

## Final Project Delivery for Fundamentals of Visualization Course

Introduction	Introduction	Countries that are presented in the 201..	A simple table shows the countries rank for..	Happiness Rank in a Geographic Heat Map	Health Score in a Geographic Heat Map	Trust (Goverment Corruption) Score in a..	Freedom Score in a Geographic Heat Map	Economy (GDP) in ..
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### A Brief Recap of the Dataset :

The World Happiness Report 2016 is a dataset that reports the happiness score of more than 150 countries based on several factors that are measured while conducting the yearly survey for a representative sample from the population of each community

In addition to conducting the surveys, the happiness score calculation is based on other features that are not able to be measured by surveys only, such that it needs specific governmental organizations to provide with the needed information to calculate a ..

For example, the most important features that showed a high correlation with the Happiness Score(As we are considering it is our TARGET) are : Economy, Health, and Family Features. Please refer to the following link of the Jupyter Notebook related to this project published in my GitHub profile.(  
<https://github.com/laithrasheed/World-Happiness-Rep..>

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## Goals, Tasks, and Remarks

### Goals :

- 1) The primary goal is to deliver the final project of the course number 4 in the Vital Skills in Data Science Visualization by applying the skills learned during the course.
- 2) Another main goal is visualizing the WHR-2016 dataset in a proper way either using Altair package in Python or any other tool which here I am using Tableau.

### Tasks:

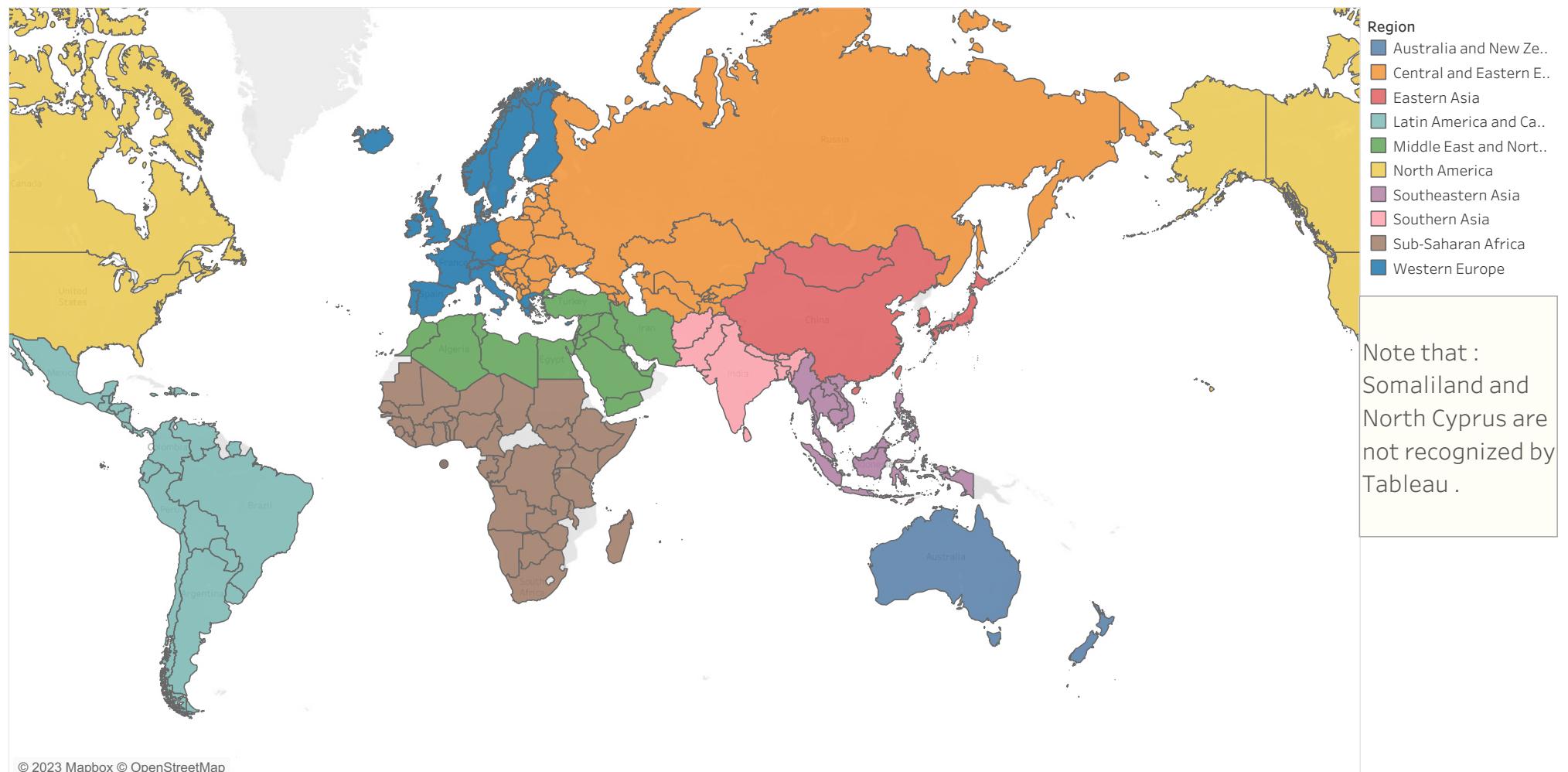
- 1) In this course we are not required to generate Hypothesis and test them , also we are not required to implement a Machine Learning Model, but I am going to assume that the correlation matrix presented in the Jupyter Notebook are our Hypothesis and through the visualizations we will discover how much the relationship between the three factors (Health, Economy, and Family) are affecting the Happiness Score strongly or not.

