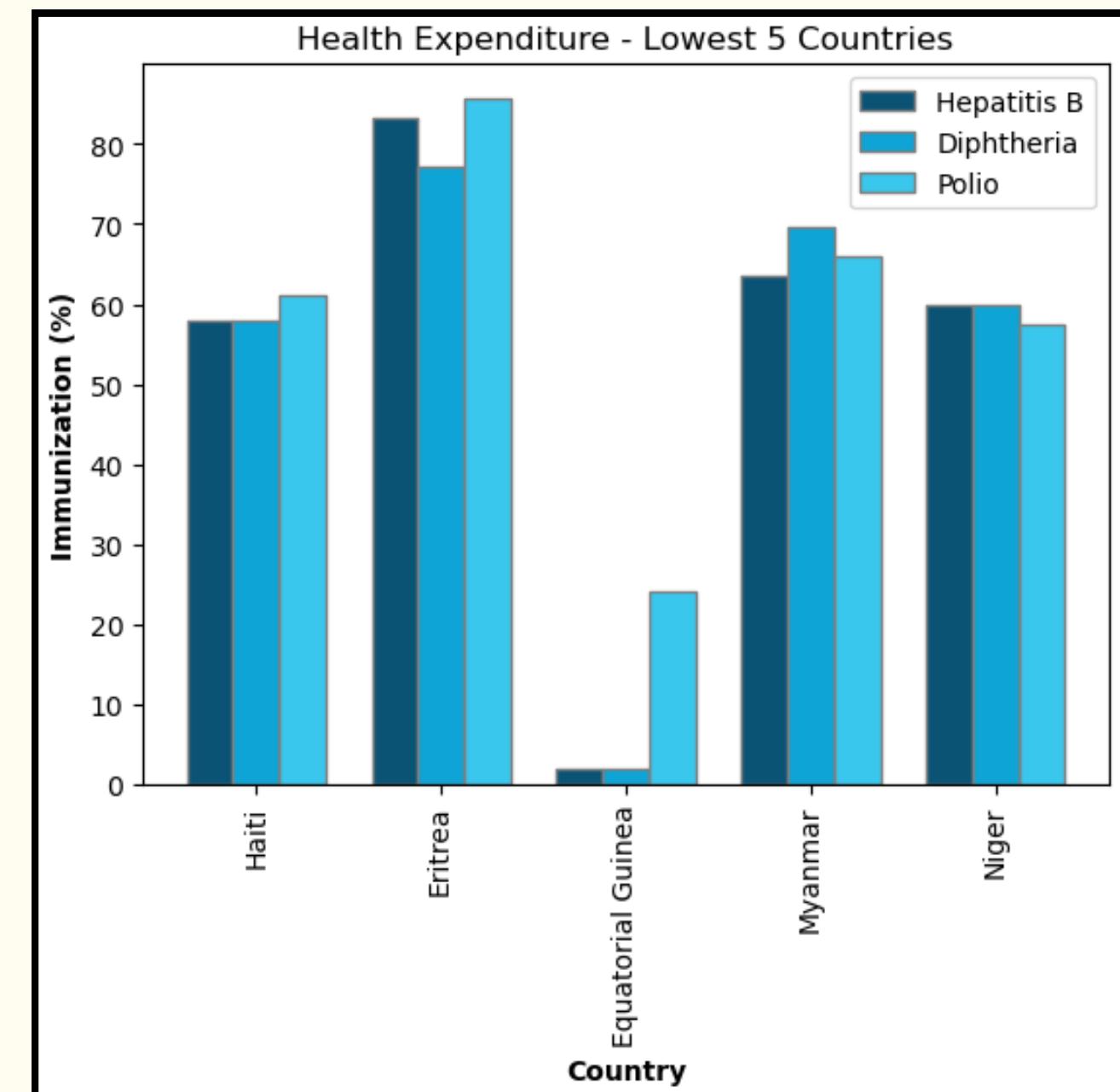
- Consistent immunization rates (overall), consistent
- Standouts: Hepatitis B - Lower rates of immunization
- The top countries are mostly >80% in immunization of these deadly disease



# IMMUNIZATION RATES - BOTTOM 5 COUNTRIES

*What is the big picture of the relationship between GDP and health expenditures*

- Inconsistent immunization rates amongst these countries
- Overall, lower rates of immunization, as compared to top 5 countries
- Analysis: Less GDP = less spending on health - as reflected by the lower rates of immunization of diseases



# LIFE EXPECTANCY AND HEALTH EXPENDITURE

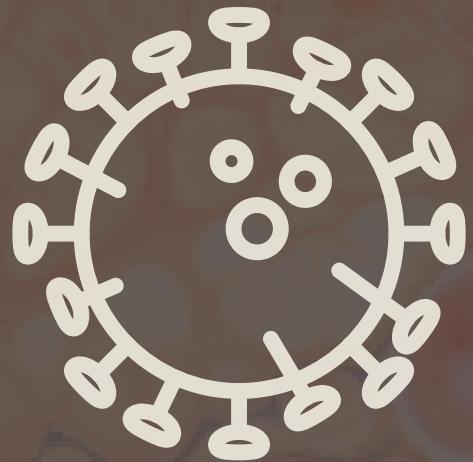
## Top 5 Countries

COUNTRY	LIFE EXPECTANCY
Luxembourg	81
Sweden	82
Australia	82
Canada	82
Austria	81
AVERAGE	82

