Grounded in Truth: Viewing the World with *Factfulness*

By Hannah Burd

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<u>Introduction: What Makes the World a Better Place?</u>

If you could travel to and live anywhere in time, past to present, where would you choose? Would you walk beside dinosaurs? Outrun Olympians in ancient Greece? Dance through the roaring 20s? As I consider the entirety of known history, I can say without any doubt that there is no time I would rather live in than now. I'm fond of hot showers and air conditioning, I find comfort in knowing that I probably will not die from a stomach bug, and I am free to connect with the world and pursue a technical education.

There is no limit to the number of indicators that we could define to study the state of the world. Values and needs vary across countries and cultures. However, for the purpose of statistical examination, we will split different levels of progress into three categories: survival, growth, and prosperity. These should not be associated with specific countries or regions; rather, each country can present changing data in all three categories. Below I have defined different indicators that would fall under each category. This is by no means exhaustive, but should provide insight into these three categories.

Survival	Growth	Prosperity
Child Mortality Rate	Income Level	Peace
Life Expectancy	Nutrition	Happiness Score (WHR)
Population Vaccinated	Years of Education	Technological Access
Babies Per Woman	Literacy	Social Equality

Survival indicators describe life and death in a population. While life expectancy is an easy statistic to read, it is highly influenced by both ends of the data. That is, countries with low life expectancies, for example, a life expectancy of 30, do not have average citizens dying at age 30. Instead, a sizable proportion of the population is living a full life, while a similarly sizable amount may be passing as babies or children. Therefore, the child mortality rate may serve as a more powerful indicator of survival outcomes. Often, the more children that survive, the fewer babies a woman needs to have, fewer familial resources are allocated to childcare and treatment, and the more time a mother and the rest of the family have to devote to school or work.

Education and economic status are indicators of growth as they lead to opportunity. Money and knowledge are powerful resources that not only open doors for increased comfort and freedoms for families, but also contribute to an increase in global presence through market interactions and literacy. Another significant indicator is nutrition. In addition to nutrition being required for physical growth, those that have proper and regular access to sustenance can devote more time and energy to other growth opportunities and live with a better quality of life.

Prosperity is the final category. It is commonly understood that survival and growth factors are the foundations for progress, but prosperity is often underestimated. Many have the tendency to divide the world into the wealthy and the poor, with the assumption that wealthy countries have mastered survival and growth and focus on prosperity, while poor countries are fighting to survive and fighting to grow, so much so that they cannot be making progress towards prosperity. This idea of a gap between rich and poor fuels a worldview that is based on assumptions, not statistical facts. For the rest of this paper, we will explore how to reframe one's outlook to one that is based on data and why this shows us that the world is getting better.

Factfulness

Many scholars and philanthropists, such as Stephen Pinker and Bill Gates, have traveled the world promoting the idea that the Earth is actively becoming a better place. Citing statistics showing higher life expectancies, increased global communication, and historic medical advancements (Pinker, Gates). However, one of the most vocal people on this topic was Swedish physician Hans Rosling. Shortly after his death in 2017, he and his son and daughter-in-law published *Factfulness: Ten Reasons We're Wrong About the World – and Why Things Are Better Than You Think*. This book uses anecdotes and a deep look into statistics to force the reader to reflect on their biases and misconceptions on the state of the world. He rejects the idea of developing vs. developed nations and asks us to reimagine how we view the world—a fast-changing place where there is no Us vs. Them, no West vs. Rest, and no gaps that truly separate the wealthiest of modern-day countries and the majority of the world. He dives into our biases—negativity, fear, generalization, urgency, blame, gap, size and more —and helps the reader understand how these instincts can get in the way of the truth.

The basis of *Factfulness* is a series of thirteen questions that Rosling provides in the introduction in the form of a quiz (Appendix A). These questions are on global health, survival

and growth statistics, population dynamics, accessibility, and other trends based on publicly available data. Generally, the correct answer (out of three options) was a more positive result than the most popular choice. After quizzing more than 12,000 people in 14 countries, only 10%[1] of respondents received a better score than would a chimpanzee (random guessing). This indicates that there is a common, as Rosling would say, overdramatic, negative outlook of the world.

The first step in closing the (non-existent) gap is to understand what life truly looks like around the world today. Rosling does an exceptional job at breaking this down into four comprehensible levels based on income (Appendix B). Five out of seven billion people are split between levels two and three, the middle income countries where an individual earns between $2 and $32 per day. What makes Rosling's breakdown so powerful is that he paints a picture of life at each level. For those of us in level four (high income) countries, it is difficult to imagine the differences between extreme poverty across the globe (level one) and middle income nations (levels 2 and 3) since our standard of living is so high in comparison. However, for those outside level four moving between income levels results in significant changes in quality of life. It's the difference between traveling by foot and traveling by bike, sleeping on a floor and sleeping on a mattress, illness resulting in death or illness resulting in recovery. *Factfulness* encourages us to ground ourselves in truth, and not to be misled by our biases.

Analysis Through the Lens of *Factfulness*

One of the biases that Rosling explores in *Factfulness* is the Gap Instinct. The Gap Instinct is our tendency to assume that there is a gap between Us and Them. They are on one end of the spectrum and We are on the other. In modern discourse, the gap instinct is often what motivates the distinction between Developed and Developing countries. However, as *Factfulness* asks us to do, we can take a closer look at the data and determine whether a gap truly exists.

