



# To run an exploratory analysis of the World Bank Dataset

December 2018

Fillmore Cohort - Team 2 (Sharks)

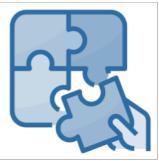
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# Objective

To explore World Bank data focusing on **Central Africa** <sup>1</sup> Region (14 countries)



Flag anomalies in the data set.



Present trends and outliers.



Deliver insights and recommendations to further improve data in the region.

<sup>1</sup> The countries are based on Hult's grouping for exercise purposes and is composed of Cabo Verde, Comoros, Congo, Dem. Rep., Congo, Rep., Cote d'Ivoire, Equatorial Guinea, Ghana, Kenya, Nigeria, Rwanda, Senegal, Sudan, Uganda  
Source: World Bank, 2014





# PESTE Analysis

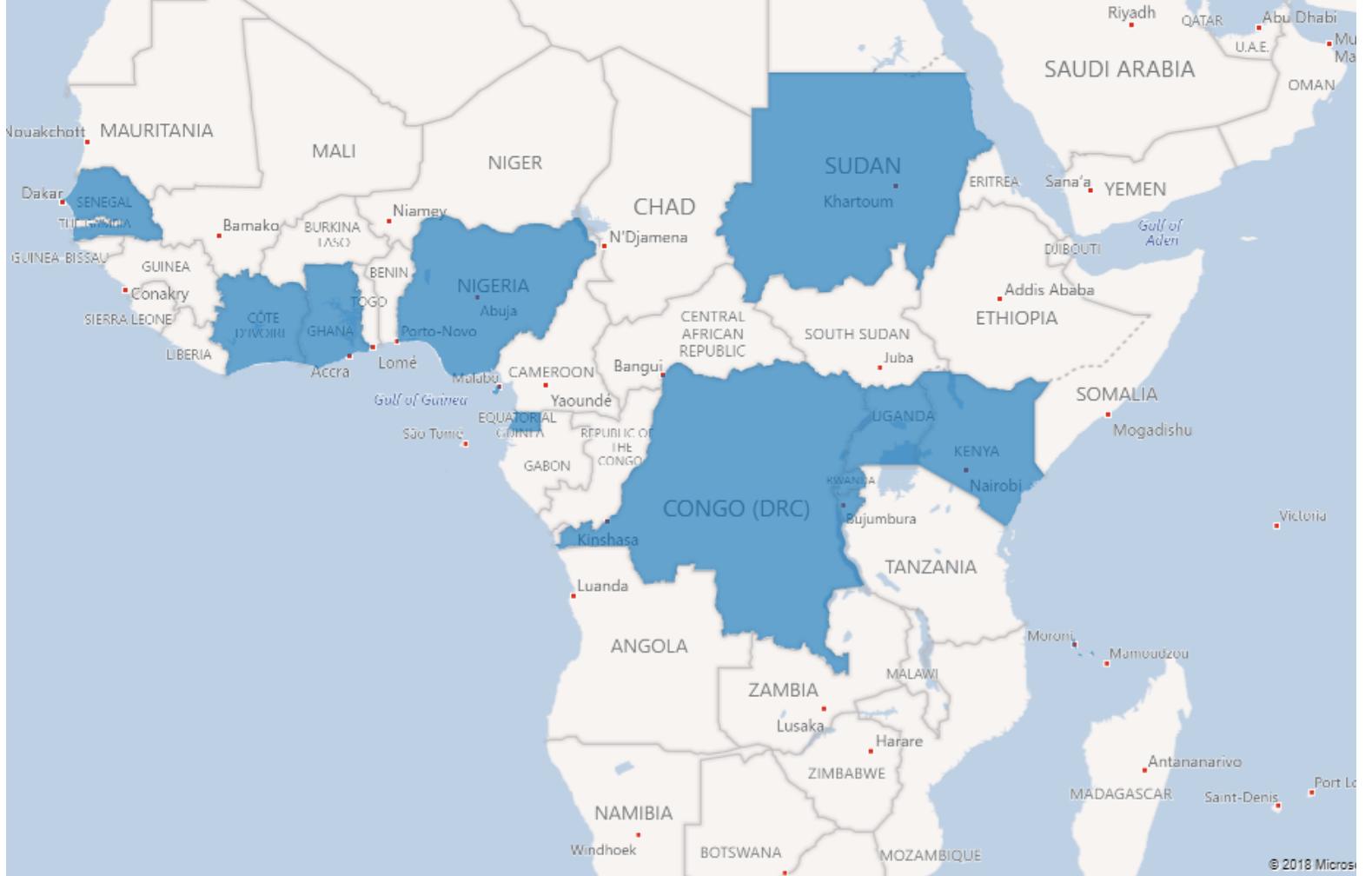
Political

Economic

Social

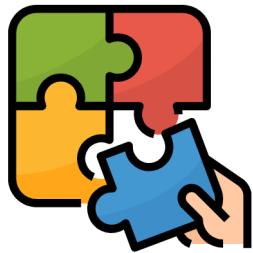
Technological

Environmental



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Source: World Bank, 2014





# Mind the Gap

## Errors and missing values

- A. Corrected typographical errors: Central Africa 1 and CO2\_emissions\_per\_capita
- B. Identified variables with missing values

