

The gap between reality and perception

Cognitive bias and socio-economic indexes



SCAN ME



Relating the 5 variables in the same graph and using flag size to represent the *bias*, we expect countries closer to the origin to have smaller flags and further ones to have bigger flags.

Motivation

The strong contrast between accessibility to information and perception of reality is a current topic. The expression *cognitive bias* refers to a judgement developed on interpretation of information not logically related to each other that brings to a mistake in evaluation. Think about *bias* as *the distance between what is real and what we think it is*. The concept of *bias* was born at the beginning of '70s, thanks to psychologists Kahneman and Tversky; their researches showed that individuals act using mental shortcuts instead of rational processes. In 2002 Kahneman was awarded the Nobel Prize for Economics, for having incorporated the results from decisional psychology into economic science.

Hypothesis

Cognitive bias has to be considered a relevant issue in the algorithmic information era, where our beliefs (often wrong) are reaffirmed by the inputs we receive from the media. Given that rational inability to elaborate information is structurally present in individuals, we assume that its intensity grows in the following situations: poor education (and critical thinking), economic difficulty (social destabilisation) and control over information.

Method

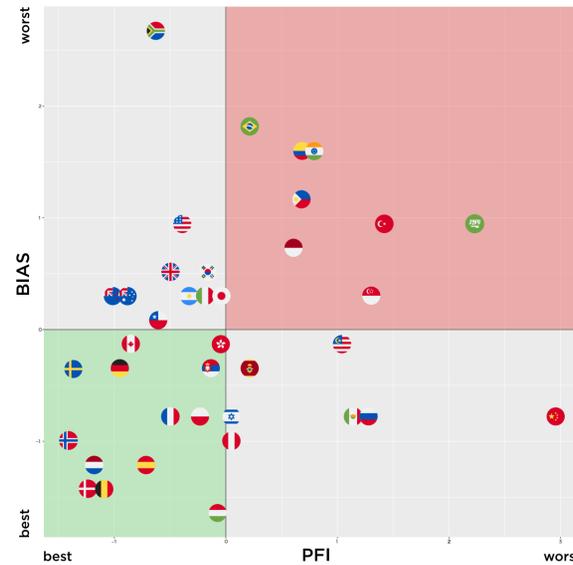
The aggregated data refer to 38 countries in the year 2017. The source used for the *bias index (BIAS)* is IPSOS, which in turn used microdata from WorldBank, OECD and Euromonitor. The questionnaires taken into consideration are about the perception of social issues such as immigration, health, terrorism, environment, young people and not only these ones. The *Press Freedom Index (PFI)* measures the degree of freedom of journalists, organizations, netizens and is taken from Reporters Without Borders. The *Human Development Index (HDI)* takes into account life expectancy, education and revenue in the various countries and is taken from Human Development Reports. The *Misery Index (Misery)* adds the inflation rate to the unemployment rate and is taken from the Economist Intelligence Unit and Focus Economics. Tools used are standardizations, correlations, simple graphs and 3D graphs with 5 variables. To display data frames, microdata, data sources and the **interactive 3D graph** scan the QR code.

Target

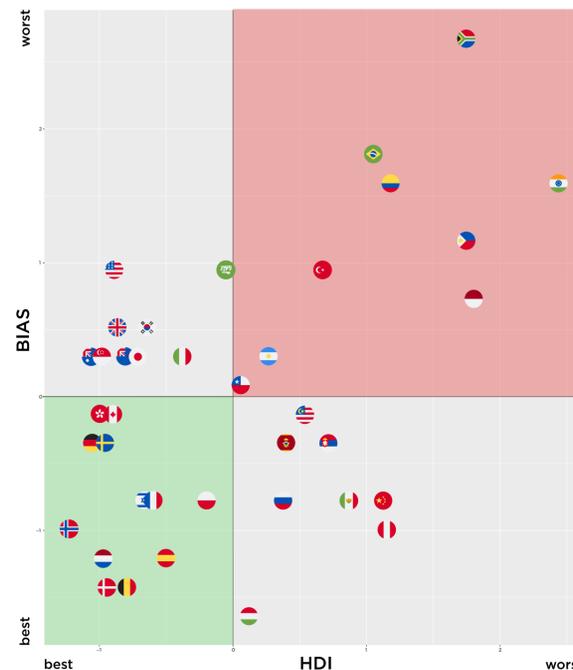
To research possible correlations between *bias* index and adverse social, political and economic conditions.

