

Correlation of the economic freedom index with other indices, and its general importance worldwide

- A Data Mining Approach

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1 Introduction

Economic Freedom is the fundamental right of every human to control his or her own labor and property. A economically free society is that in which its individuals are free to produce, work, consume and invest in any way they please [Foundation, 2022b].

The Heritage Foundation, creator of the *Index of Economic Freedom*, defines it as the documentation of the positive relationship between economic freedom and a variety of positive social and economic goals, measured based on 12 quantitative and qualitative factors, grouped into four broad categories of economic freedom: **Rule of Law:** property rights, government integrity, judicial effectiveness; **Government Size:** government spending, tax burden, fiscal health; **Regulatory Efficiency:** business freedom, labor freedom, monetary freedom; and **Open Markets:** trade freedom, investment freedom, financial freedom. The Economic Freedom Index rates each of the twelve economic freedoms on a scale of 0 to 100. Thus, the overall score of a country consists of the non-weighted average (equal importance given to each) of the twelve economic freedoms. The country's scores for the 2022 Economic Freedom Index were calculated based on data which covers the second half of 2020 through the first half of 2021. A more thorough explanation of the elements which constitute this index and the methodology used to construct it can be found at [Foundation, 2022a].

Having mentioned the fundamentals of the primary source of information for this investigation, our main focus throughout this article will be to understand the data which supports the Economic Freedom Index, define the importance of the economic freedoms worldwide and determine the correlation that economic freedom has with other country-based metrics, such as happiness, life expectancy, literacy, crime and migration rates. The previous because, counter intuitively, countries like Costa Rica or Nicaragua, which rank 55

and 122 on the Economic Freedom Index, respectively, rank much better on the happiness index [John F. Helliwell and Wang, 2022], at 23 and 45 (see fig. 1).

World Happiness Report 2022

Figure 2.1 Ranking of Happiness based on a three-year-average 2019-2021



Fig. 1: Ranking of Costa Rica and Nicaragua on the Happiness Index. Extract from [John F. Helliwell and Wang, 2022].

In this study, then, we present a statistical analysis of the correlation between these different metrics and the economic freedom of a country, with the main purpose of integrating data from different sociological metrics in such a way that it can lead to a better understanding of the implications that economic freedom has in the overall well-being of an individual inside a country.

2 Research background and related works

The relationship between a society's well-being and its economic factors has long been studied, as [Granillo, 2019] mentions, the relationship between the human work, creation, consumption, the economy and a nation's welfare was described by Adam Smith (1723-1790) in his book *The wealth of Nations* from 1776.

Nonetheless, today's deeply capitalist societies and their growth and wellness can be understood thanks to the works of [Solow, 1956], as determined in the article by

[James D. Gwartney, 1999], in which economic freedom is found to be a significant determinant of economic growth.

More recent approaches by [Foundation, 2022a] have found interesting relationships between a country's economic freedom and the *Human Development Index Score*, finding a positive correlation of 0.72 in the Middle East / North Africa region, for example (see *fig. 2*). This value indicates the strong bond between economy and general well-being in a country, hypothesis on which we base the analysis done in this study. The analysis done by [Daniel Gropper, 2011] details the relationship between happiness and economic freedom, underlining the positive relationship between national levels of happiness and economic freedom, as well as the strong positive relationship between GDP per capita and happiness, as shown in *fig. 3*.

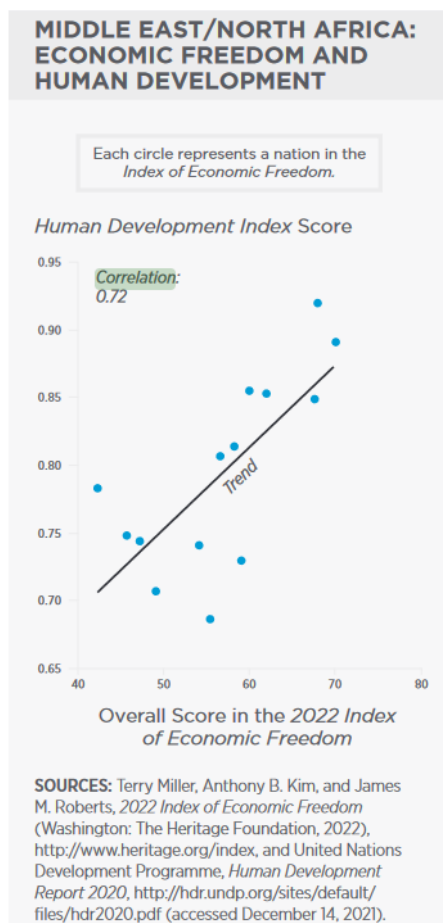


Fig. 2: Economic Freedom and the Human Development Index Score in Middle East / North Africa region. From [Foundation, 2022a].

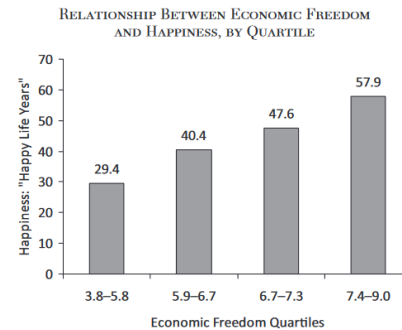


Fig. 3: Economic Freedom and "Happy Life Years". From [Daniel Gropper, 2011]

2.1 Motivation

The enormous development surrounding computers processing and storage capabilities in the last few years has set the appropriate tools needed for a thorough analysis and leverage of big amounts of data. Economic and finance data has since been one of the key elements of study in data mining and artificial intelligence, with applications in economy government policies or algorithmic trading [Media, 2022]. However, there are few published articles that use data mining and artificial intelligence techniques to determine the relationship between economic freedom and other sociological metrics in a country.

For this reason, we have decided to make an integral, holistic, data mining approach to economic freedom and other sociological metrics, with the main purpose of determining the correlation and impact the economic freedom has in the wellness of a country's individuals.

3 Concluding remarks

This article has been proof of the existing relationship between the Economic Freedom Index and other sociological metrics such as happiness, life expectancy, literacy, crime and migration rates. The data mining approach used during this study allowed a more integral and holistic vision of economic and societal factors.

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