Indicator	No. of missing values	Method
Adult Literacy rate for ages 15-49	11	Linear Regression
Intentional Homicides per 100k people	10	IHME
Tax Revenue % of GDP	9	Imputation with Median
Incidence of HIV for ages 15-49	1	Imputation with Median
Years of compulsory education	1	Imputation with Median

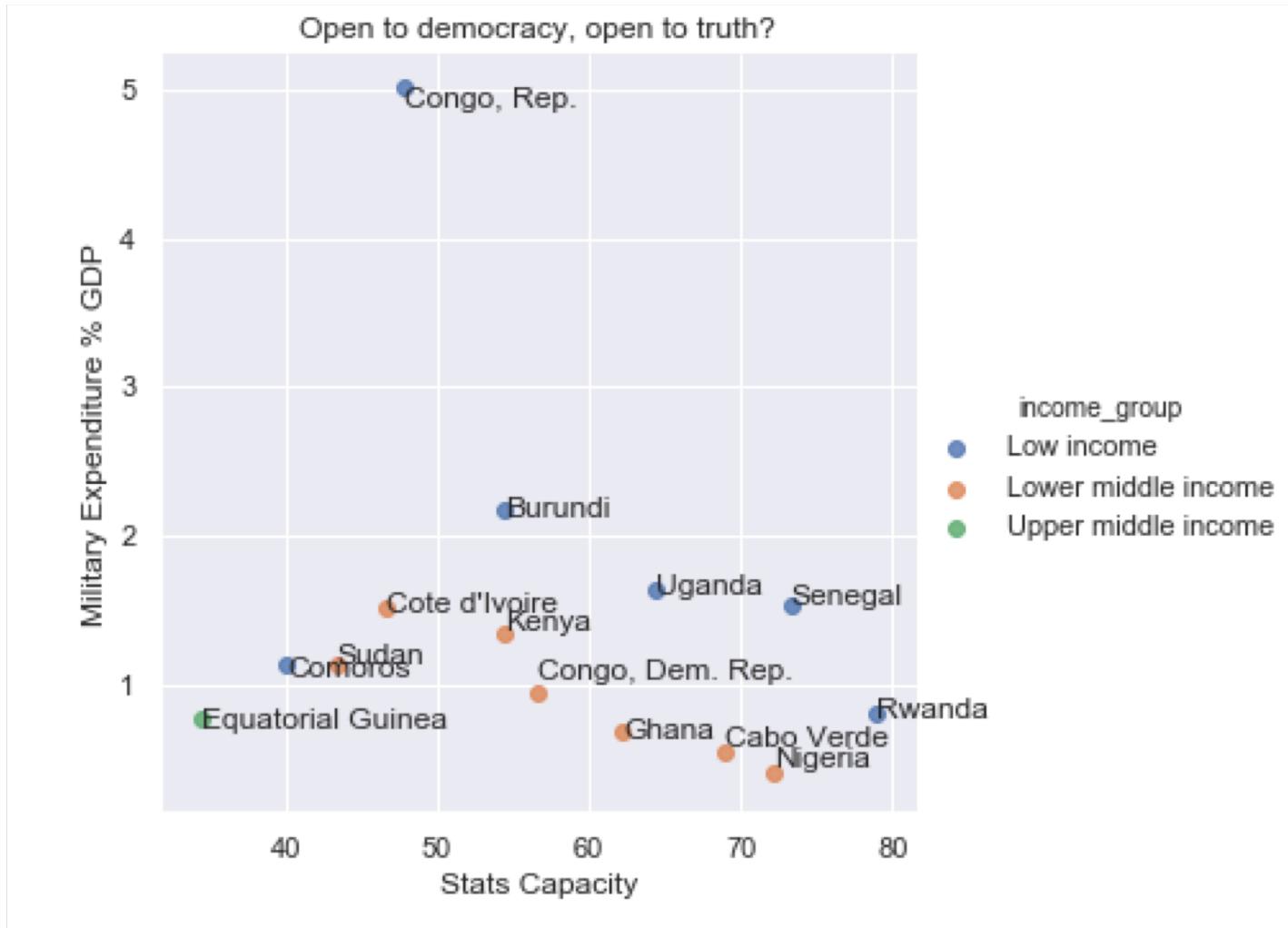
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Source: World Bank, 2014