### Remarks:

- 1) If we double check the values of the dataset as is, it does not reflect a meaning value, i.e., when we say a value under the family feature is 1.5 , it does not reflect how many members are within a one family , or does not describe any statistical term within it. So, I believe that the best type for the visualization charts is the Geographic heat maps only, Since I can apply many dimensions in one viz using Tableau, and here comes Tableau Strength :)

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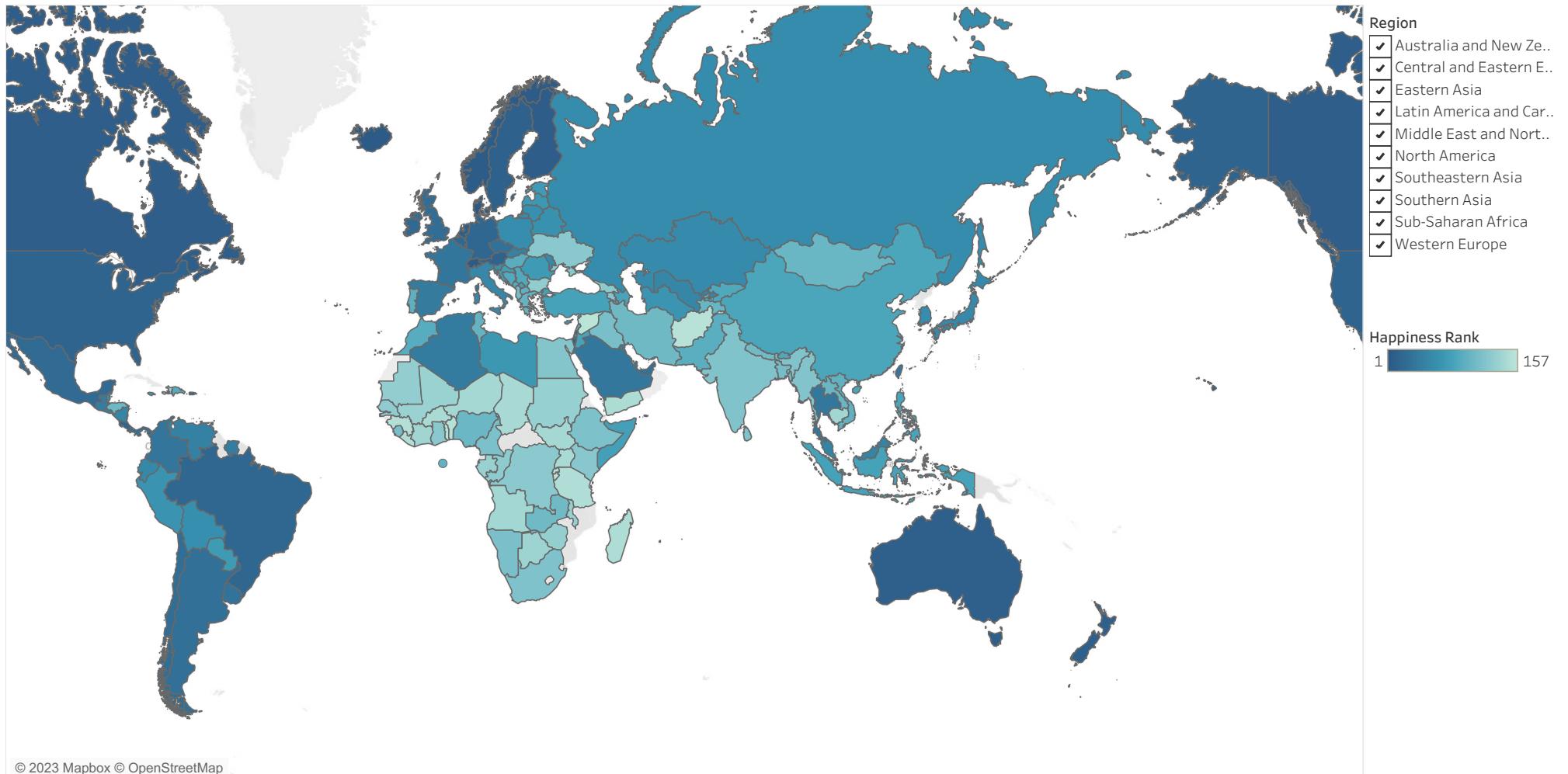
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Country	
Denmark	1
Switzerland	2
Iceland	3
Norway	4
Finland	5
Canada	6
Netherlands	7
New Zealand	8
Australia	9
Sweden	10
Israel	11
Austria	12
United States	13
Costa Rica	14
Puerto Rico	15
Germany	16
Brazil	17
Belgium	18
Ireland	19
Luxembourg	20
Mexico	21
Singapore	22
United Kingdom	23
Chile	24
Panama	25
Argentina	26
Czech Republic	27
United Arab Emirates	28
Uruguay	29
Malta	30
Colombia	21

