

Analysis of the Economist's Democracy Index

By Daniel Ourinson

1.09.2024

This analysis examines the level of democracy in various countries, as measured by the Economist's "Democracy Index" [1,2], and its correlation with key indicators such as press freedom [3], life expectancy [4], and the percentage of GDP spent on education [5]. The objective is to assess a common assumption that there is a positive correlation between democracy and these indicators. The focus of this analysis is on observing and analyzing the data rather than interpreting or debating the implications of the results.

The Democracy Index scores range from 0 to 10, categorizing countries into the following regime types:

0-4: Authoritarian regime

4-6: Hybrid regime

6-8: Flawed democracy

8-10: Full democracy

Distribution of Countries by Regime Type in 2023

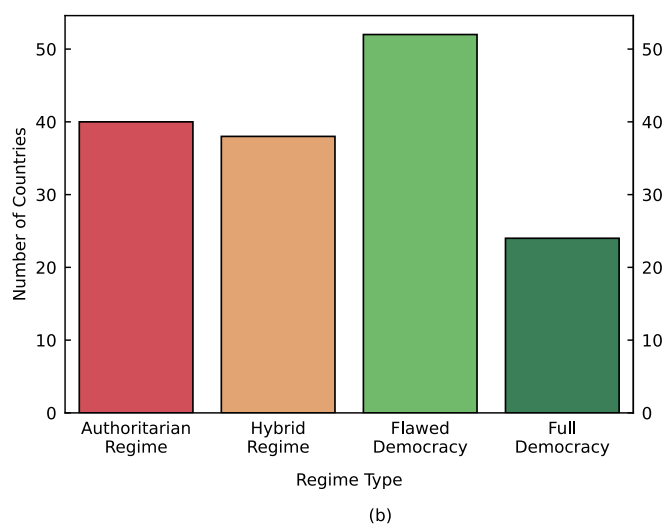
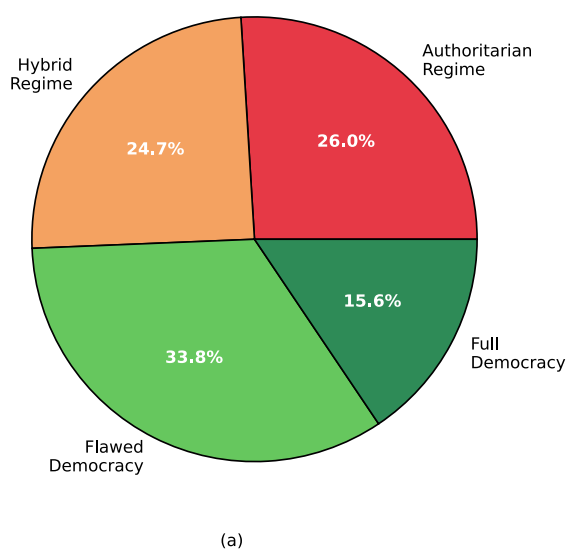


Figure 1

Figure 1 illustrates the distribution of countries by regime type in 2023, presented both as a pie chart (Figure 1a) and a bar graph (Figure 1b). According to the Democracy Index, approximately half of the world's countries were democracies in 2023. Among these, one-third were classified as full democracies, while two-thirds were considered flawed democracies. About a quarter of the countries were under authoritarian rule, with the remaining quarter consisting of hybrid regimes that combine democratic and authoritarian characteristics.