# Political Indicators

## Significant Trends and Outliers



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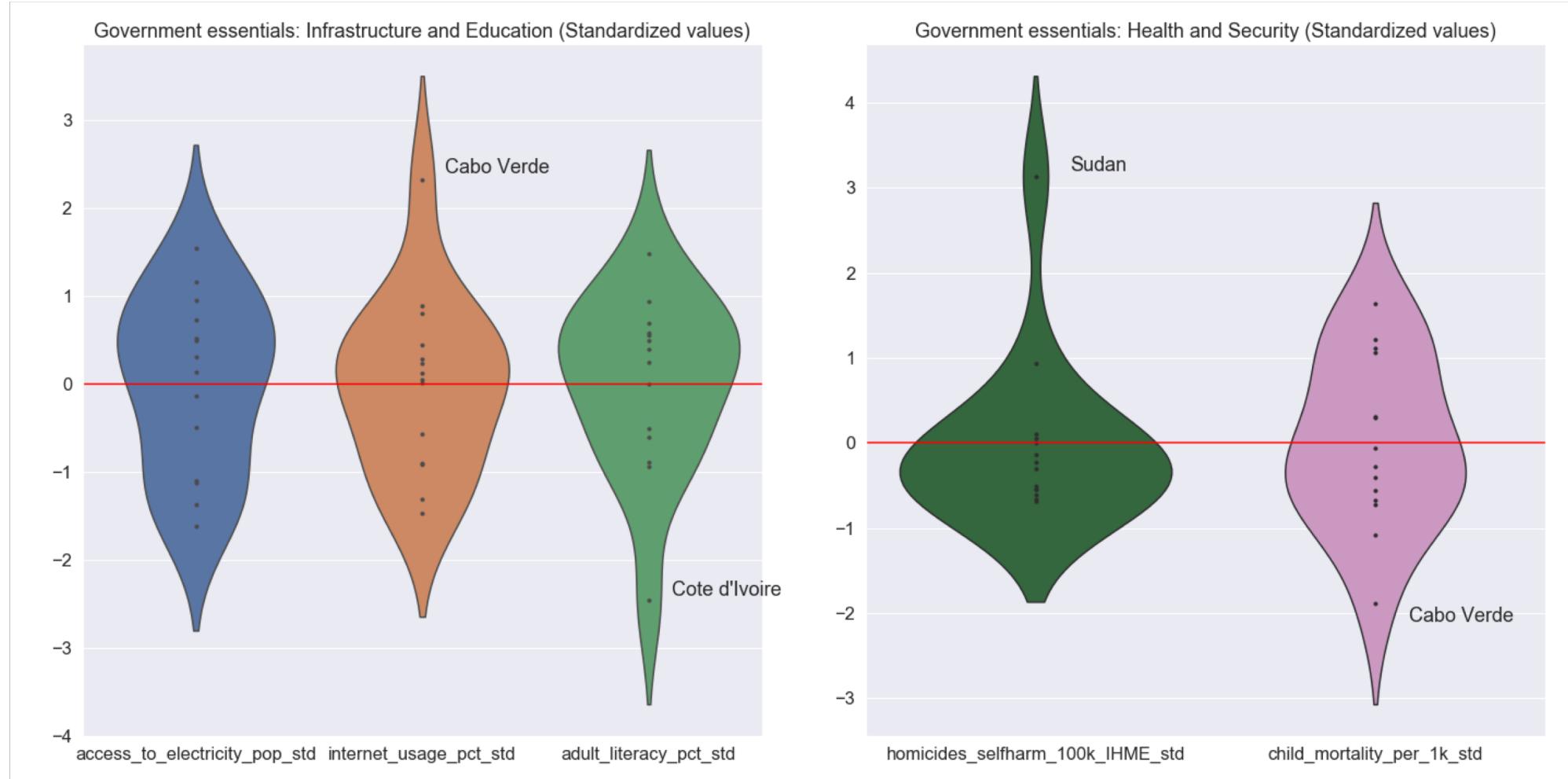
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# Political Indicators

## Significant Trends and Outliers



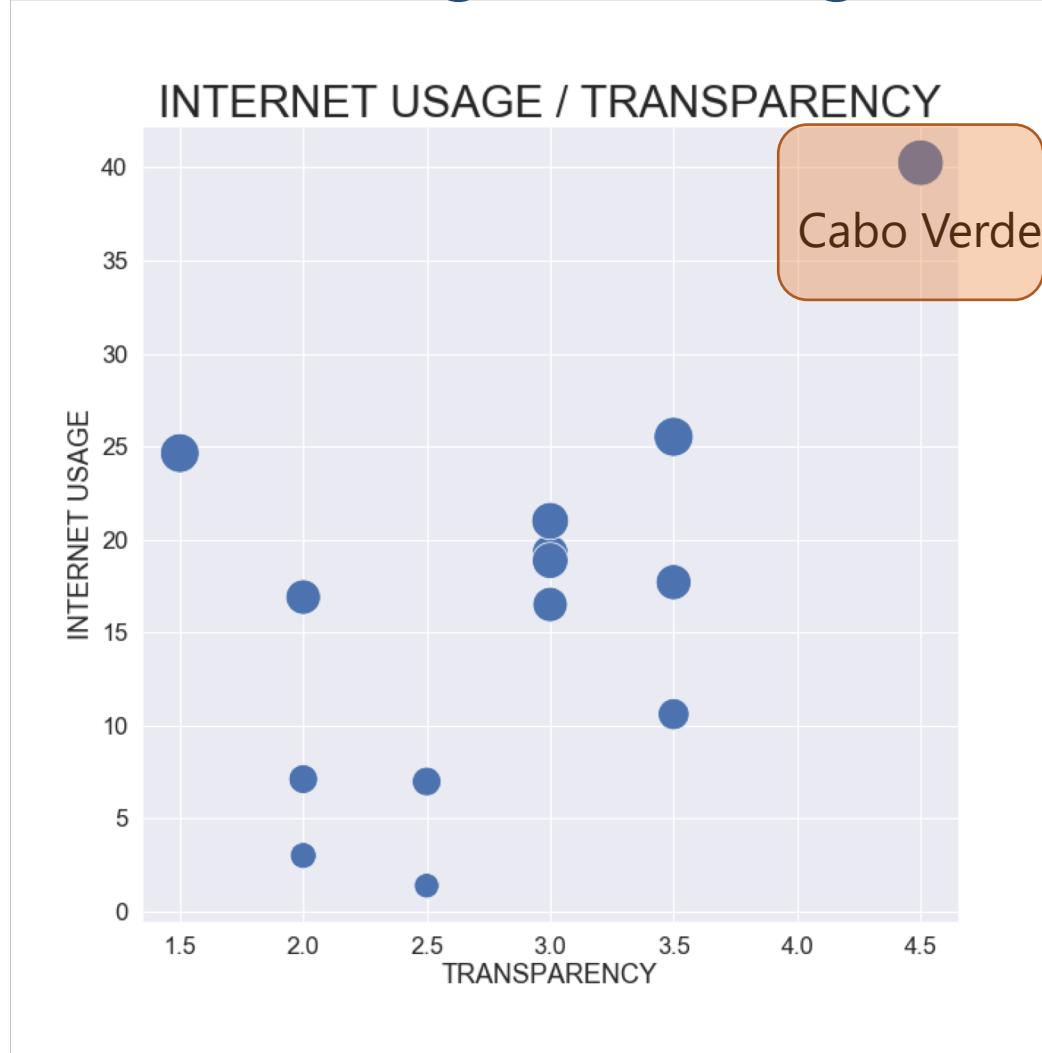
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Source: World Bank, 2014