For example, let us look at a survival indicator and a growth indicator. As previously mentioned, for many, it would be natural to assume that factors in these categories result in the biggest spread between the wealthy and poor countries. In this analysis, I considered the data for 196 countries from 1999, my birth year, to 2019 (pre-pandemic), looking at the relationship

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[1] This 10% statistic is based on the first 12 questions of the quiz only. The final question, on climate change outlook and expected global temperature increase, was answered correctly by 75%-95% of respondents, depending on the country.

between income (GDP/capita, PPP$ Inflation-Adjusted) and child mortality per 1000 children aged 0-5 (by country, not considering population size).

Before we discuss the plots on the next page, I must note that the numbers presented in these graphs are a phenomenal improvement within the context of history. Just two-hundred years ago, the child mortality rate globally was near 50%. Now, that number is closer to 3%.

In examining the data while minding the gap instinct, one should first note that no gap is present. There is no white space separating the wealthiest and the poorest. As is true with most global progress indicators, there is much overlap. Second, we observe a clear downward trend in the vertical spread of the data. There was never a gap, but those countries that held higher child mortality rates are converging to those with lower child mortality rates. This can be observed looking at 1999 data, 2019 data, and also 2039 predicted data (Appendix C). Finally, when considering the gap instinct, it is also important to consider the type of comparison. Averages are helpful, but they are influenced by extremes. That is why here, it is better to look at the data than define it by a single number. On the topic of extremes, it is also important to remember that most data, and most people, fall in the middle of a spread. For this reason, we can also look at the 2019 Income vs Child Mortality data with extremes removed[2]. Unsurprisingly, this results in a far tighter spread of child mortality rates, demonstrating clearly a lack of gap.
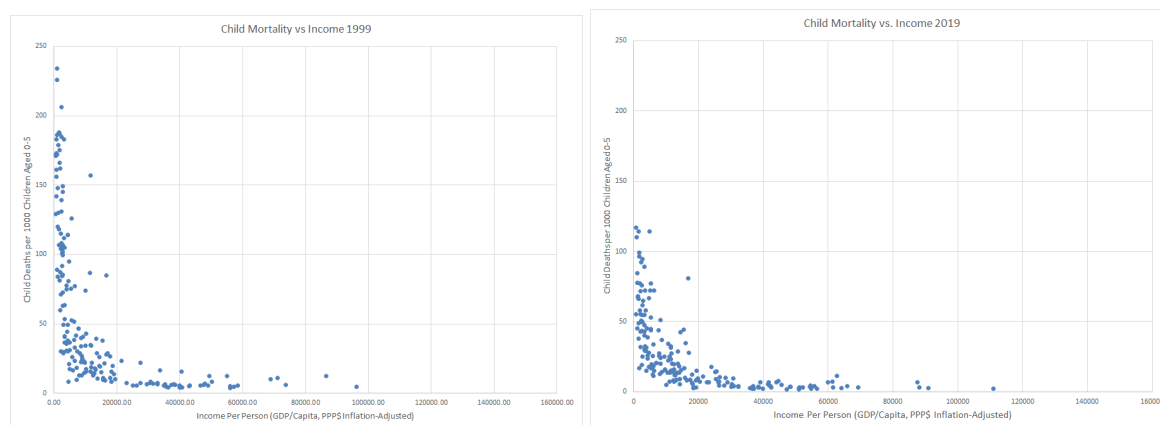
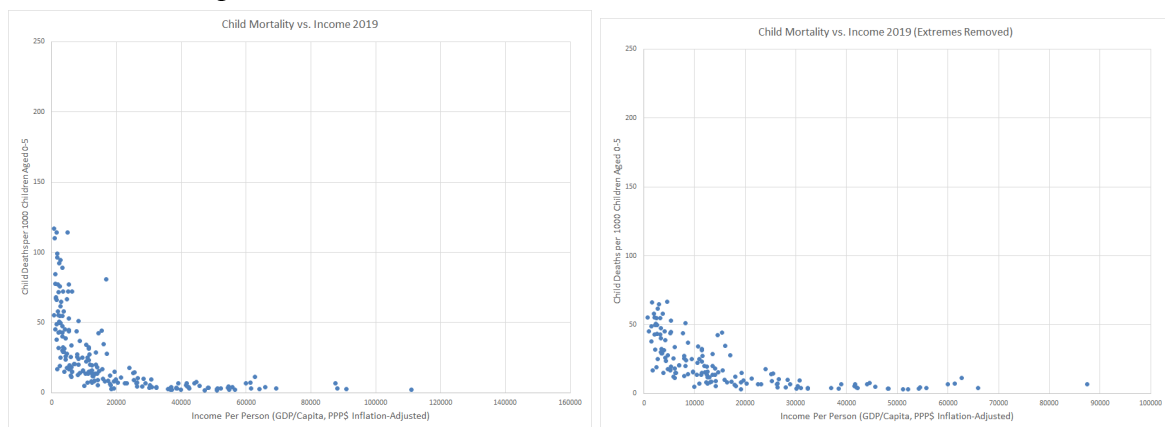GDP / Capita vs Child Mortality, 1999 (left) and 2019 (right).
Data Source: Gapminder based on World Bank.