## Bottom 5 Countries

COUNTRY	LIFE EXPECTANCY
Haiti	63
Eritrea	61
Equatorial Guinea	58
Myanmar	64
Niger	61
AVERAGE	62

20 year difference in the life expectancy between the top and bottom countries



# DISEASE FACTORS

*COVERED BY: JASLEEN*



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# DISEASE FACTORS - HEPATITIS B

*How do diseases contribute to Life Expectancy in various countries?*

Higher coverage could mean *another 10 years* of life expectancy

- Least Covered (L.E, Coverage)

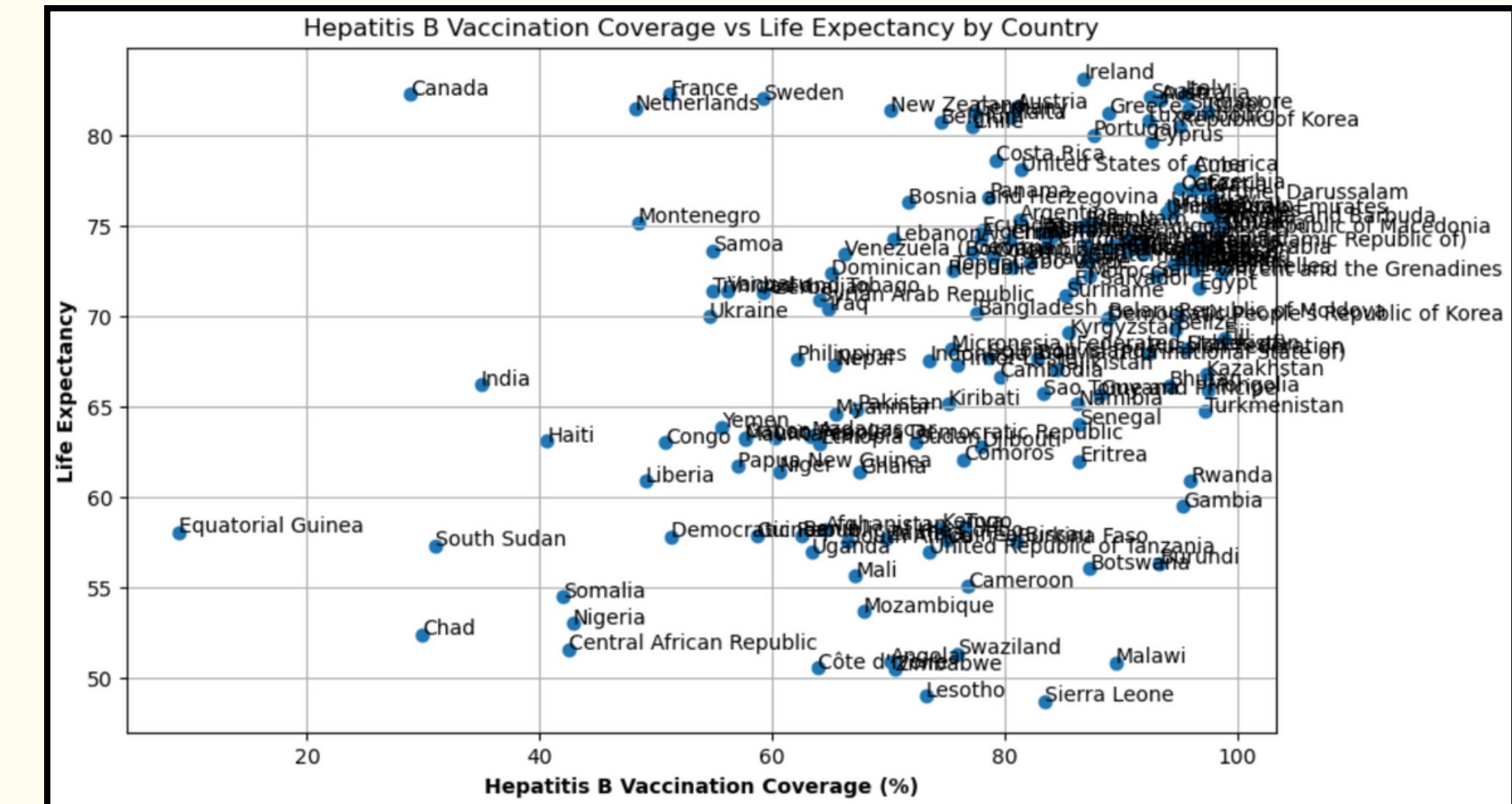
- Equatorial Guinea (58, 9%)
- Canada (82, 29%)
- Chad (52, 30%)
- South Sudan (57, 31%)
- India (66, 35%)

- Low Hep B covered (9% - 35%)

- Life Expectancy of 63 years.