# Economic Indicators

# Changes in Foreign Investment = Technology



Top country in the region in terms of Internet Usage

This lead our analysis forward to a very interesting point



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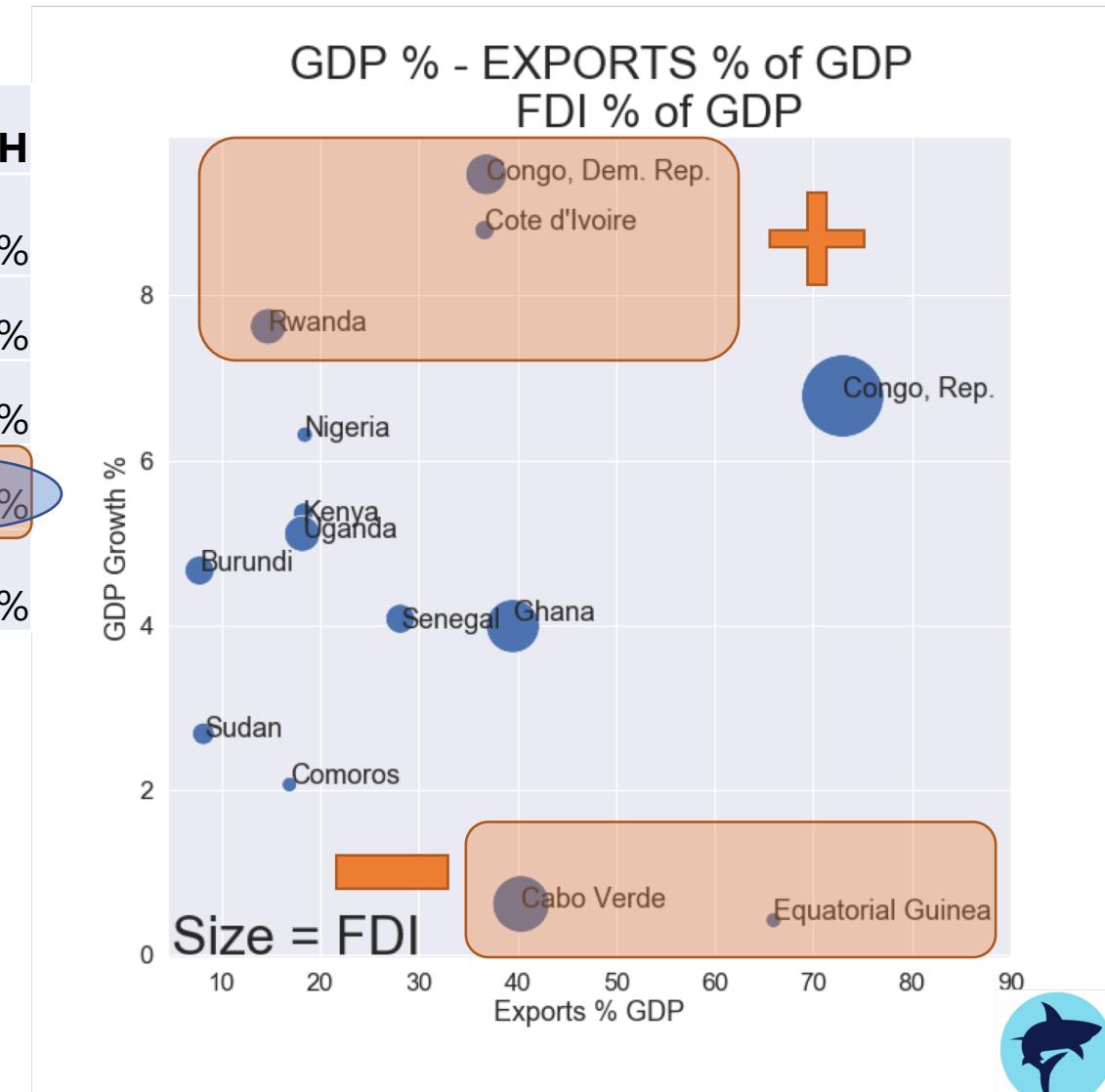
# Economic Indicators