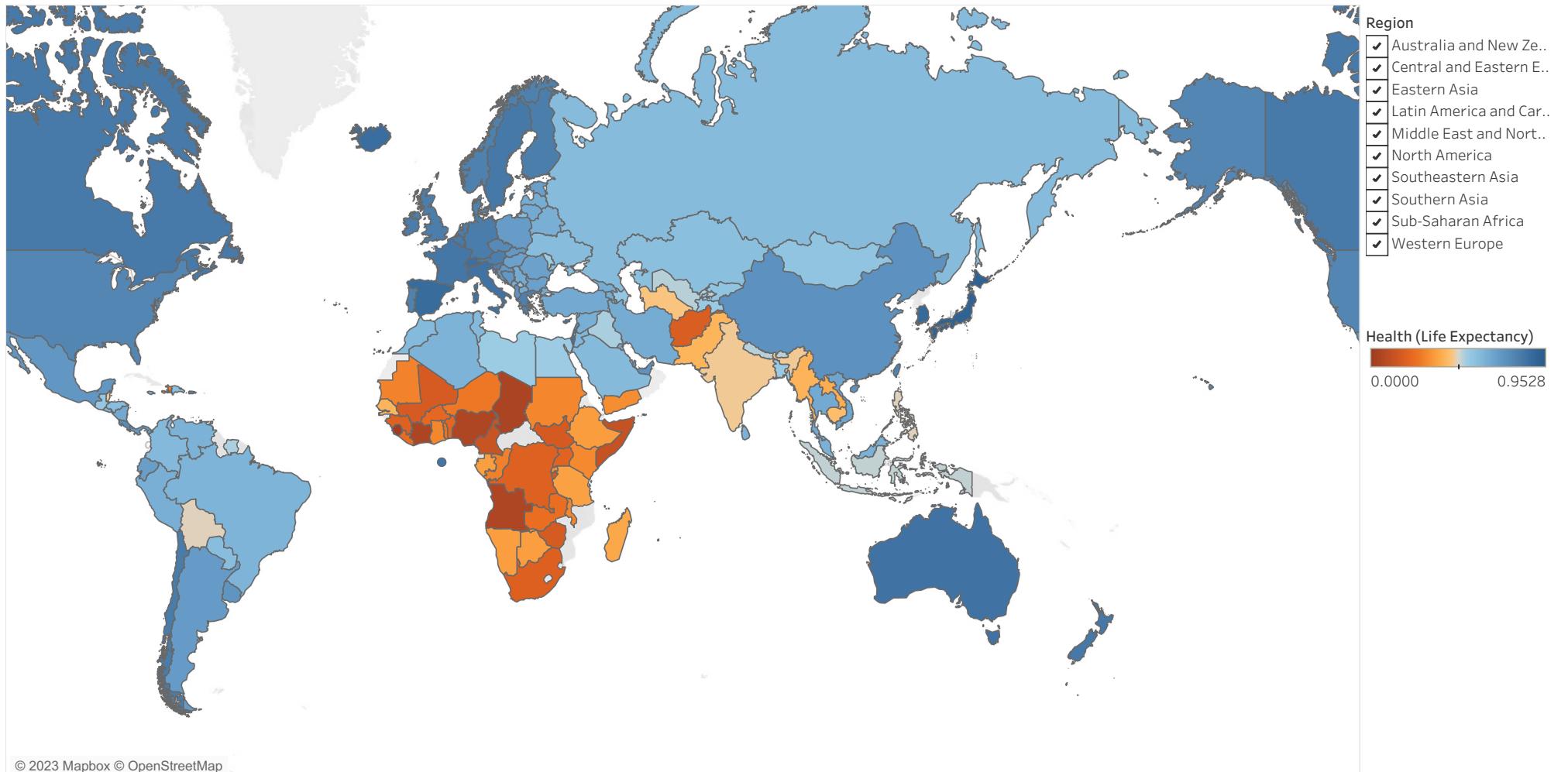
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