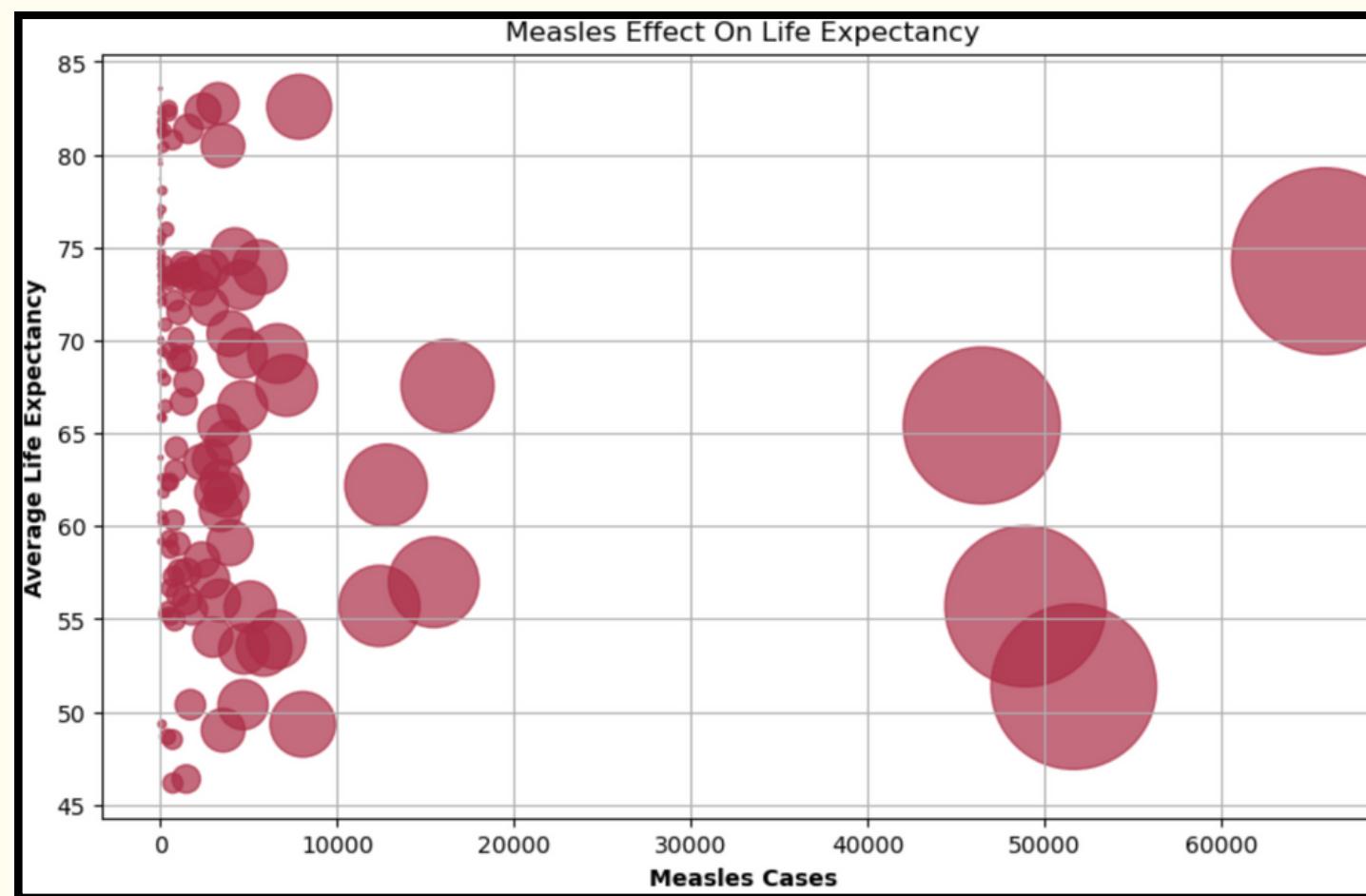
- High Hep B covered (98%)

- Life Expectancy of 73 years.