Assumption = FDI + EXPOS = BIGGER GDP

Country Name	EXPOS % of GDP	FDI % of GDP	GDP % GROWTH
Congo, Dem. Rep.	36.83 %	5.13 %	9.47 %
Cote d'Ivoire	36.66 %	1.24 %	8.79 %
Rwanda	14.72 %	3.93 %	7.62 %
Cabo Verde	40.36 %	9.72 %	0.61 %
Equatorial Guinea	65.96 %	0.77 %	0.41 %

Change in the destination of FDI<sup>2</sup>:

- **Before 2012:** to **tourism & Real State (77%)**, and to **IT and Communications (11%)**,
- **After 2012:** to **tourism & Real State (36%)** and to **IT and Communications (43%)**.



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Source: World Bank, 2014

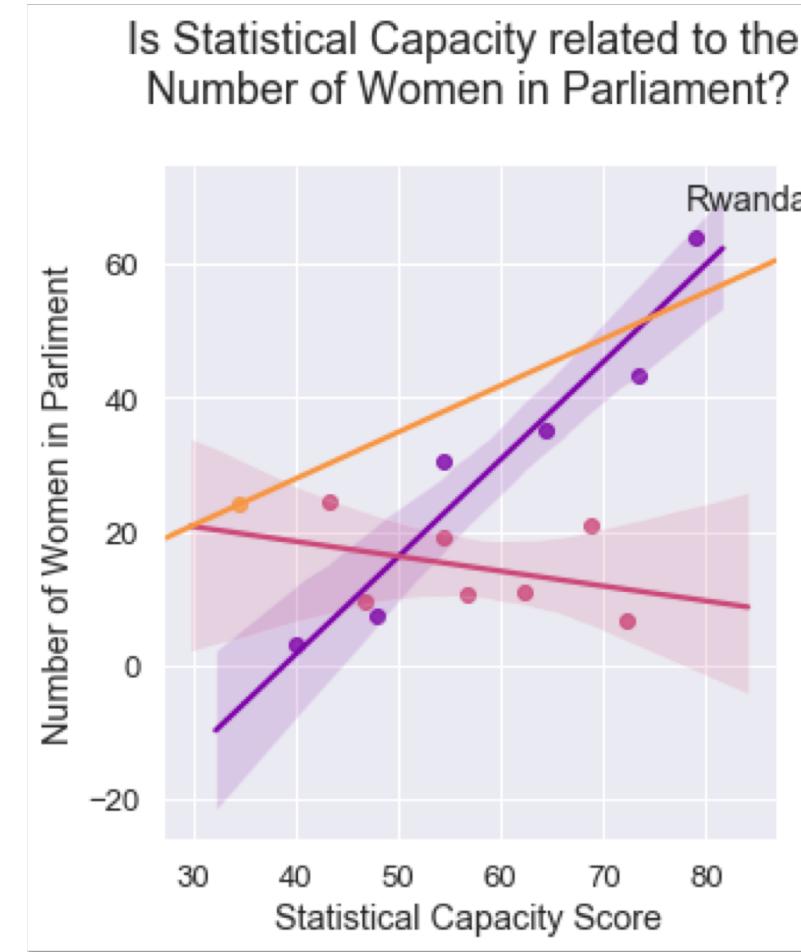
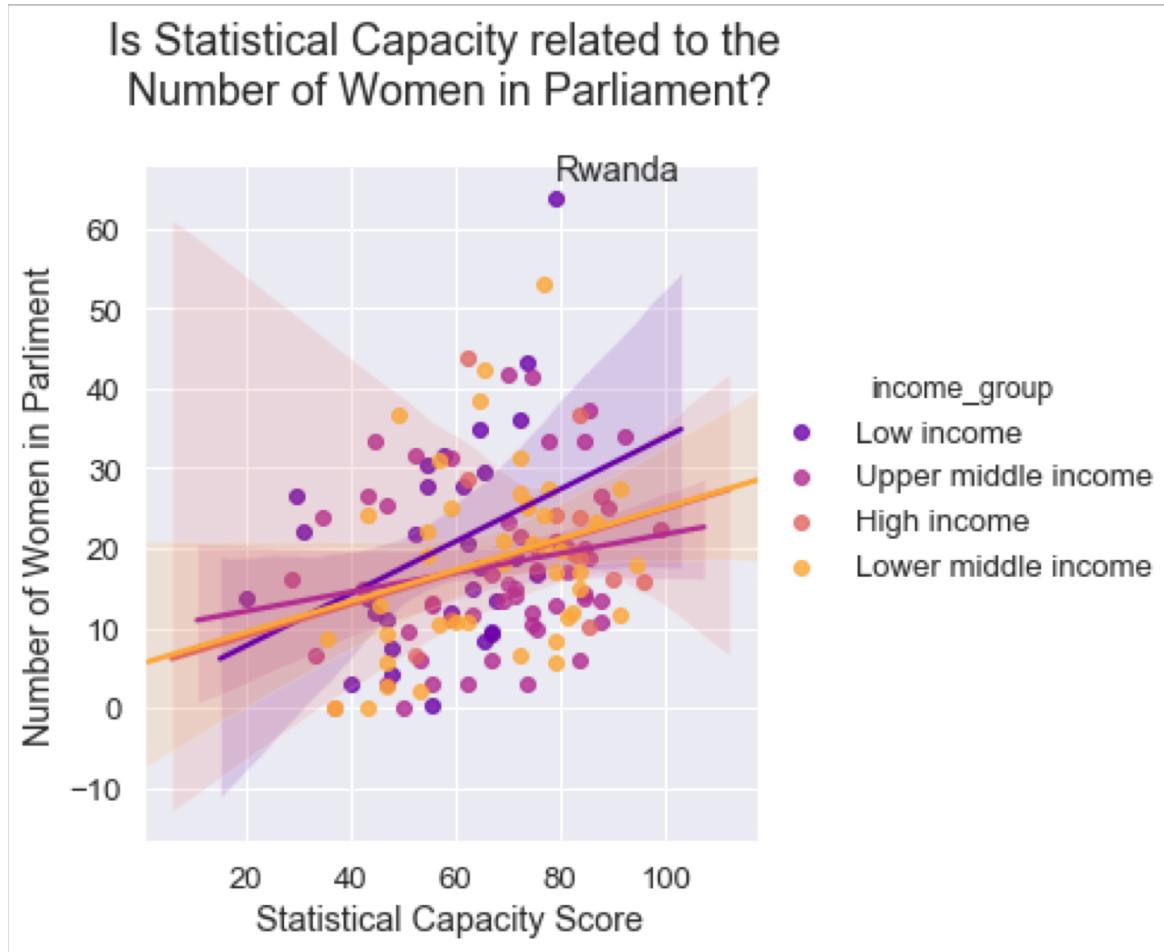
<sup>2</sup> Source: US. Dep. of State