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[2] For this analysis, I removed the highest 20 and lowest 20 child mortality rates.
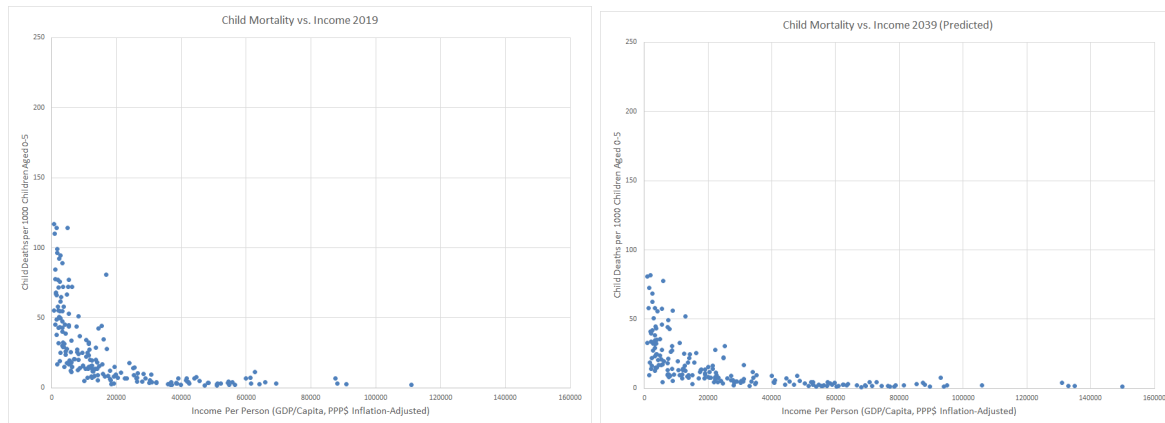
GDP / Capita vs Child Mortality, 2019 (left) and 2039 (predicted, right).
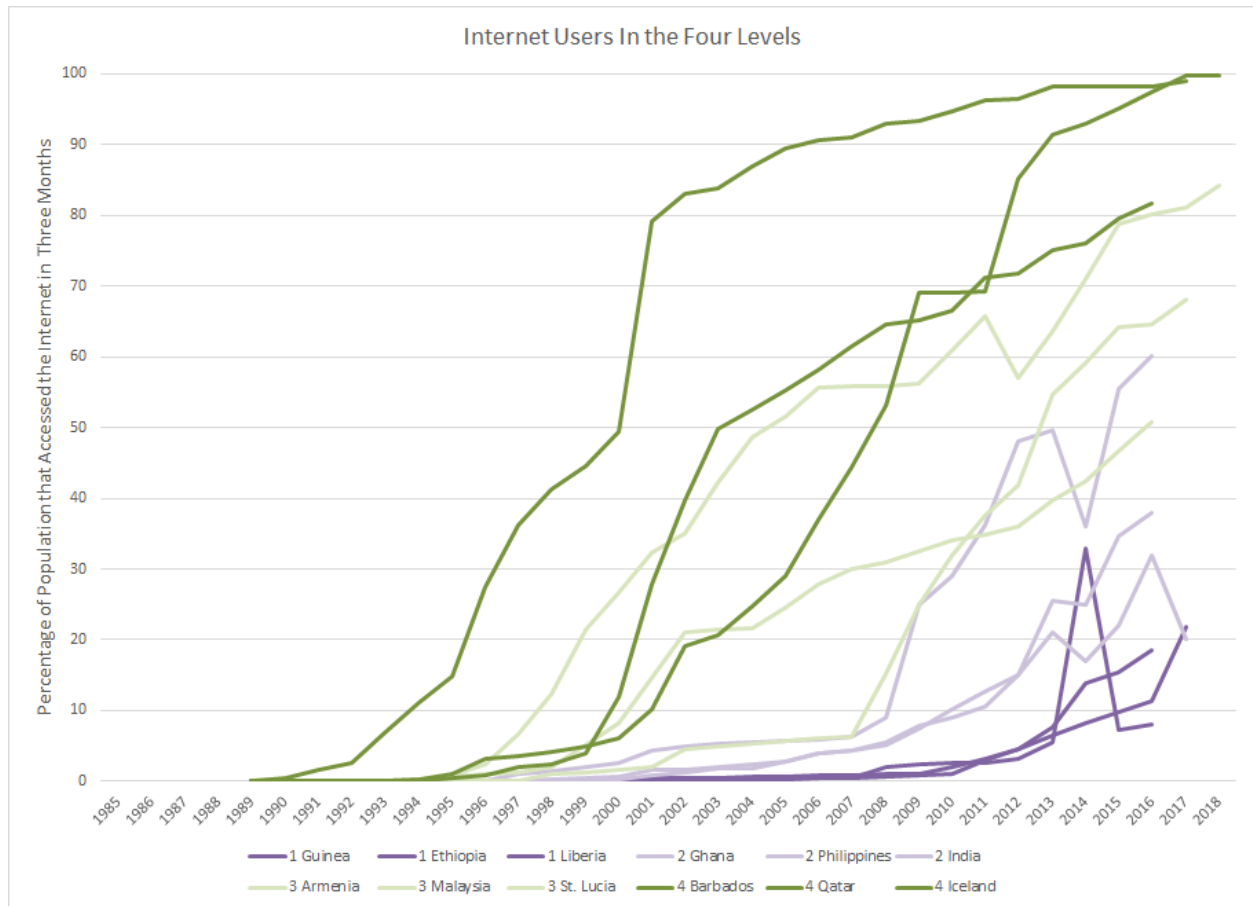*Data Source: Gapminder based on World Bank.*

GDP GDP / Capita vs Child Mortality, 2019 (left) and 2019 not including 20 highest and lowest child mortality rates (right).
Data Source: Gapminder based on World Bank.