# DISEASE FACTORS - MEASLES

*How do diseases contribute to Life Expectancy in various countries?*

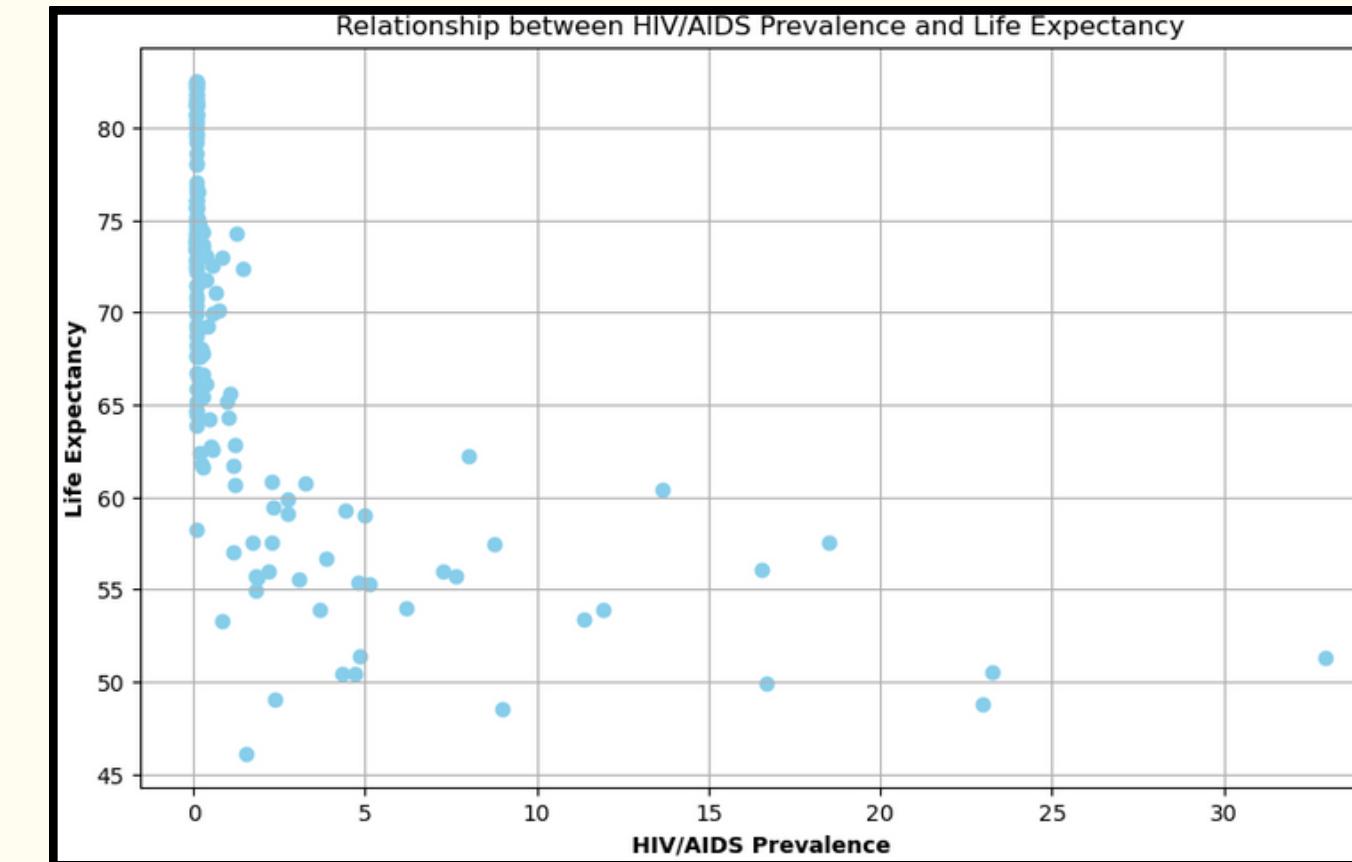
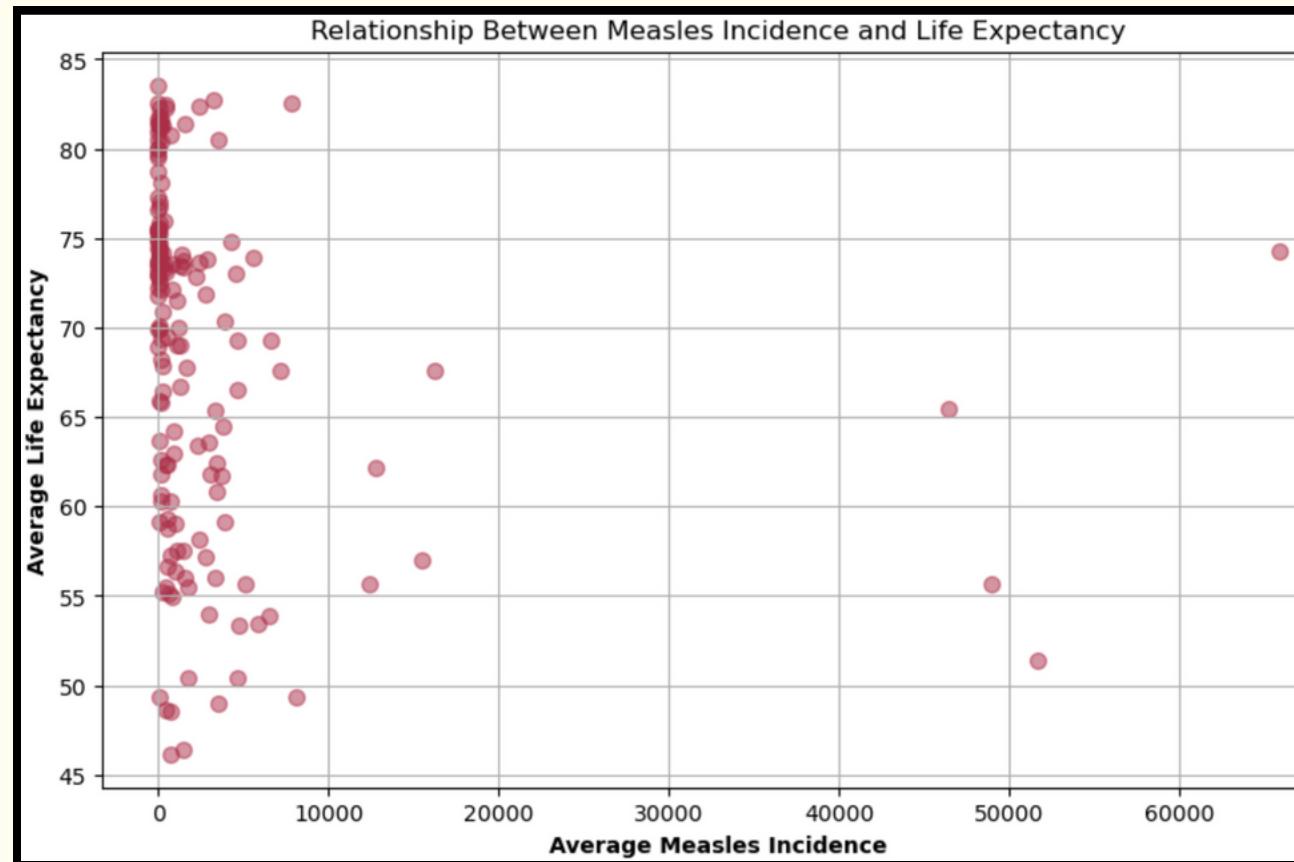