# Social Indicators

Do women in parliament impact statistical capacity?



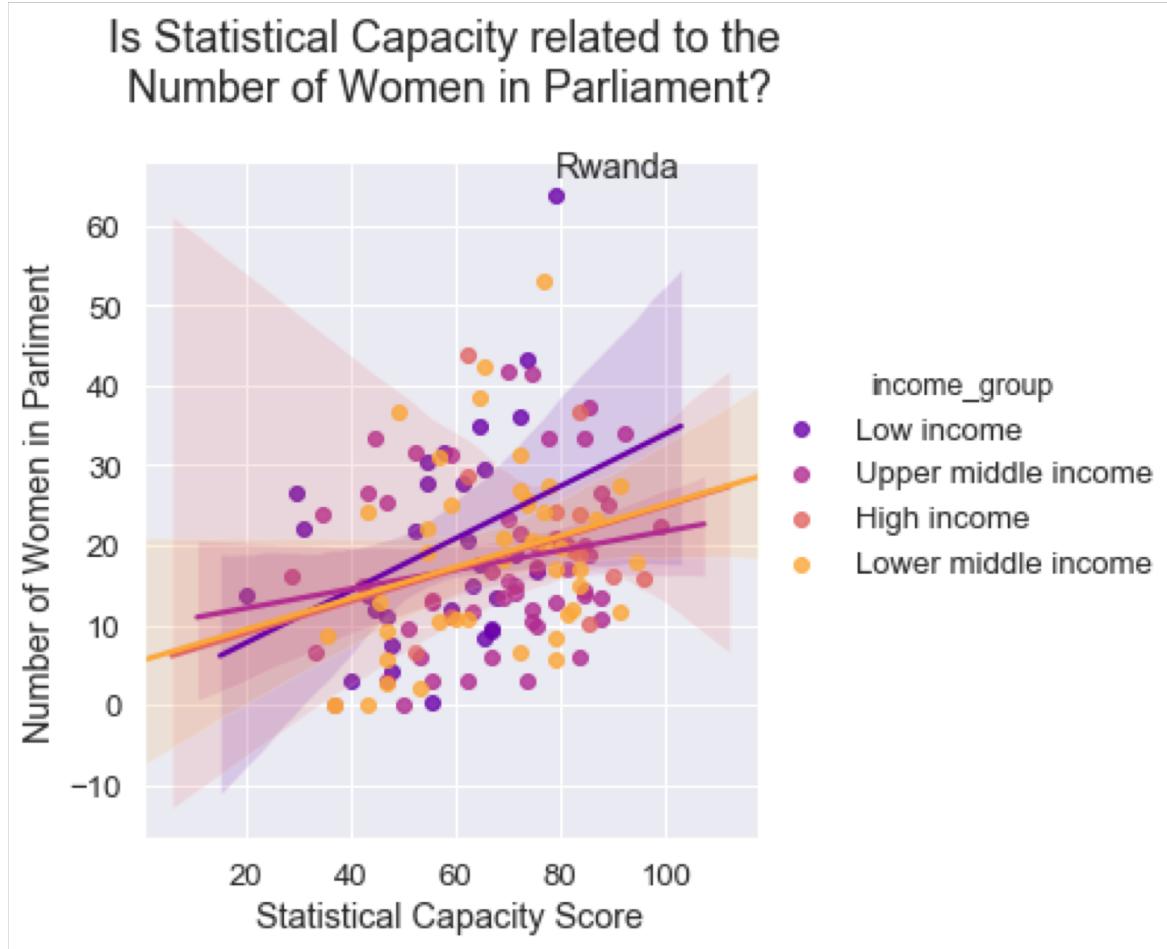
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Source: World Bank, 2014





# Social Indicators

## Why is Rwanda an outlier?



- Rwanda has the highest value for the number of women in parliament in the dataset.
- Features in the UN list of 48 least developed nations<sup>2</sup>.
- 86% female labor force participation – rooted in the country's devastating genocide in 1994

### Why does all this matter?

Research suggests that when women are in politics, they put important but otherwise neglected issues on the table.

