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Name of the course : Data Processing   Date : May 31st, 2023
Number of words : 570

Visualization of
The Correlation between the Economy and The Political Instability
In Africa

Research Question: What variable impacts the most the correlation between a prosperous economy and the political stability of African countries?

The self-reinforcing cycle between a flourishing economy and a peaceful country is self-explanatory, however, the extent to which different situations can impact this positive relation is not as obvious. The purpose of this project is to find which variables impact the most (whether positively or negatively) the correlation. What better way to do so than by learning how to visualize data on interactive maps?

I chose to use the GDP of countries as a revealing number on domestic prosperity, luckily, the World Bank proposes a dataset containing records dating back from 1960: https://data.worldbank.org/indicator/NY.GDP.PCAP.CD. To illustrate the political stability of countries, I opted for a minimal standard made up by two categories: war and coup d'état. My political instability score is out of 15 points per decade (the higher, the worse). The maximum numbers of years at war in a decade is, of course, 10 and the maximum coup d'état in a decade between 1950 and nowadays have been 5, which is a lot already. I consider that together they show an unconsolidated political system and reflect a weakened state. The data comes on the one hand from Statista (https://www.statista.com/statistics/1350920/coup-d-etats-world-type/) and on the other hand from the UCDP/PRIO Armed Conflict Dataset of conflicts where at least one actor is a government (https://ucdp.uu.se/downloads/). Checking for accountability of the leaders or length of political mandates seemed to be too specific, and the data harder to find.

I consider taking those scores per decade to be more relevant than per year as they would allow a more complete overview of the status on those countries (a year after a coup, the political stability will not be completely reestablished, for instance).

Sub-questions:
> Is there a higher/smaller correlation per region (map 1): does the geographic location impacts it?
> Is there a higher/smaller correlation per religious areas (map 2): does the tradition/culture/religion strengthens or diminishes the correlation?
> Is there a higher/smaller correlation when the currency is handled abroad: France, England or Germany (map 3&4): what role does the economic imperialism plays in it?
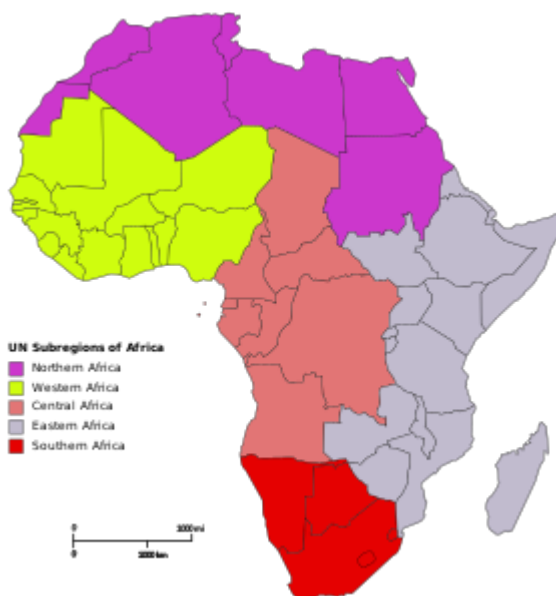
I use the first two visualizations as training before making the third map, which I expect should give the strongest correlations.
- The geographic location of countries could affect their likelihood of having good economic opportunities, such as having a share of the Sahara in their territory; or being next to an Ocean could facilitate trade. Illustrated as different graphs corresponding to different regions in Africa.

- The culture of trade habits and ties behind a religion could be significant in how good or bad countries do economically, I would expect secular states to be more prosperous as strict conservative rules hinder progressive advancement. It will be illustrated by an interactive graph.
- The last, but not least, discriminates on the way the currency is being handled. Some countries have their bills printed in Europe, other make their own, or do not at all. Most importantly, 14 countries that are French post-colonies still use a currency that is attached to France: the CFA Franc (the "C" stood for *colonies* in the past and for *community* or *cooperation* nowadays…).
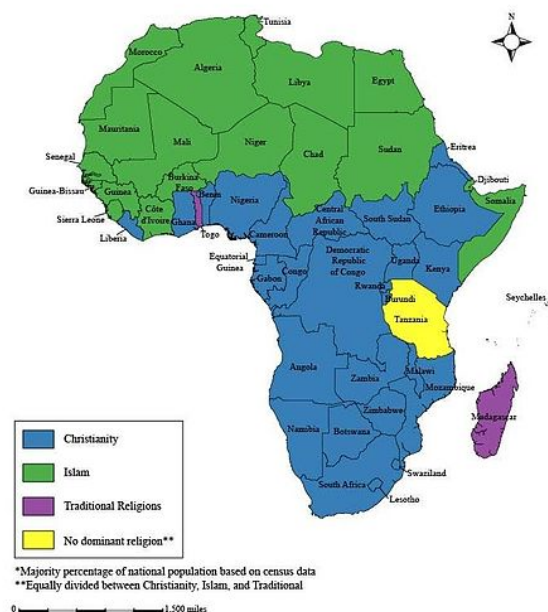
Making the last map demanded a lot of efforts and reading documentation, such as https://docs.bokeh.org/en/latest/, and learned on https://www.learndatasci.com/tutorials/geospatial-data-python-geopandas-shapely/ to make the shape of African countries with geopandas.
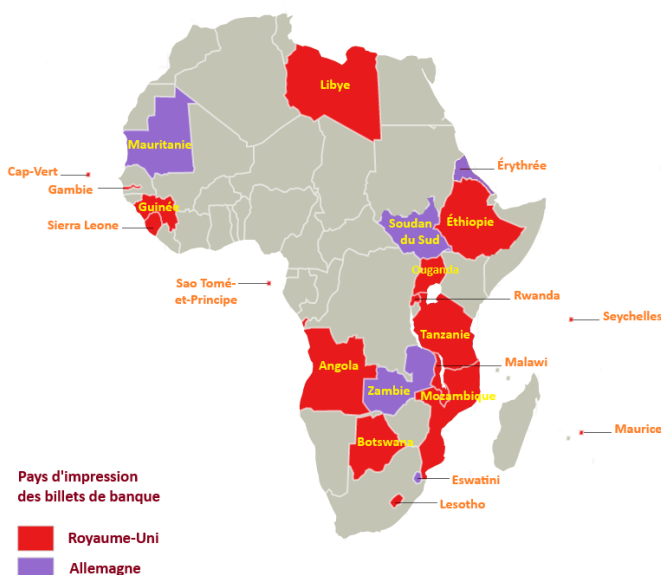
Map 1

Map 2

Map 3

Map 4