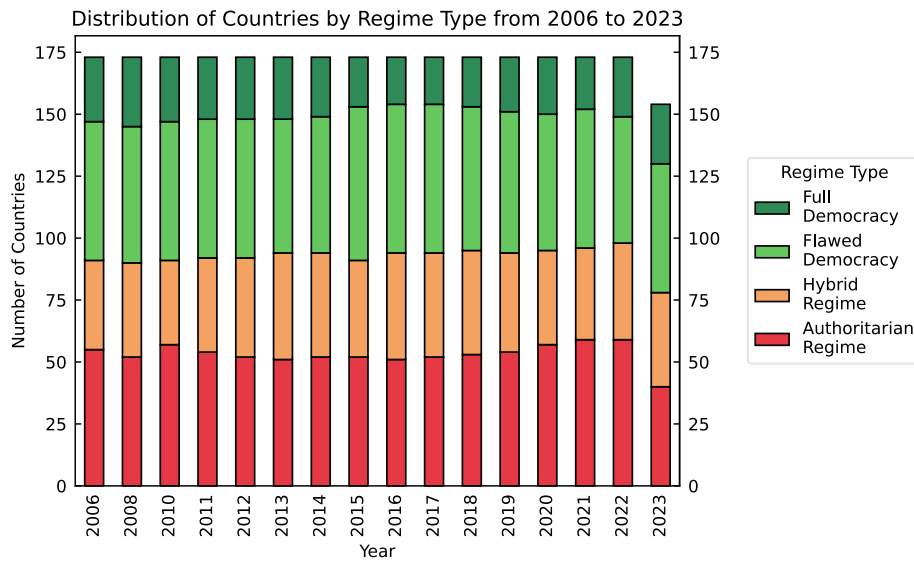


Figure 2

Figure 2 shows the proportions of regime types from 2006 to 2023. These proportions have remained relatively constant over this period, with only minor fluctuations. The lower number of countries listed in 2023 is likely due to incomplete data from certain regions at the time of data collection.

Distribution of the World Population by Regime Type in 2023

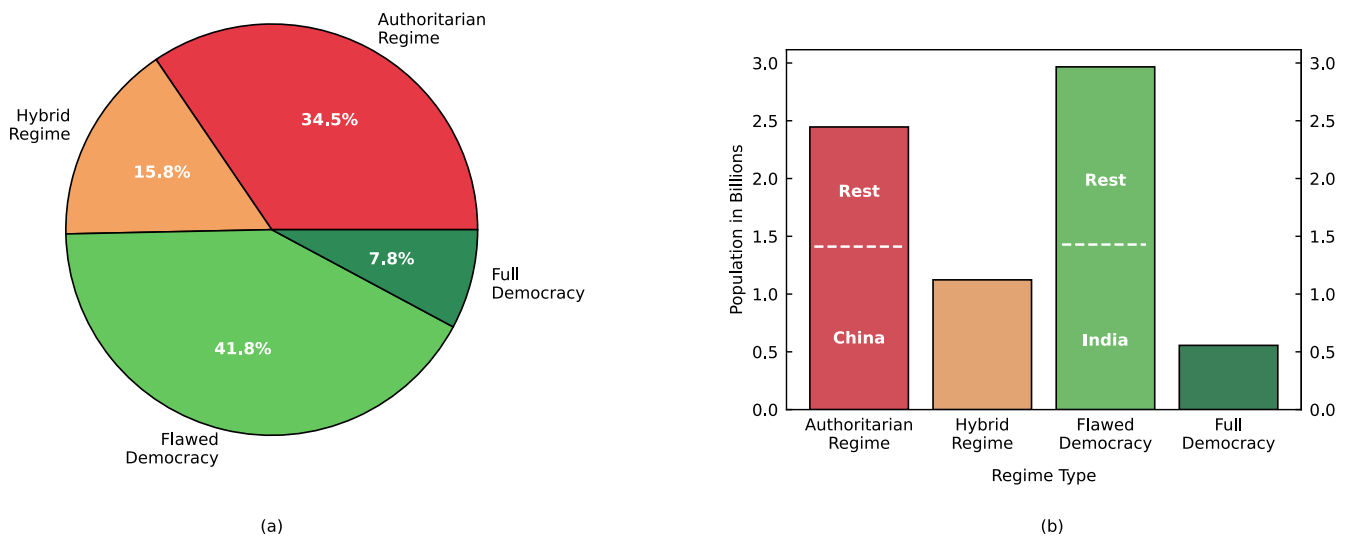


Figure 3

Figure 3 depicts the distribution of the world population [6] by regime type in 2023, presented both as a pie chart (Figure 3a) and a bar graph (Figure 3b). The data reveal that in 2023, approximately half of the world's population (of the listed countries), around 3.5 billion people, lived in democracies, a proportion that mirrors the distribution of democratic countries depicted in Figure 1. However, while Figure 1 indicates a 1:2 ratio of full to flawed democracies, the population ratio is closer to 1:6. This discrepancy arises because countries with flawed democracies typically have larger populations than those with full democracies. Notably, India, with a population of approximately 1.4 billion people, makes up half of the population in flawed democracies, constituting a significant portion of those living in flawed democracies (see Figure 1b). Although about a quarter of the world's countries were under authoritarian regimes, these nations accounted for roughly a third of the global population, or approximately 2.5 billion people, with China alone representing more than half of that figure at around 1.4 billion people. While around a quarter of countries were classified as hybrid regimes, these nations comprised about a fifth of the world's population, or approximately 1.1 billion people.