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Source: World Bank, 2014

2 Source: United Nations Conference on Trade and Development

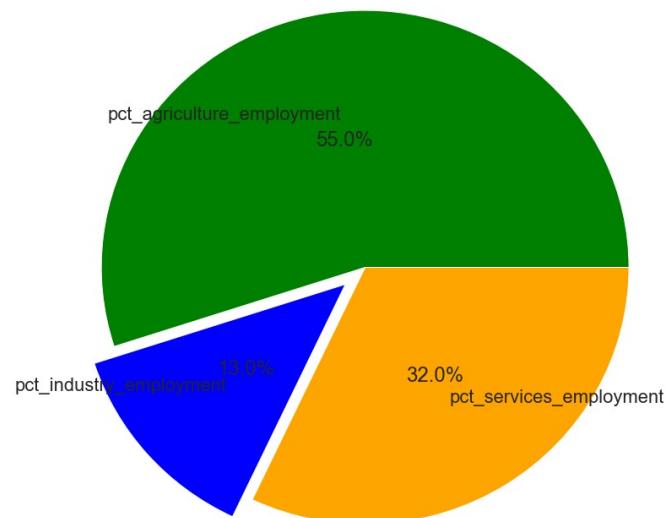




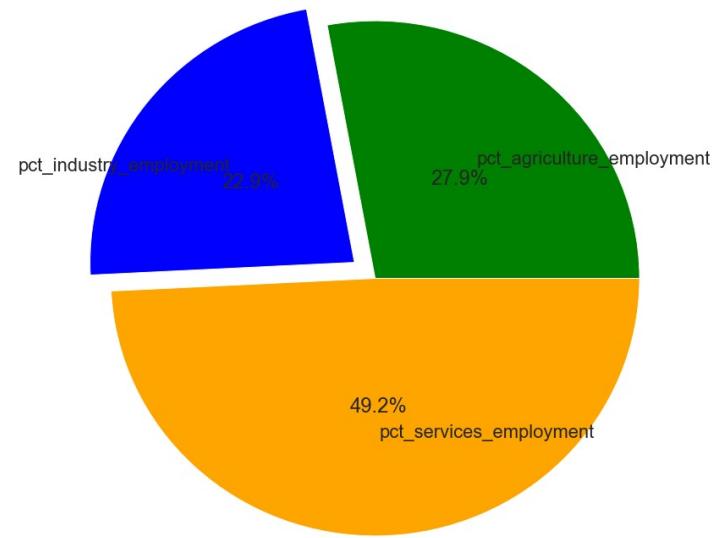
# Technology Indicators

## Significant Trends and Outliers

Pct\_of the three sectors(CA)



Pct\_of the three sectors(world)



Proportion of employees in the three sectors

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Source: World Bank, 2014

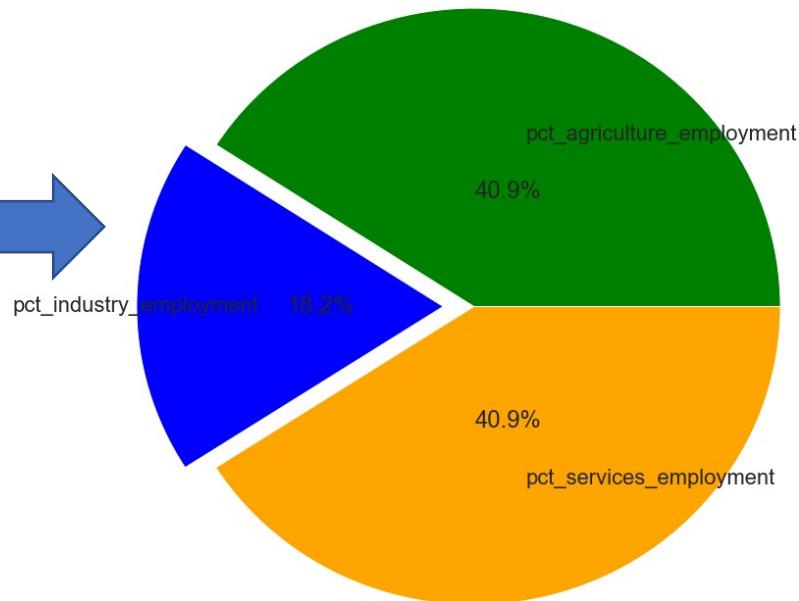




# Technology Indicators

## Significant Trends and Outliers

Pct\_of the three sectors(Congo)