- Bottom 5 countries:
  - 74-year life expectancy
- Top 5 countries:
  - 62-year life expectancy
- Better health plans can add 20 years

# DISEASE FACTORS - MEASLES & HIV

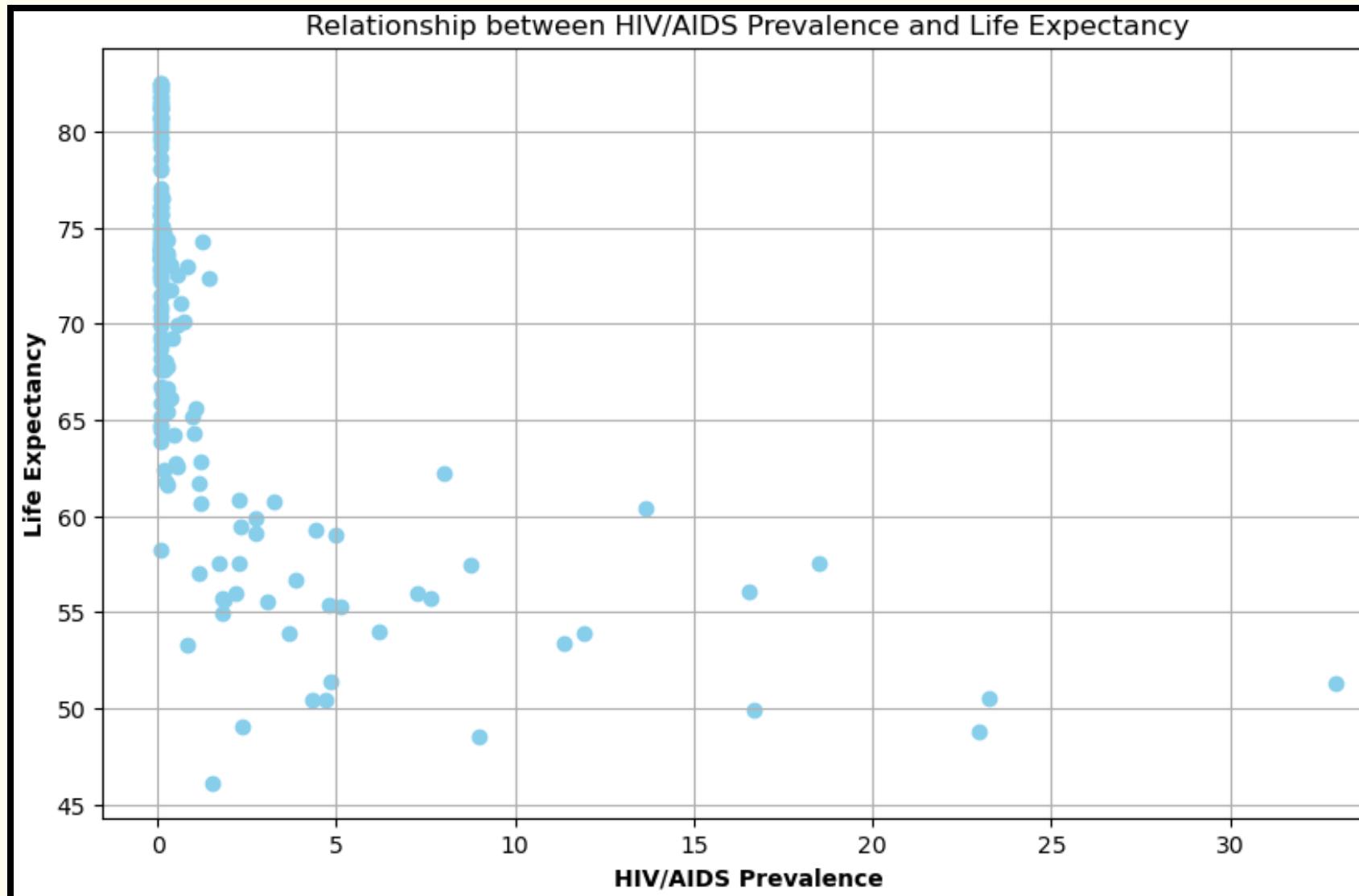
*How do diseases contribute to Life Expectancy in various countries?*

Greater cases of Measles leads to a decline in 12 years of Life Expectancy.



# DISEASE FACTORS - HIV(%)

*How do diseases contribute to Life Expectancy in various countries?*



- The lowest average life expectancy is 68.5
  - 0.1% average HIV deaths.
- The highest average life expectancy is 51
  - 22.8% average HIV deaths.