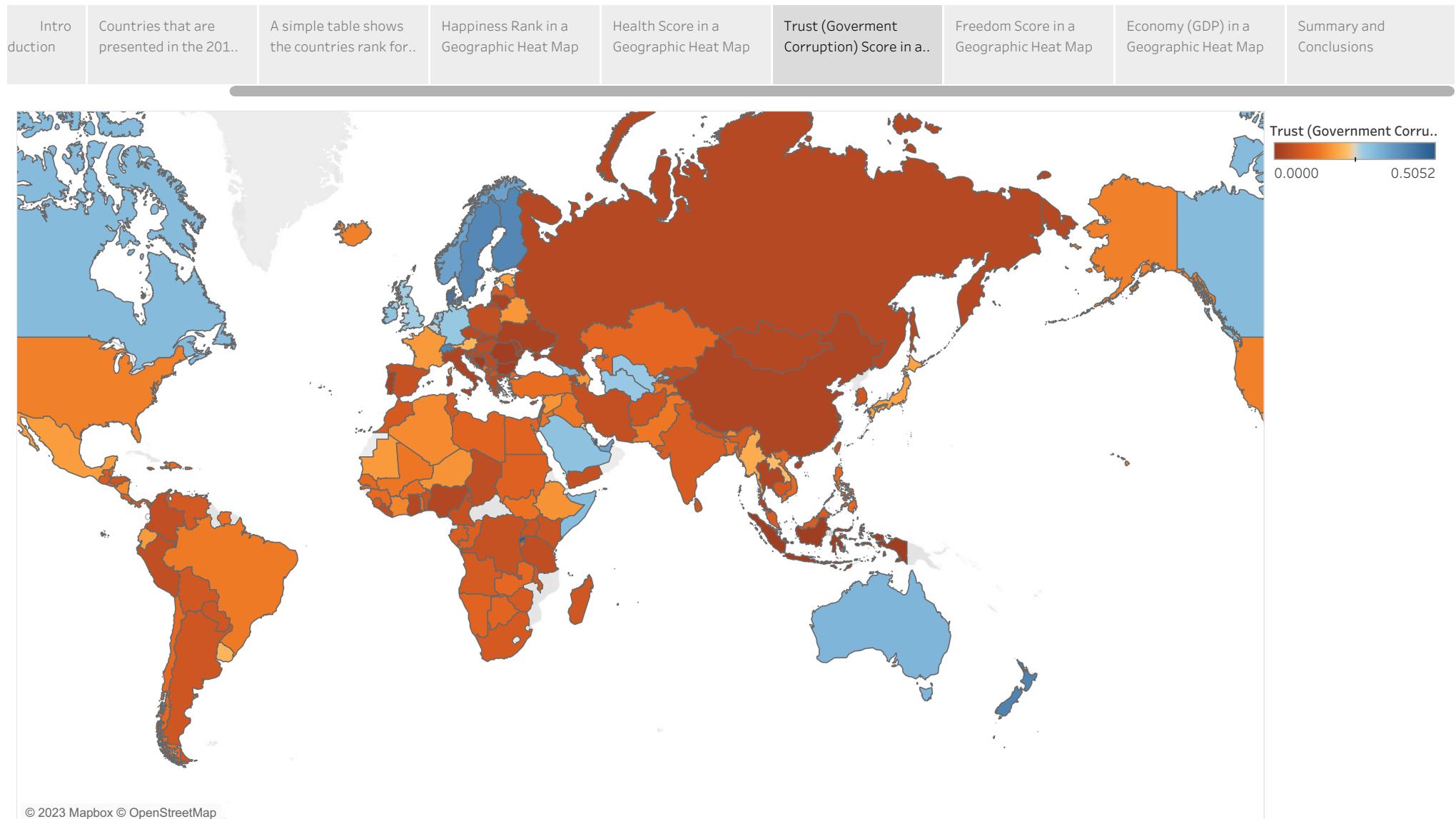