Rosling's income level classification closely mirrors the classifications used by The World Bank to divide countries into four income levels. By World Bank definitions, low income countries have a gross national income (GNI) per capita of $2.86 or less per day, lower-middle income countries earn $11.22 or less per day, and higher-middle income countries earn $34.78 or less per day ("The World by Income"). Using country income classification data, we can further analyze factors that make life better and examine how countries on different levels truly compare.

Many countries under this classification system have moved up levels over the past three decades (Appendix D), progressing economically. While we also have an instinct for expecting negativity, progress is gradually happening in the background. Let us now consider a prosperity analysis on internet usage. We will look at three random countries currently at the four levels.

Internet Users In the Four Levels

Year vs Internet Users as Percentage of Population, 12 random countries, 3 from each level.
Data Source: Gapminder based on World Bank.

At first glance, our Negativity Instinct may push us to use this data to confirm what we already expect: the internet is far more accessible in wealthier countries. However, if we take a moment to consider that this can be true in addition to progress being observable, the truth becomes more holistic. Higher level countries in this sample do indeed currently have higher internet usage rates and adopted the internet quickly. In examining the data, we can observe trends. Lower level countries appear to take a longer amount of time to initially adopt the technology and their rate integration of it into their population is also initially slower, but as we look towards the lower right portion of the graph, we can easily see that the lower level countries are following the same trend as the higher level countries, just more gradually. It is both that their access has been historically worse, and that it is getting much better. The negative is not the whole truth.

Conclusion

We all live in ignorance. A book like *Factfulness* alone cannot change the world, but it can encourage you to alter the way you see it. Despite the fact that the outlook of our world feels so dark at times, humanity is progressing. Hans Rolsing never saw the effects of the modern day pandemic, but I do wonder what he would say if he was still alive today. Experts at the World Bank observed an increase in 97 million people living in extreme poverty in 2020 due to the COVID-19 pandemic (Gersen Mahler). This sounds like a terrible, tragic setback, and it is. However, let's apply *Factfulness* to this information. First, we must expect bad news. This is bad news, and it is another great sadness of the pandemic. Next, we acknowledge our size instinct. Ninety-seven million is a very large number, but in a historical context, it represents a <12% annual increase in the number of extreme poor, down from an original estimation of 15%. It also only brings us back to roughly the same number as 2015/2016, very recent years, and is projected to decrease to 2016/2017 levels through 2021. It is a terrible setback, but as a result of the gradual progress we have been making for centuries, these numbers are lower than they would have been had this pandemic occurred at any other point in history. *Factfulness* provides us with a framework for empathy, realism, and progressive truth.

The world is not an equal place. I know that is true, and so did Hans Rosling. The purpose of *Factfulness* is not to convince the reader that all has become or is becoming right with the world, but that the world is getting better. *Factfulness*[3] should serve as a guidebook for how to ground oneself and read through data in a search for the truth. It warns us of our biases and reminds us that ignorance is prevalent, yet progress is out there if we look for it—but we must train ourselves to look for it. Even now, in some of the darkest of modern times, billions of improvements are gradually being made in the background of our world, slowly but surely creating a path for a new future for humanity. I know I want my worldview to progress alongside it.