Correlation Between Democracy and Press Freedom in 2023

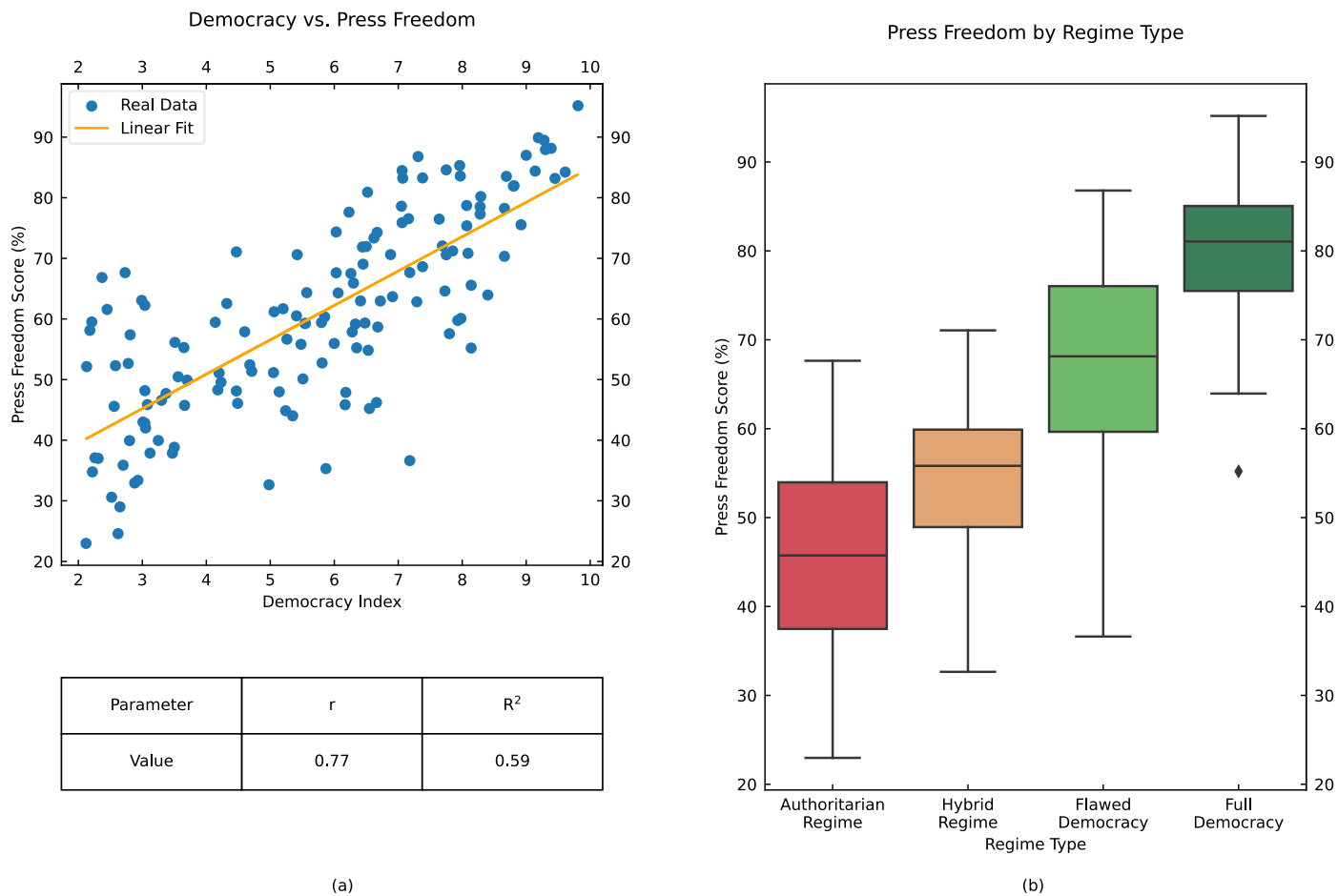


Figure 4

Figure 4 visualizes the correlation between the Democracy Index and the press freedom scores of countries in 2023, with the latter ranging from 0% to 100%. Figure 4a shows a scatter plot of the press freedom scores over the Democracy Index, along with a linear fit line. The Pearson coefficient (r) and coefficient of determination (R^2) are displayed below the scatter plot, with the results showing a strong positive linear correlation between the Democracy Index and press freedom score, indicated by $r = 0.77$. $R^2 = 0.59$ suggests that 59% of the variation in press freedom scores can be explained by differences in the Democracy Index. This underscores the significant relationship between higher levels of democracy and increased press freedom. Figure 4b presents a box plot comparison of press freedom scores across different regime types, showing a clear upward trend in median press freedom scores from authoritarian regimes to full democracies. This trend reinforces the positive correlation observed in Figure 4a. Notably, the variability in press freedom scores within full democracies is narrower than in flawed democracies, indicating more consistent levels of press freedom in full democracies.

Countries with Minimum and Maximum Press Freedom by Regime Type in 2023

Table 1

Regime Type	Min/Max	Press Freedom Score (%)	Country	Democracy Index