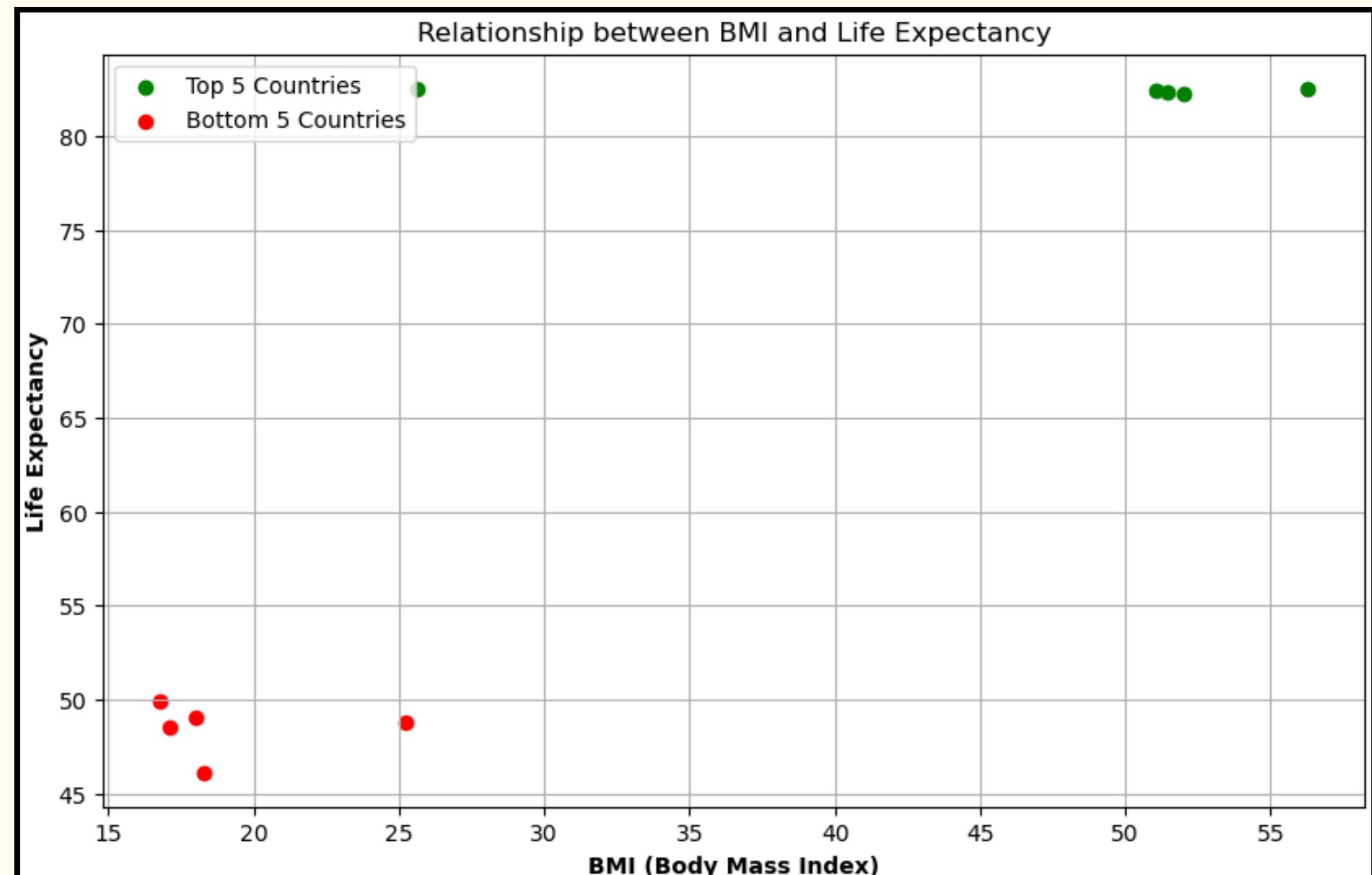
# DISEASE FACTORS - OBESTITY

*How do diseases contribute to Life Expectancy in various countries?*

< 18.5	Underweight
18.5–24.9	Normal weight
25.0–29.9	Overweight
30.0–34.9	class I Obesity
35.0–39.9	class II Obesity
≥ 40.0	class III Obesity