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[3] For those interested in further reading, I suggest Stephen Pinker's *Enlightenment Now* and perusing the website Our World in Data.
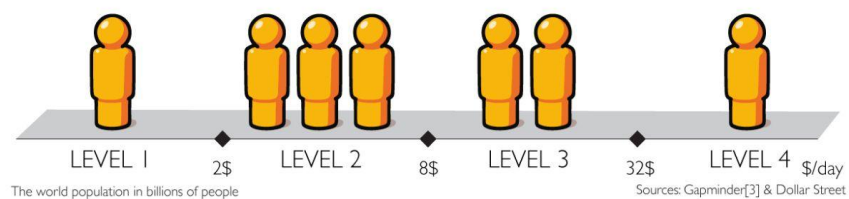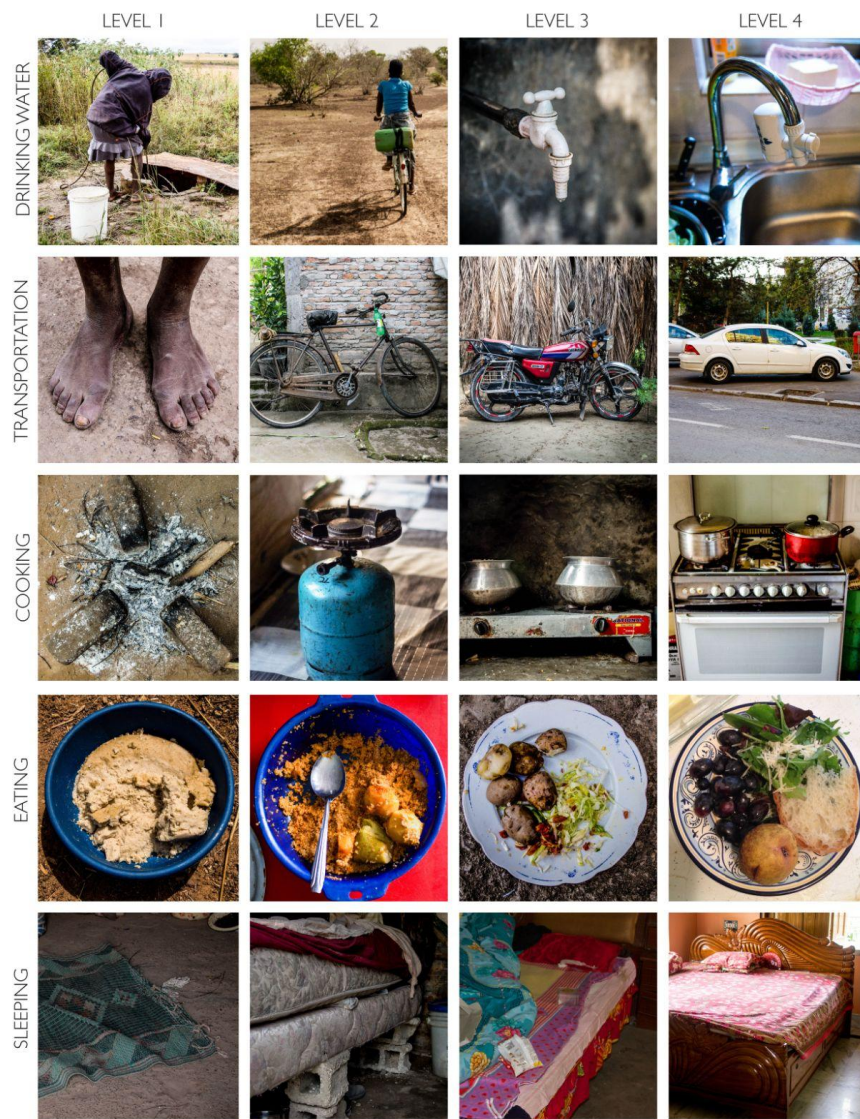
Factfulness quiz questions