Authoritarian Regime	Min	23.0	China	2.1
Authoritarian Regime	Max	67.6	Burkina Faso	2.7
Hybrid Regime	Min	32.6	Honduras	5.0
Hybrid Regime	Max	71.1	Gambia	4.5
Flawed Democracy	Min	36.6	India	7.2
Flawed Democracy	Max	86.8	Lithuania	7.3
Full Democracy	Min	55.2	Greece	8.1
Full Democracy	Max	95.2	Norway	9.8

Table 1 complements the insights from Figure 4b by listing countries with the minimum and maximum press freedom scores within each regime type. This table highlights notable exceptions to the general trend. For instance, India, despite being classified as a flawed democracy, had a relatively low press freedom score, nearly equivalent to Honduras (the country with the lowest press freedom score among hybrid regimes) and China (which had the lowest score among authoritarian regimes and indeed the lowest score of all countries analyzed). On the other hand, Gambia (which had the highest press freedom score among hybrid regimes) and Burkina Faso (which had the highest score among authoritarian regimes) both achieved higher press freedom scores than India, despite having lower democracy indices. This suggests that while there is a strong correlation between democracy and press freedom, significant outliers exist where less democratic countries can maintain relatively high levels of press freedom. Additionally, while China had the lowest press freedom score of all the countries listed, Norway was at the opposite end of the spectrum with the highest press freedom score.

