

Gdp vs life expectancy of countries



**ASSIGN
BUSTER**

We have chosen to discuss the relationship between GDP per capita vs. life expectancy at birth. At first glance, it would appear that the GDP and wealth of a country should directly impact the life expectancy of its citizens.

However, when looking at the graph we see that while there is definitely a correlation between GDP and life expectancy, their relationship isn't linear. This graph shows that the countries which have a GDP of less than \$10000 USD per capita have a life expectancy ranging from 45-80 years. In addition, the countries with a GDP of \$15000- \$40000 per capita have a relatively steady life expectancy of about 80 years with a slight decrease as the GDP approaches \$40000. This gives the graph a backwards L shape which is referred to as a Preston Curve¹.

In the poorer half of the world, the life expectancy ranges drastically between 45-80 years. The countries with the lowest life expectancy are almost always affected by their GDP. When a country has a low GDP, the citizens don't have enough money for essentials to survive. They are forced to buy the cheapest foods which don't have the proper amounts of nutrients required to live long, healthy lives. Likewise, these governments usually do not have enough money to support and aid these citizens. Additionally, countries with low GDP tend to have poor health care systems to treat the terminally ill. This issue is exacerbated in these places because the poorer countries are more likely to be stricken with serious, potentially life threatening diseases like HIV. On the other hand, many countries with low GDP's have a very high life expectancy. One possible explanation for this phenomenon is that these countries are heavily involved in farming and agriculture. Thus, they have easy, cheap access to healthy food and other essentials to survive

while not contributing much to the GDP². Another possible conjecture is that these countries have many citizens that are involved in illegal smuggling. A prime example is Mexico which has a GDP of a mere \$6228 USD per capita coupled with a respectable life expectancy of 76 years. These people can become very wealthy and live elegant, plentiful lives while contributing \$0 to the GDP as much of their incomes is not reported because they do everything under the table. A third explanation why some countries have a high life expectancy despite a low GDP is because its government strongly prioritizes needs over wants. Cuba is a good example of this. They have a very strong social support network that provides health coverage, government pensions and economic support to poor families³. While poor countries are definitely impacted by low GDP, they have many ways to live long lives without too much money.

In the wealthier half of the world, life expectancy has remained steady at 80 years with a minor drop at the highest GDP levels. There are many ideas to explain the steadiness in this part of the world. Firstly, people in the top quarter of the world usually don't spend more on essentials than the second quarter of people. They tend to spend more on wants such as fancy cars, vacations, electronics, etc. Hence, the second quarter isn't lacking in any essentials that the first quarter has that would affect their life expectancy. Additionally, almost all governments in the top half of the world have excellent social and health services. Thus, even the poor in these countries receive appropriate and suitable care. However, as we approach the richest countries, the graph takes a slight dip down. Some statisticians believe that there is nothing concrete to suggest any definitive reasons for this.

However, some try to explain this phenomenon. Firstly, people with a high income are more susceptible to traffic fatalities as they are usually on the road more often. Similarly, they have the means to participate in risky, thrill seeking and expensive activities like sky diving. These people also tend to drink more which can lead to all sorts of illnesses. Another explanation given is pollution. The richest countries are the ones with the resources to produce high amounts of pollution. It has been proven that young children are especially susceptible to this. Economists Kenneth Chay and Michael Greenstone think that the 1981-1982 oil shock recession may have saved as many as 2, 500 infant lives in the United States through the slight reductions in air pollution caused by the reduced economic activity⁴. To summarize, although there is definitely a connection between high GDP and long lives, the relationship isn't perfect.

As with any study, it is very difficult to distinguish between correlation and causation. Does A cause B? Or does B cause A? Is there a confounding or mediating factor? The relationship between GDP and life expectancy is no exception. While we can't definitively prove that there is a causal effect, there is a strong correlation. As a result, it is incumbent on the governments in countries with low life expectancy to take steps to increase the life expectancy of their citizens. Some examples include but are not limited to educational programs and food vouchers. It is our fervent hope that one day the life expectancy across the globe will be similar regardless of financial status.

1. https://en.wikipedia.org/wiki/Preston_curve

2. <http://www.statisticalconsultants.co.nz/blog/life-expectancy-at-birth-versus-gdp-per-capita-ppp.html>
3. <http://financialnerd.com/relationship-life-span-gdp-per-capita/>
4. <https://www.weforum.org/agenda/2016/10/the-relationship-between-gdp-and-life-expectancy-isnt-as-simple-as-you-might-think>