1. In all low-income countries across the world today, how many girls finish primary school? A: 60%
2. Where does the majority of the world population live? A: Middle-income countries
3. In the last 20 years, the proportion of the world population living in extreme poverty has…? A: Almost halved
4. What is the life expectancy of the world today? A: 70 years
5. There are two billion children in the world today, aged 0 to 15 years old. How many children will there be in the year 2100 according to the United Nations? A: two billion children
6. The UN predicts that by 2100 the world population will have increased by another 4 billion people. What is the main reason? A: more adults
7. How did the number of deaths by natural disasters change over the last hundred years? A: more than doubled.
8. There are roughly 7 billion people in the world today. Which map shows best where they live? (Each figure represents 1 billion people.) A: 1-1-1-4 (4 billion in Asia)
9. How many of the world's 1-year-old children today have been vaccinated against some disease? A: 80%
10. Worldwide, 30-year-old men have spent 10 years in school, on average. How many years have women of the same age spent in school? A: 9 years
11. In 1996, tigers, giant pandas, and black rhinos were all listed as endangered. How many of these three species are more critically endangered today? A: none of them
12. How many people in the world have some access to electricity? A: 80%
13. Global climate experts believe that, over the next 100 years, the average temperature will… A: … get warmer
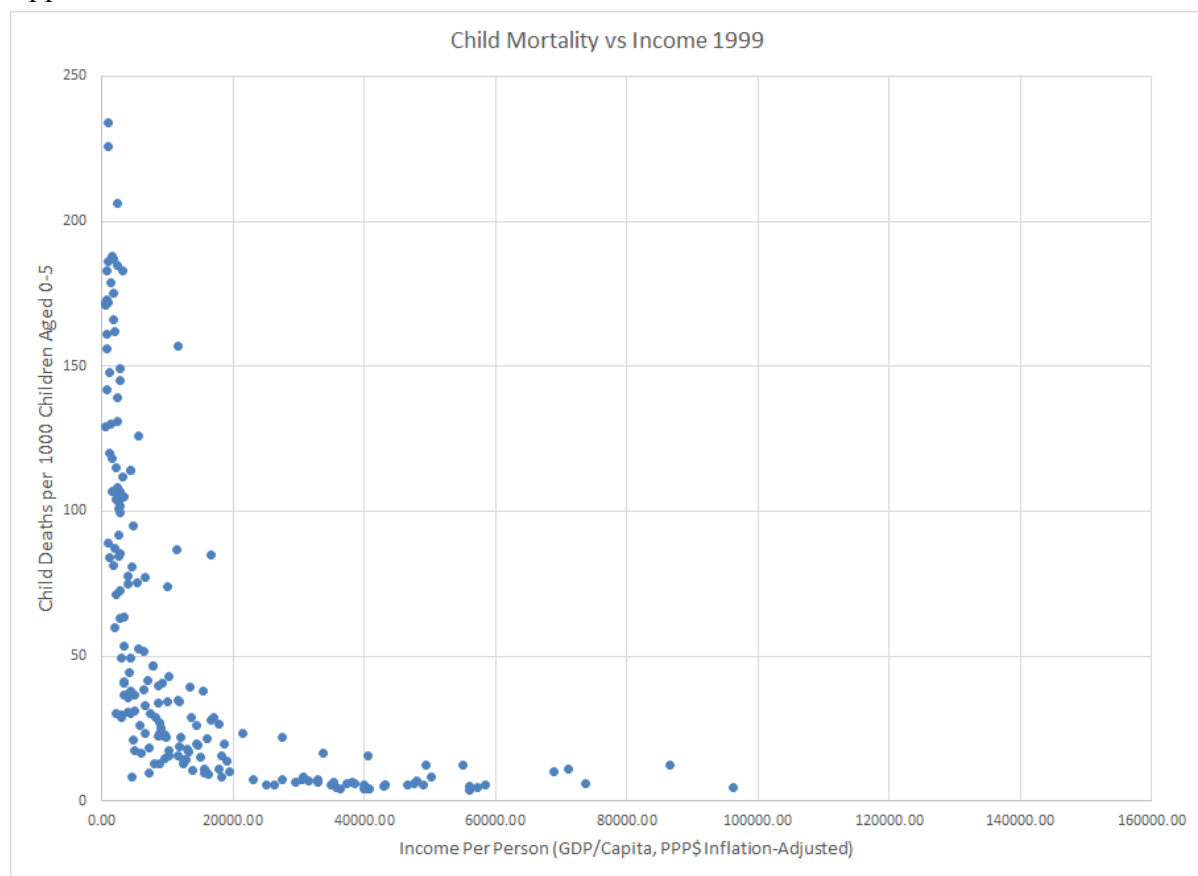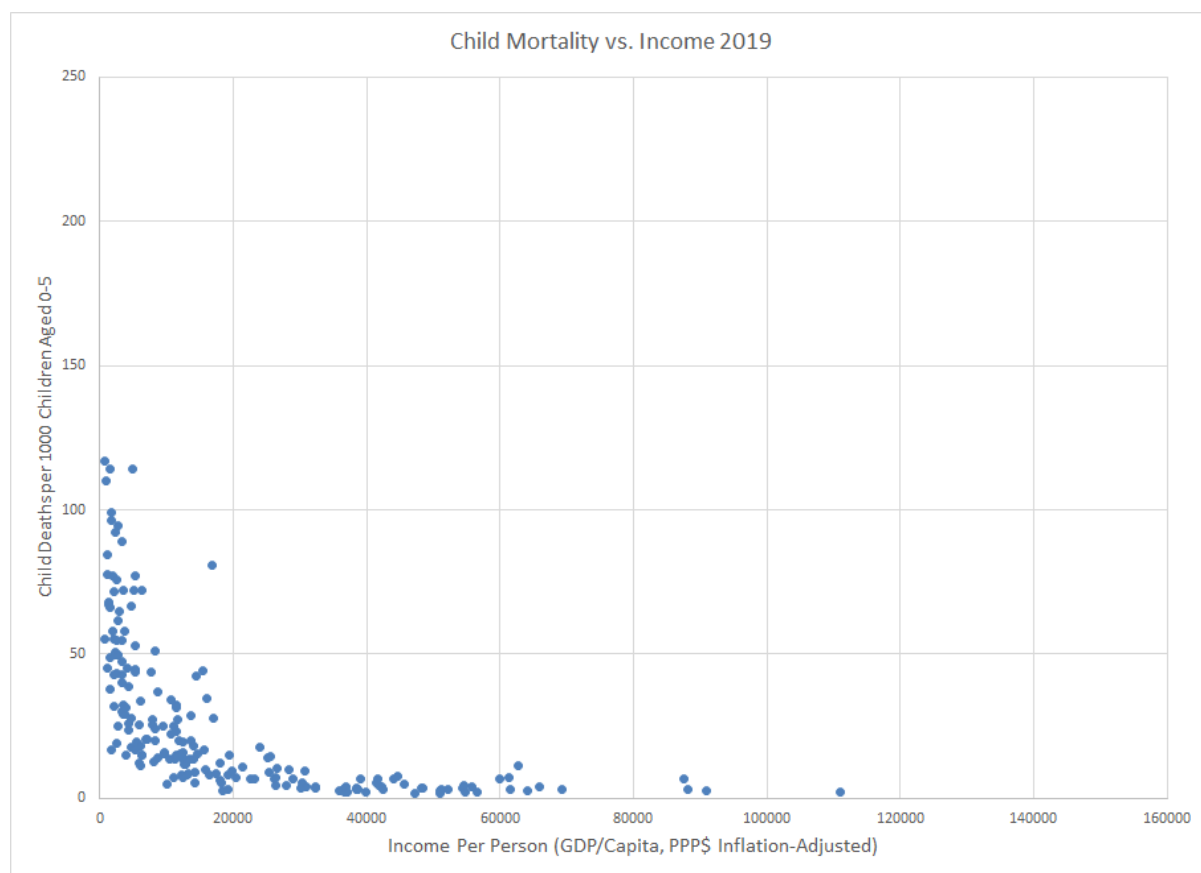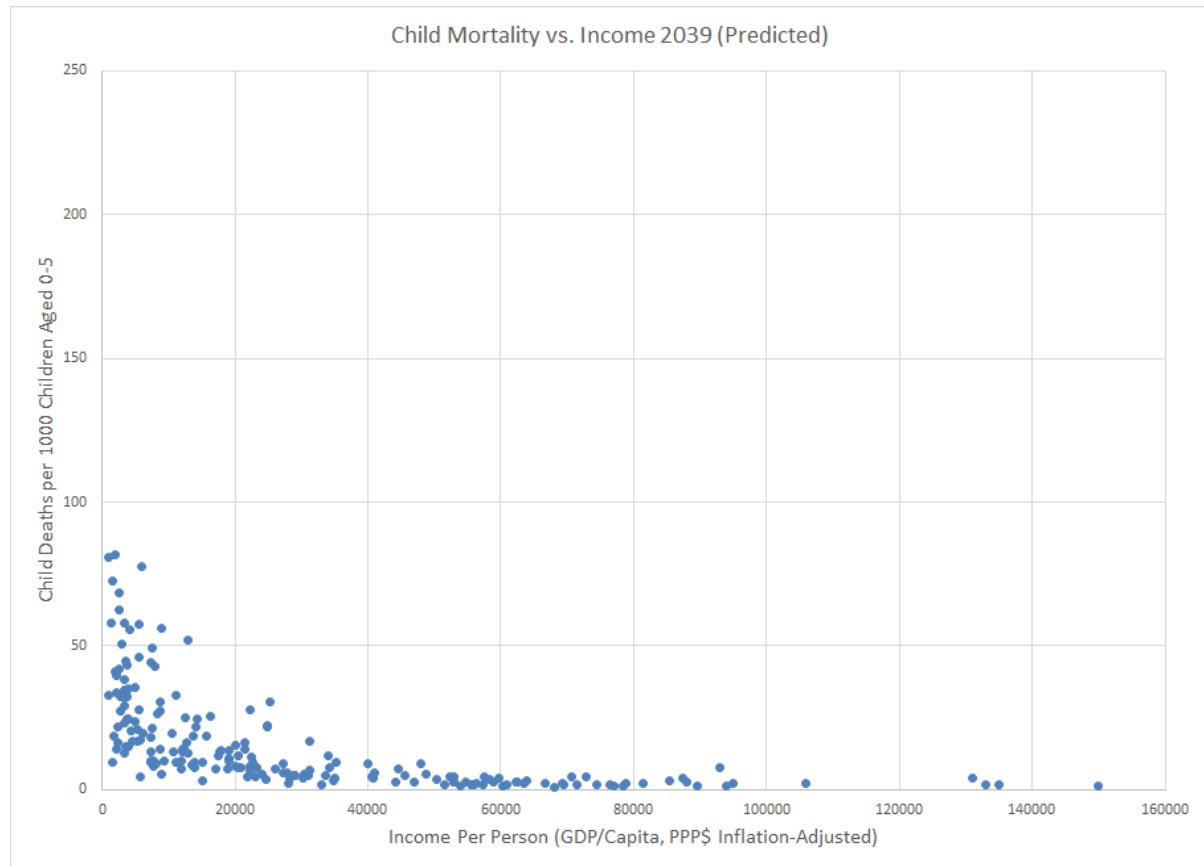
Life and populations on the four incomes.
Source: Gapminder, Dollar Street, and Factfulness.