Correlation Between Democracy and Life Expectancy in 2022

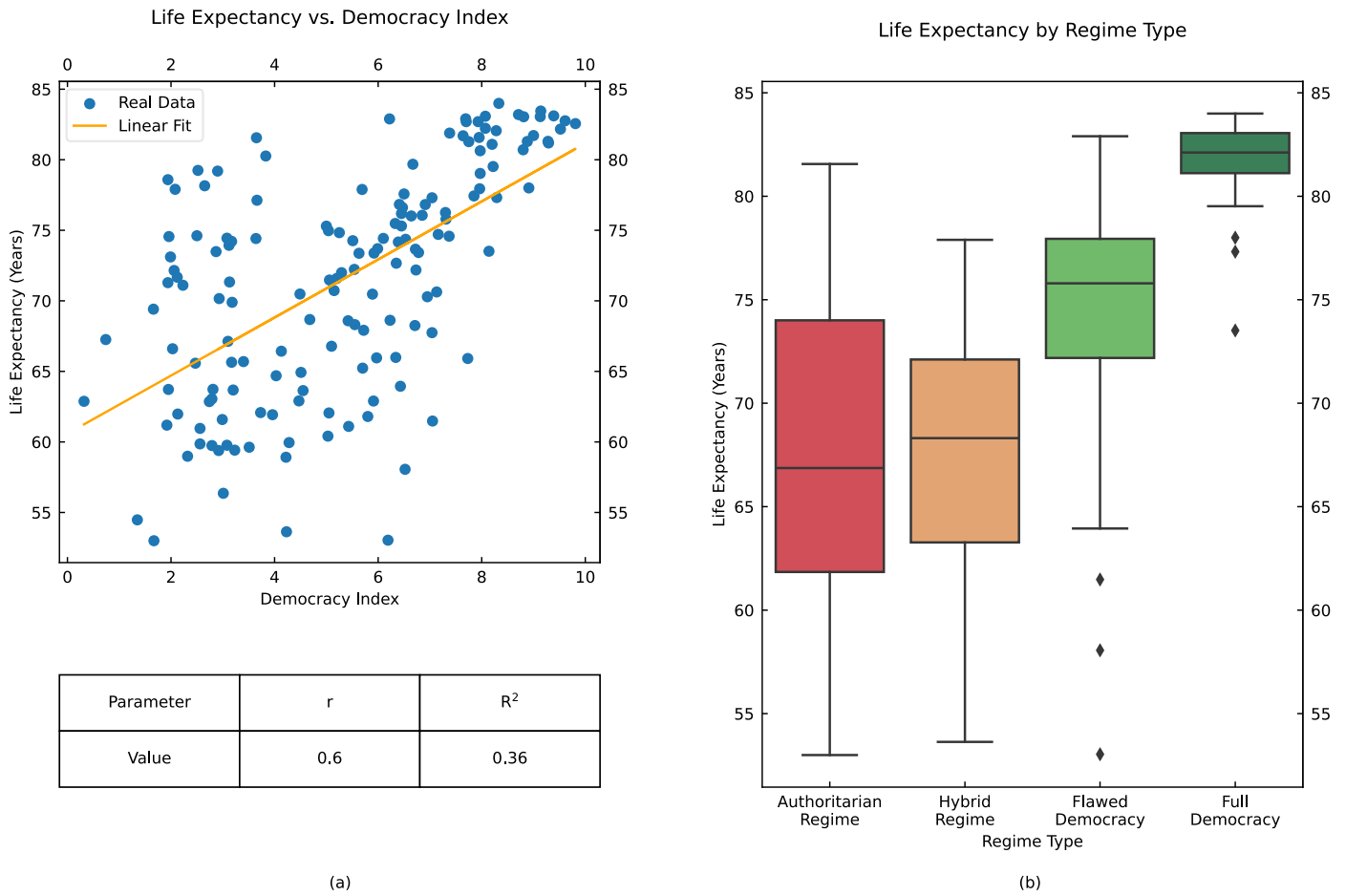


Figure 5

Figure 5, which follows a structure similar to Figure 4, visualizes the correlation between the Democracy Index and life expectancy in 2022. Figure 5a indicates a moderate positive linear correlation between the Democracy Index and life expectancy, as shown by $r = 0.6$. $R^2 = 0.36$ suggests that 36% of the variation in life expectancy can be explained by differences in the Democracy Index. This indicates that while democracy is a significant factor in determining life expectancy, other factors also play a considerable role. Figure 5b displays a clear upward trend in the median life expectancy from authoritarian regimes to full democracies, reinforcing the positive correlation observed in Figure 5a. Additionally, the variability in life expectancy decreases from authoritarian regimes to full democracies, indicating more consistent life expectancy levels in countries with higher democracy indices. Life expectancy tends to be relatively high in democracies, especially in full democracies.