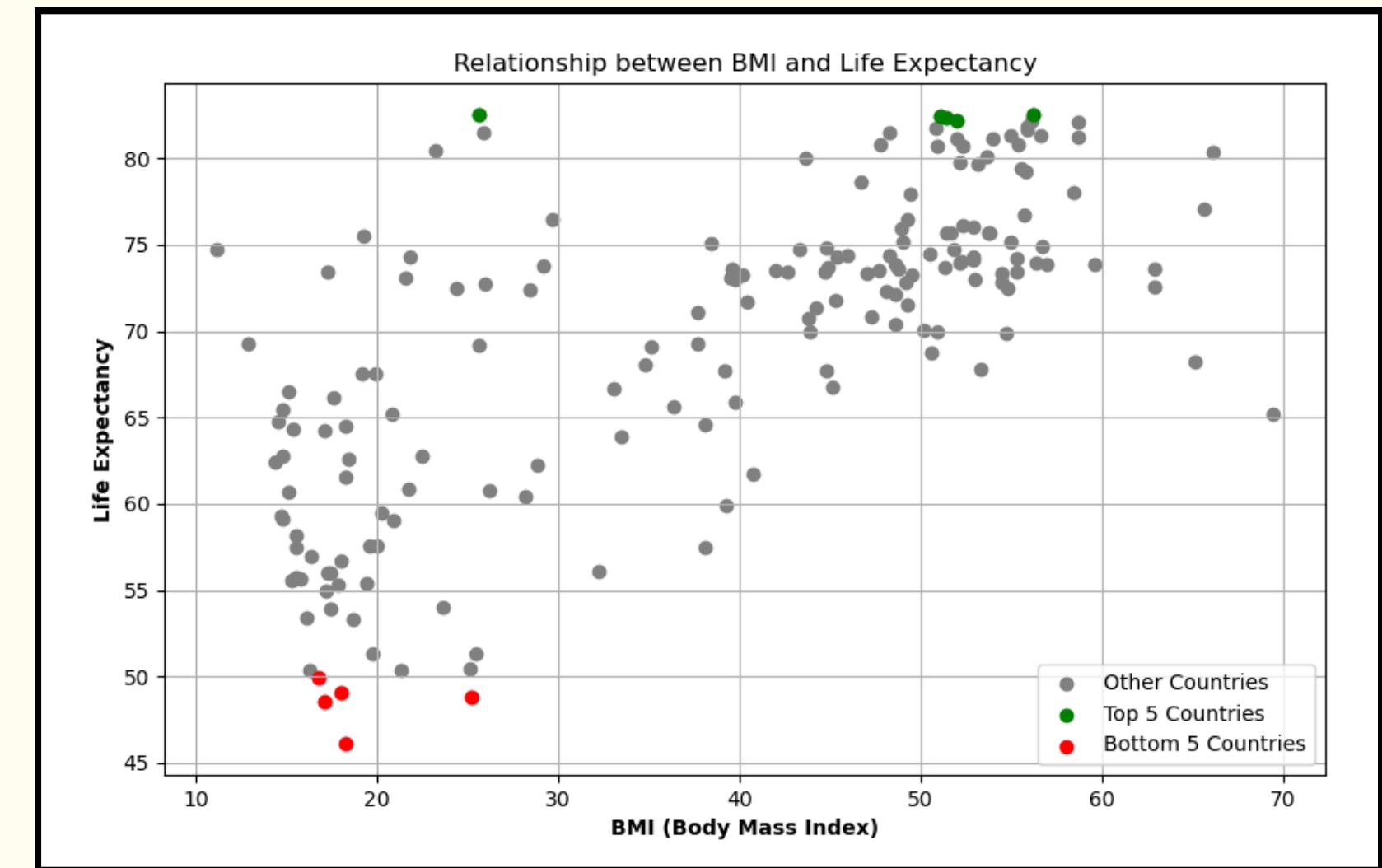
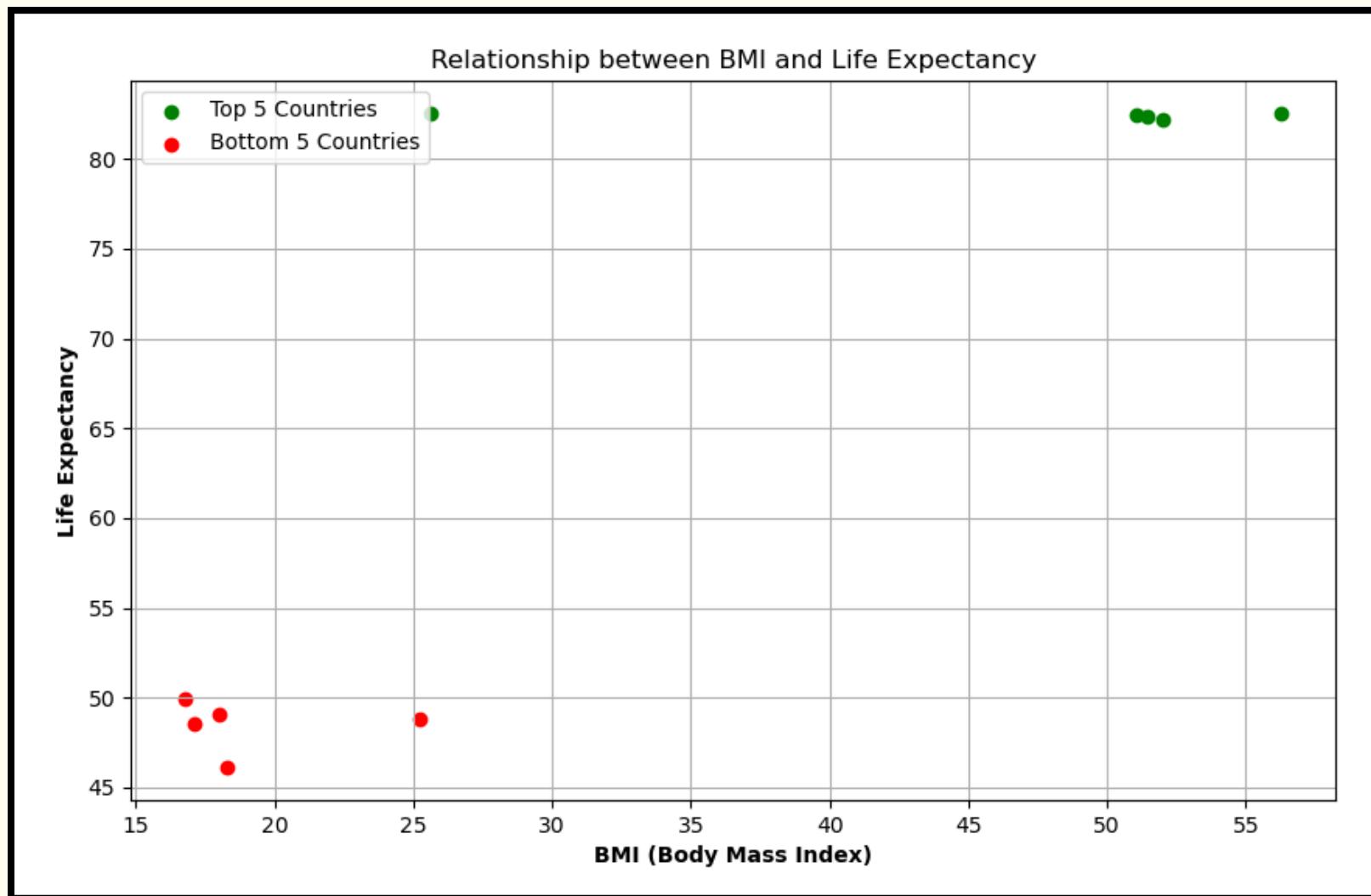
- Low BMI rates were 19.08625.
  - Life Expectancy Average = 48 years old.
- High BMI rates were 47.26999.
  - Life Expectancy Average = 82 years old.