Child Mortality vs Income 1999

Child Mortality vs. Income 2019

Child Mortality vs. Income 2039 (Predicted)

Child Mortality vs. Income 2019 (Extremes Removed)

Low income   Lower middle income   Upper middle income   High income

Low income   Lower middle income   Upper middle income   High income
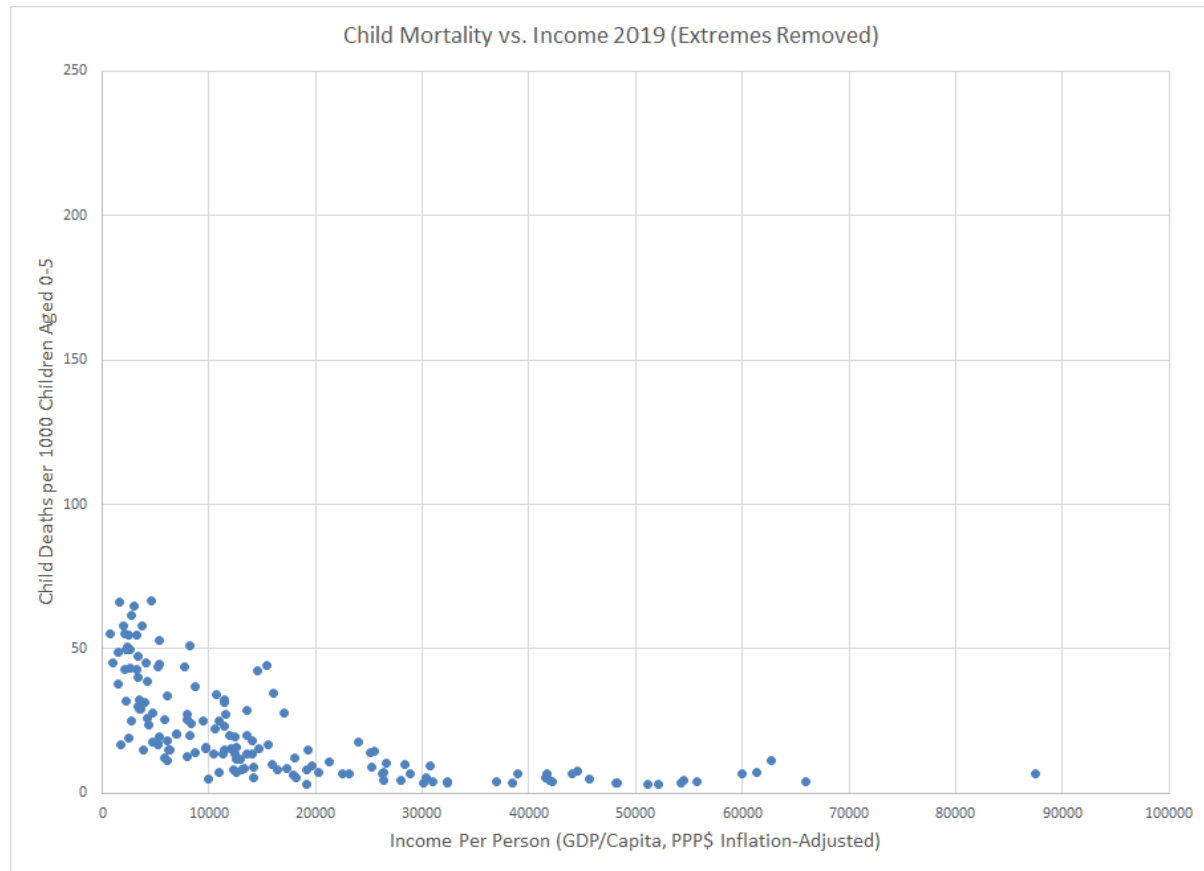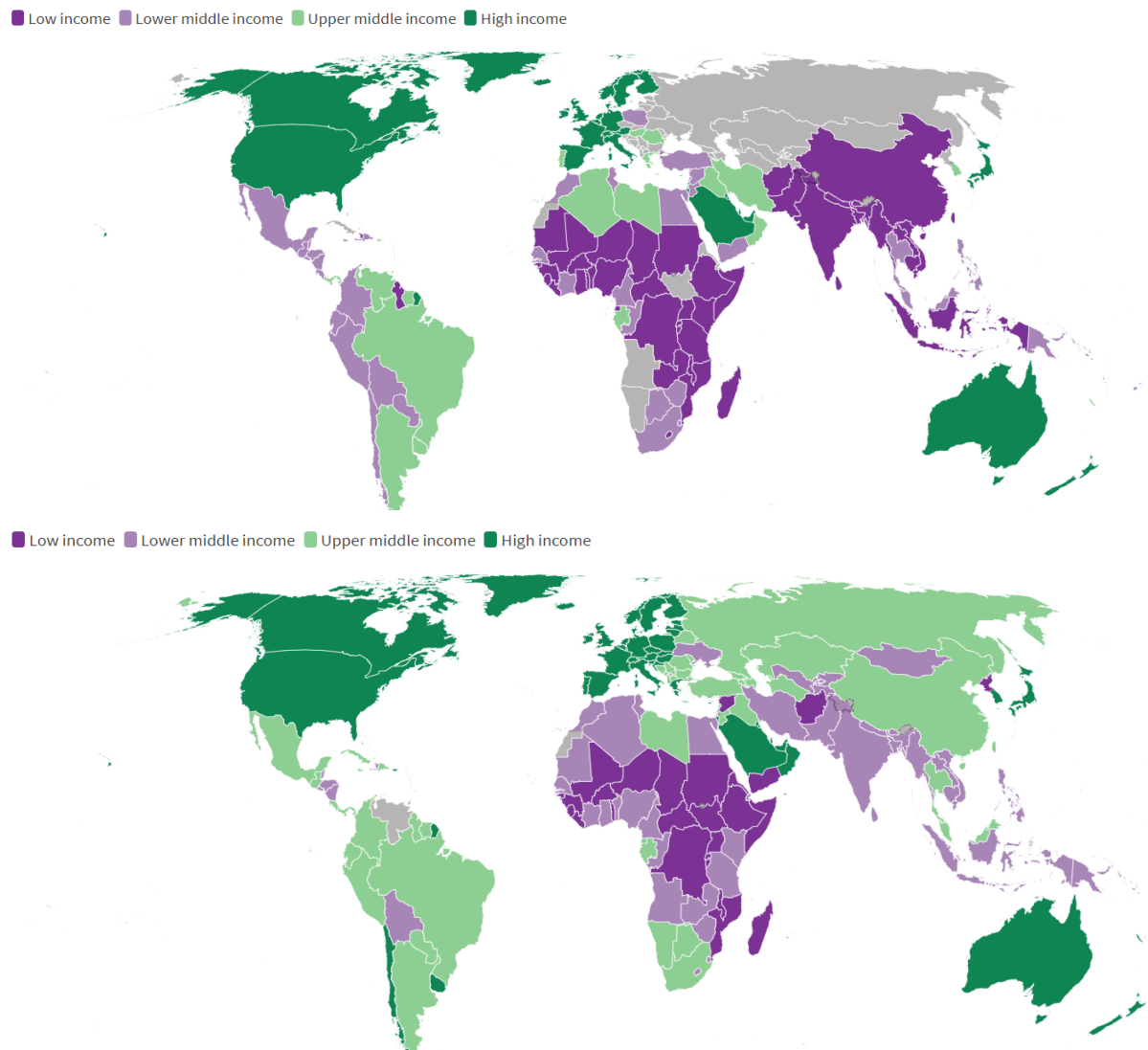

The World by Income in 1987 (top) and 2020 (bottom). Dark purple is low income. Light purple is lower middle income. Light Green is higher middle income. Dark green is high income. *Source: The World Bank*

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