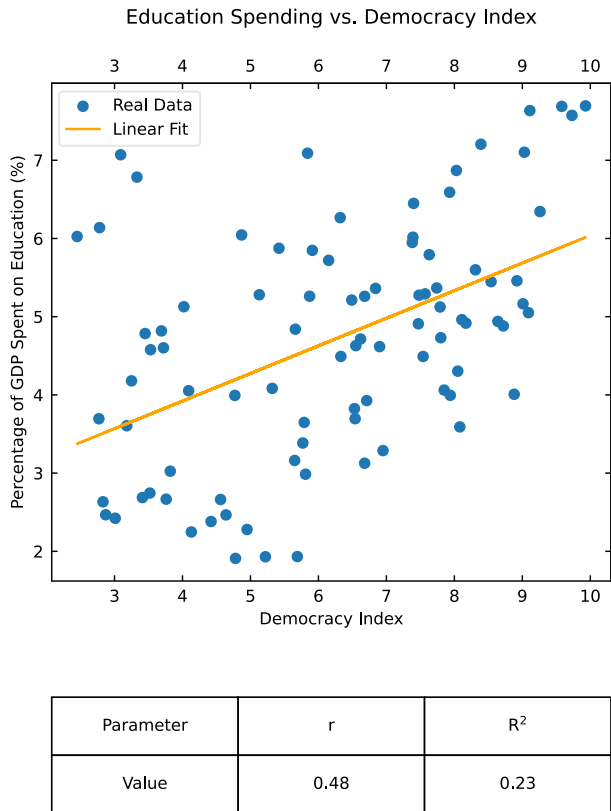
Countries with Minimum and Maximum Life Expectancy by Regime Type in 2022

Table 2

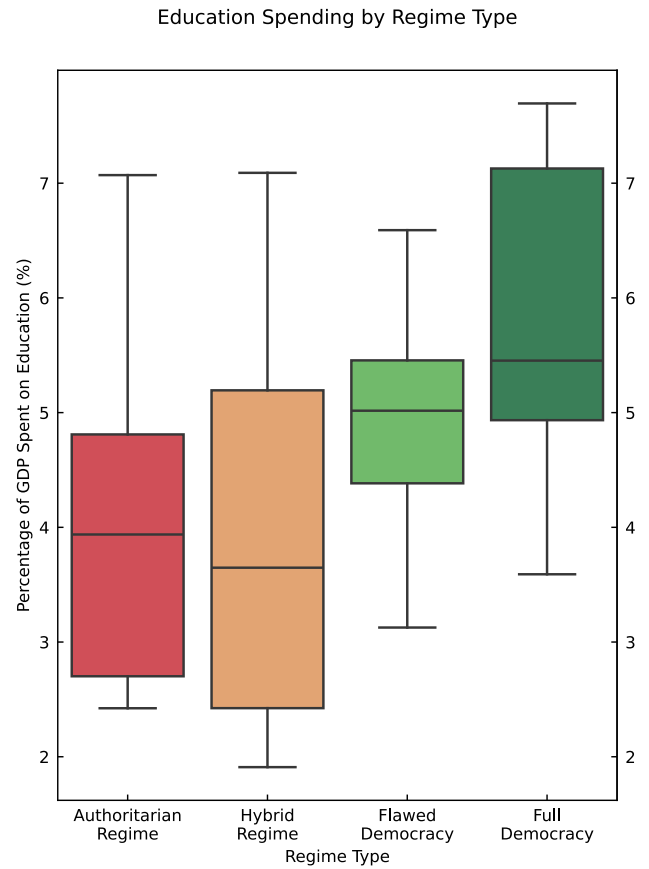
Regime Type	Min/Max	Life Expectancy (Years)	Country	Democracy Index
Authoritarian Regime	Min	53.0	Chad	1.7
Authoritarian Regime	Max	81.6	Qatar	3.6
Hybrid Regime	Min	53.6	Nigeria	4.2
Hybrid Regime	Max	77.9	Ecuador	5.7
Flawed Democracy	Min	53.0	Lesotho	6.2
Flawed Democracy	Max	82.9	Italy	7.7
Full Democracy	Min	73.5	Mauritius	8.1
Full Democracy	Max	84.0	Japan	8.3

Table 2 provides a detailed look at the countries with the minimum and maximum life expectancies within each regime type, as discussed in Figure 5b. The table reveals that the minimum life expectancies for authoritarian regimes (Chad, which has the lowest of all countries), hybrid regimes (Nigeria), and flawed democracies (Lesotho) were relatively similar, hovering around the mid-50s. In contrast, the minimum life expectancy for full democracies (Mauritius) was approximately 20 years higher. Interestingly, the maximum life expectancies across different regime types were fairly similar, with Japan (a full democracy) having the highest life expectancy of all countries. Notably, Qatar, which had the highest life expectancy among authoritarian regimes, surpassed the life expectancies of countries with the minimum life expectancy in other regime types. This highlights that while more democratic countries generally had higher life expectancies, there are exceptions where less democratic countries still achieved relatively high life expectancy rates.