- Age 82 = Class III Obesity
- Age 48 = Underweight - Normal



# DISEASE FACTORS - OBESTITY

*How do diseases contribute to Life Expectancy in various countries?*



# STRATEGY



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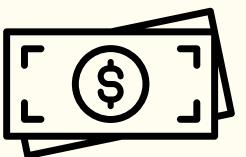
- **Pharmaceuticals, Suppliers, & Governments Contracts**
  - *deliver HIV coverage in lacking countries*
  - *working with suppliers and governments to pursue research and production of meds for relief*
- **Partners**
  - *Health Departments*
    - *to understand how to limit and support countries with high Measles cases*
  - *Pharmaceuticals*
  - *Governments*
- **Partnered Depth Analysis**
  - *review world data on Measles affect on all 10 countries.*
  - *understanding the factors that create obesity in countries with better Life Expectancy*
  - *population census testing for further reviews and data*
  - *learn more about countries facing Measles and HIV, similar symptoms, and treatments*
- **Hiring More Experts**

# PROJECTION



- **Projected Revenue Sources:**
  - Expected revenue from pharmaceutical sales: **\$10 million**
  - Anticipated income from government contracts: **\$5 million**
- **Operating Expenses:**
  - Revised estimated operating expenses including salaries, R&D, marketing, and distribution: **\$5 million**
- **Mitigation Strategy for Operating Expenses:**
  - Implementing cost-saving measures such as renegotiating supplier contracts, optimizing resource allocation, and streamlining operational processes to reduce overhead costs while maintaining efficiency.
- **Partnership and Contract Expenses:**
  - Forecasted costs related to collaborative research and contract fulfillment:
    - **\$3 million**
- **Investment Areas:**
  - Planned investment in research and development, hiring experts, and infrastructure: **\$4 million**

# FUNDING - \$2M



## 1. Research Personnel: \$600,000

- Hiring researchers, analysts, and experts in economics, public health, and data analysis.
- Salaries, benefits, and consultant fees.

## 2. Data Acquisition and Management: \$300,000

- Purchasing datasets related to health outcomes, economic indicators, and demographic information.
- Developing systems for data collection, storage, and analysis.

## 3. Equipment and Technology: \$200,000

- Investing in computers, software licenses, and analytical tools for data processing and modeling.
- Purchasing specialized equipment for data visualization and statistical analysis.

## 4. Travel and Fieldwork: \$250,000

- Funding travel expenses for researchers to attend conferences, collaborate with other institutions, or conduct fieldwork.
- Covering costs associated with data collection, surveys, or interviews in various regions.

## 5. Publication and Dissemination: \$200,000

- Covering publication fees for peer-reviewed journals and open-access platforms.
- Developing outreach materials, reports, and presentations for sharing findings with stakeholders and the public.

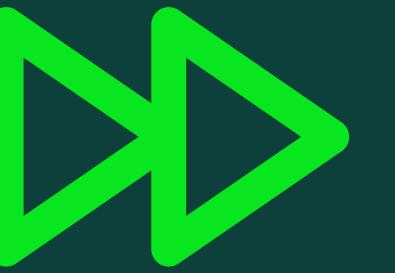
## 6. Miscellaneous Expenses: \$150,000

- Contingency fund for unexpected costs or adjustments in project scope.
- Administrative expenses, overhead costs, and other miscellaneous items.



# Q&A

*(if you've been paying attention we might share the Kahoot)*



**Fast Forward to Your Best Life**

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