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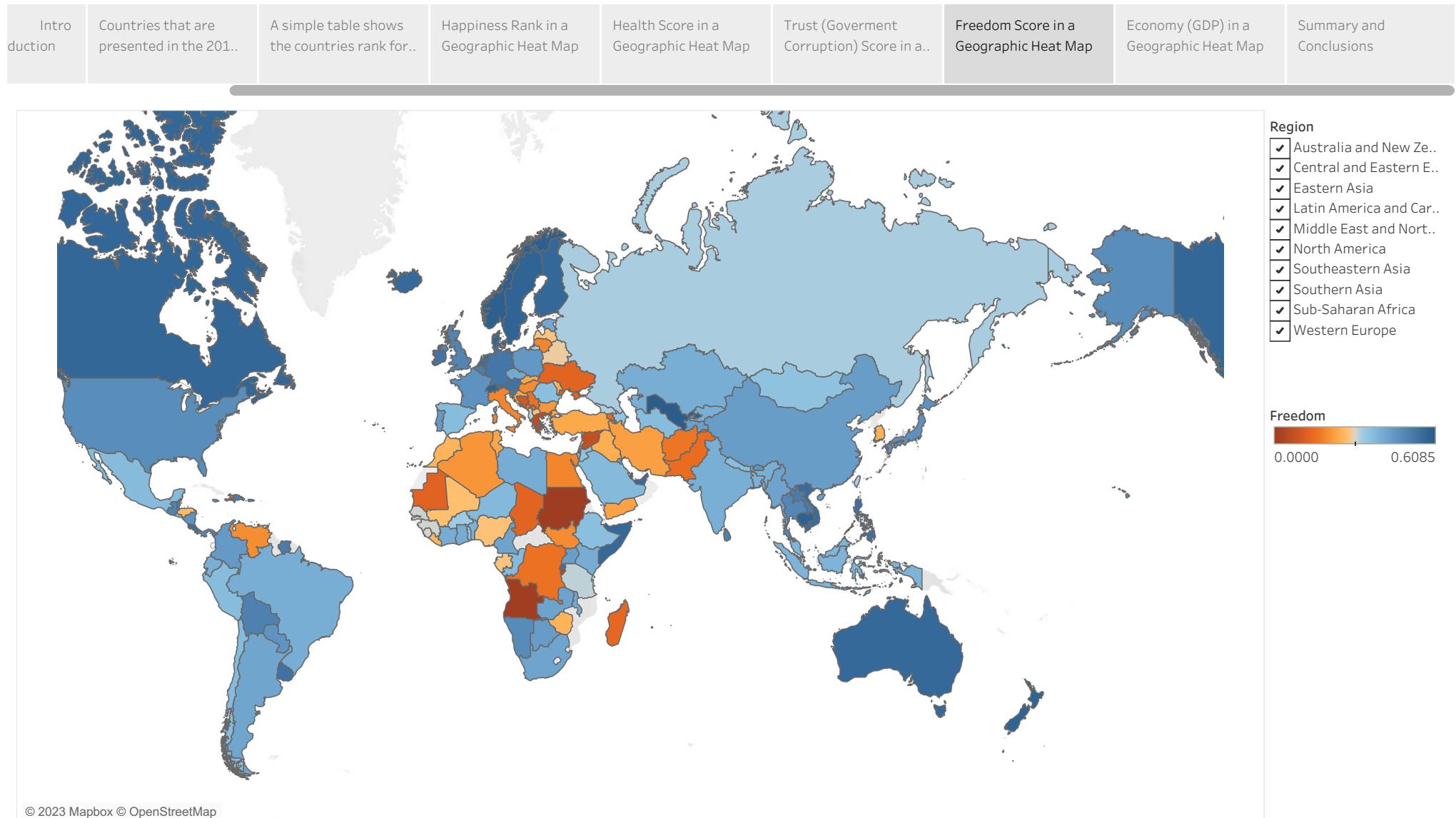
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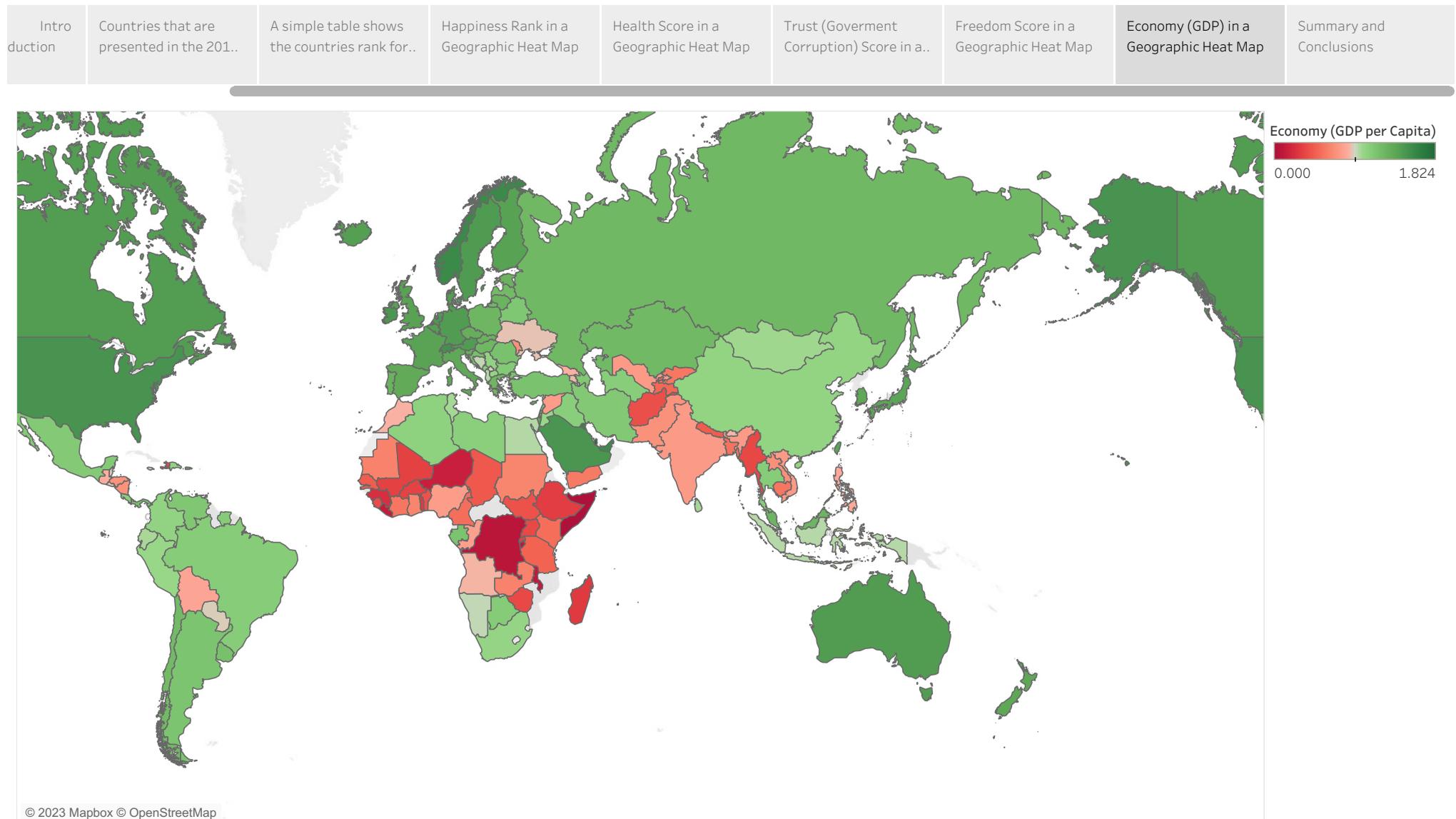
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## Summary and Conclusions

- We can observe that the following features (Health, Economy, and Family) alone are a strong indicator for the Happiness Score. For example:

In terms of health , we found that Syria has much greater value than any other south and central African Countries, even that Syria is Ranked #156 on the list!!

In terms of Economy, we found that India has lower GDP value than other much smaller countries like Jordan for example, but the reason beyond that is that India has more than 1.3 Billion Population, but Jordan are less than 12 Million Populations ending up in a higher GDP value, and it is relatively True , We see that Jordan is in Rank #80 and India is in Rank #118

In terms of Family index, It is perfectly matching with the order of the Countries Ranks, We see that Togo has very low value, and yes it is Ranked #155

- In conclusion, we can say clearly that the correlation matrix is perfectly agree with the visualizations we have ended up, and we can start as a next step after this project to start implementing predicting models and implement Feature Extraction based on these three features to end up with a higher quality report that is reflected to the reality more and more.