Correlation Between Democracy and Spending on Education in 2014



(a)



(b)

Figure 6

Figure 6, structured similarly to Figures 4 and 5, visualizes the correlation between the Democracy Index and government spending on education as a percentage of GDP in 2014. Figure 6a indicates a moderate positive linear correlation between the Democracy Index and education spending, as shown by $r = 0.48$. $R^2 = 0.23$ suggests that 23% of the variation in education spending can be explained by differences in the Democracy Index. This indicates that while democracy contributes to higher education spending, other factors also play a substantial role. The data reveal that countries generally spent between 2% and 8% of their GDP on education in 2014. Figure 6b shows that both authoritarian and hybrid regimes have similar median education spending levels, whereas democracies exhibit significantly higher median spending. Moreover, the interquartile range for full democracies lies within a generally higher spectrum compared to flawed democracies, indicating more consistent and higher investment in education among full democracies.

Countries with Minimum and Maximum Percentage of GDP Spent on Education by Regime Type in 2014

Table 3

Regime Type	Min/Max	gdp_edu (%)	Country	Democracy Index
Authoritarian Regime	Min	2.4	Guinea	3.0
Authoritarian Regime	Max	7.1	Eswatini	3.1
Hybrid Regime	Min	1.9	Cambodia	4.8
Hybrid Regime	Max	7.1	Honduras	5.8
Flawed Democracy	Min	3.1	Romania	6.7
Flawed Democracy	Max	6.6	Belgium	7.9
Full Democracy	Min	3.6	Japan	8.1
Full Democracy	Max	7.7	Norway	9.9

Table 3 provides a detailed examination of the countries with the minimum and maximum education spending (gdp_edu (%)) within each regime type, complementing the insights from Figure 6b. The table reveals that the minimum and maximum life expectancies were roughly similar, respectively. Notably, Belgium, which had the lowest education spending among flawed democracies, spent less on education than Honduras (which had the highest education spending among hybrid regimes) and Eswatini (which had the highest spending among authoritarian regimes). Moreover, Eswatini's education spending was higher than that of Japan, which had the lowest spending among full democracies. In this context, it is interesting to observe that Japan, despite having the lowest education spending among full democracies in 2014, boasted the highest life expectancy in 2022 (as seen in Table 2). Notably, Cambodia, a hybrid regime, spent the least on education across all countries, while Norway, a full democracy, spent the most. In this context, Norway not only had the highest education spending in 2014 but also had the highest press freedom score in 2023 (as seen in Table 1), both among full democracies and across all countries.

To sum up this analysis, here are the key conclusions:

- According to the Economist's Democracy Index, approximately half of the world's countries are classified as democracies (see Figure 1).
- Around half of the global population resides in countries that are classified as democratic (see Figure 2).
- The proportions of different regime types have remained relatively stable over the past 20 years, showing little significant change (see Figure 3).
- There is a strong positive correlation between the level of democracy and press freedom, indicating that more democratic countries tend to enjoy greater press freedom (see Figure 4).
- A moderate positive correlation exists between democracy and life expectancy, suggesting that democratic countries generally have higher life expectancies (see Figure 5).
- There is also a moderate positive correlation between democracy and government spending on education, though this correlation is weaker than that between democracy and life expectancy (see Figure 6).
- Figures 4-6 support the intuitive assumption of a positive correlation between democracy and press freedom, life expectancy, and education spending. However, there are notable exceptions where this pattern does not hold.

If you are interested in further analysis, feel free to reach out!

References and datasets:

- [1] <https://www.eiu.com/n/campaigns/democracy-index-2023/>
- [2] <https://ourworldindata.org/grapher/democracy-index-eiu?tab=table&time=2006..2023>
- [3] <https://rsf.org/en/index>
- [4] <https://data.worldbank.org/indicator/SP.DYN.LE00.IN>
- [5] <https://databank.worldbank.org/source/education-statistics-%5e-all-indicators/preview/on#>
- [6] https://data.worldbank.org/indicator/SP.POP.TOTL?most_recent_year_desc=true