How to look at the graphs

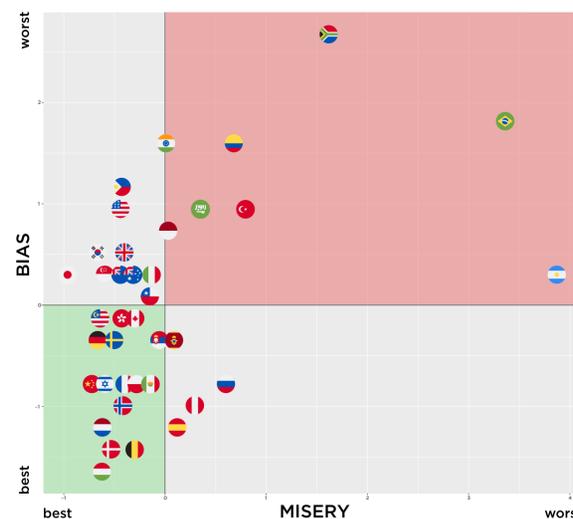
Getting closer to the origin, the value of each parameter represents a better situation (low distortion, more press freedom, quality education and better economic condition) and vice versa. Values on axes are standardized; this means that when a flag is aligned with 0 the value matches with the average value. Countries in the **GREEN** zone present a better quality situation than the average of all other countries, and vice versa in the **RED** zone.



Correlation
0,24 (weak)
Press freedom/
cognitive bias
(38 countries)

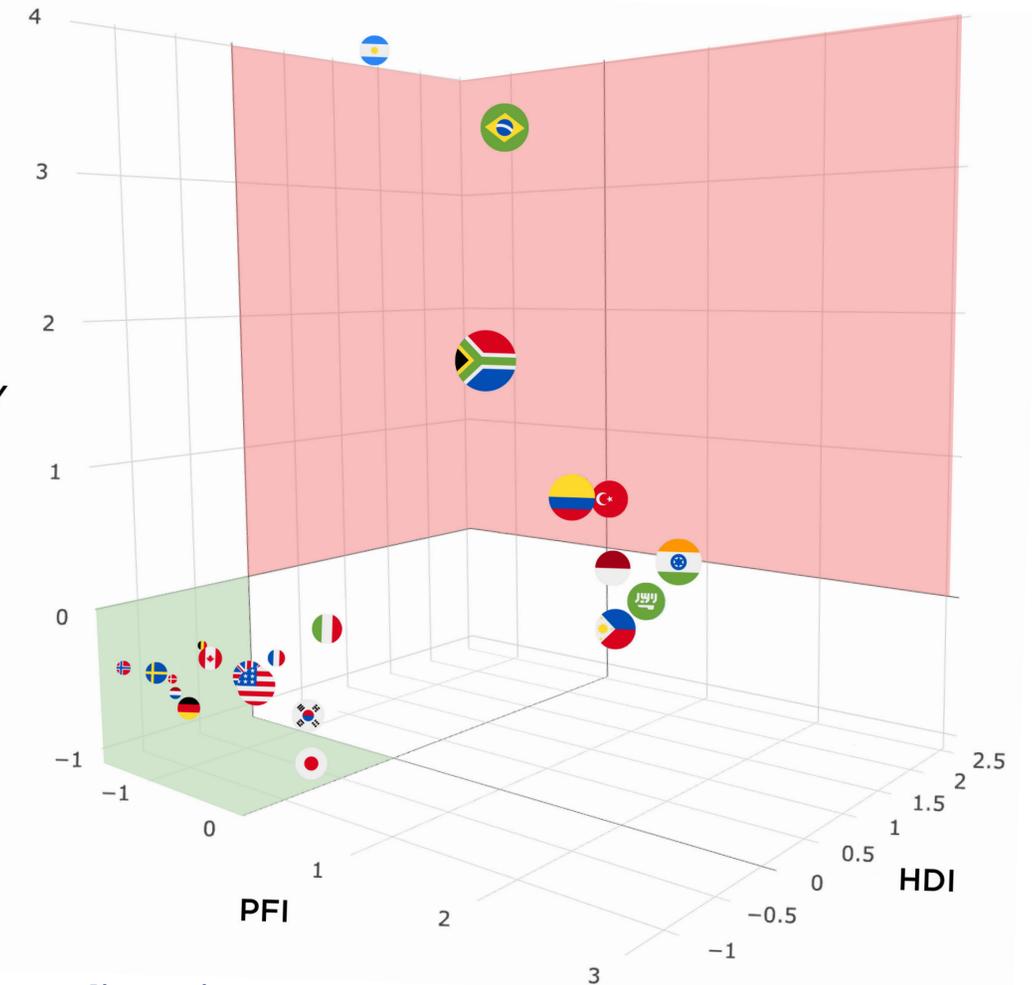


Correlation
0,47 (moderate)
Human development/
cognitive bias
(38 countries)



Correlation
0,44 (moderate)
Misery/
cognitive bias
(38 countries)

Cognitive bias and socio-economic indexes, countries (22) selected



Bias comparison

South Africa: 2,67
Italy: 0,3
Denmark: -1,42

Observation

Not all the countries in the **GREEN** area are low *bias* countries; only 61% of them have a rate of *bias* below the average. Notice how the *bias* is systematically above the average as we approach to the **RED** zone: that reflects a below average situation for *HDI* and *Misery* index, which are the most significant parameters. In this area, 70% of countries present a *bias* rate above the average.

Conclusions

Our analysis highlighted interesting conclusions: Press Freedom does not necessarily generate a higher degree of information intended as better knowledge of reality. Higher *bias* countries turned out to be more vulnerable to *HDI* and *Misery* Index, so we can assume that, in distorting reality, the economic situation has a major impact than the other factors examined.