**the labor force in central Africa serves agriculture**

**Imported production machines are still needed to meet the basic needs of the people**

**On the whole, Central Africa have a low level of technology**

**Major industries in this region is concentrated in oil extraction and logging**

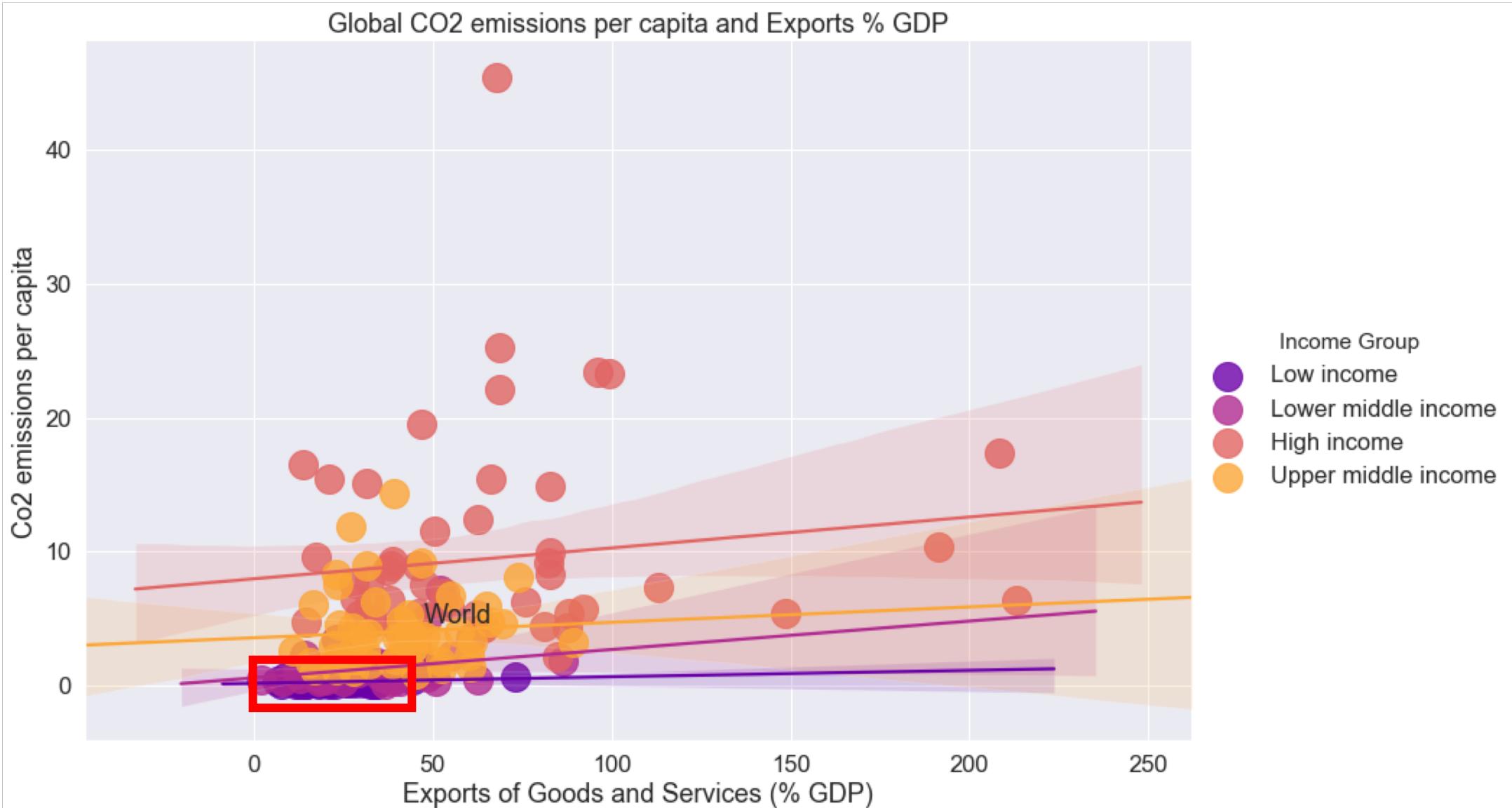
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# Environment

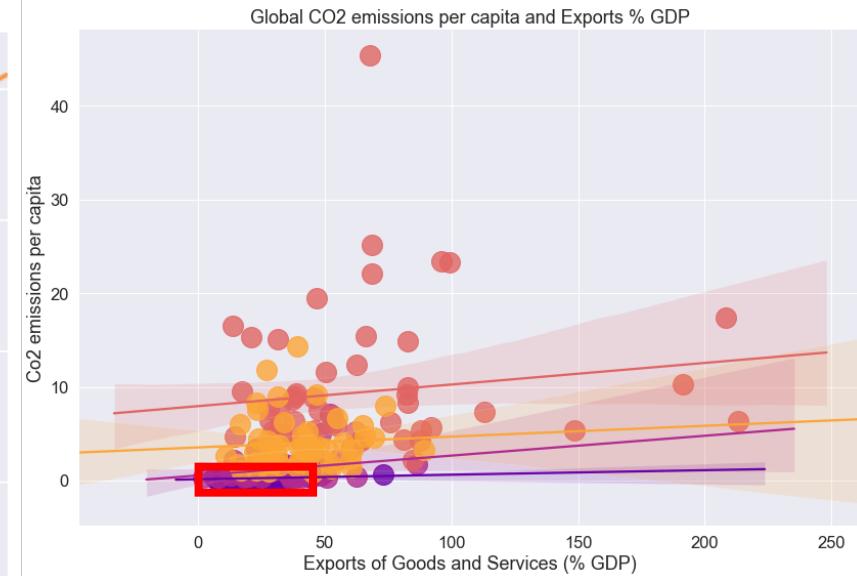
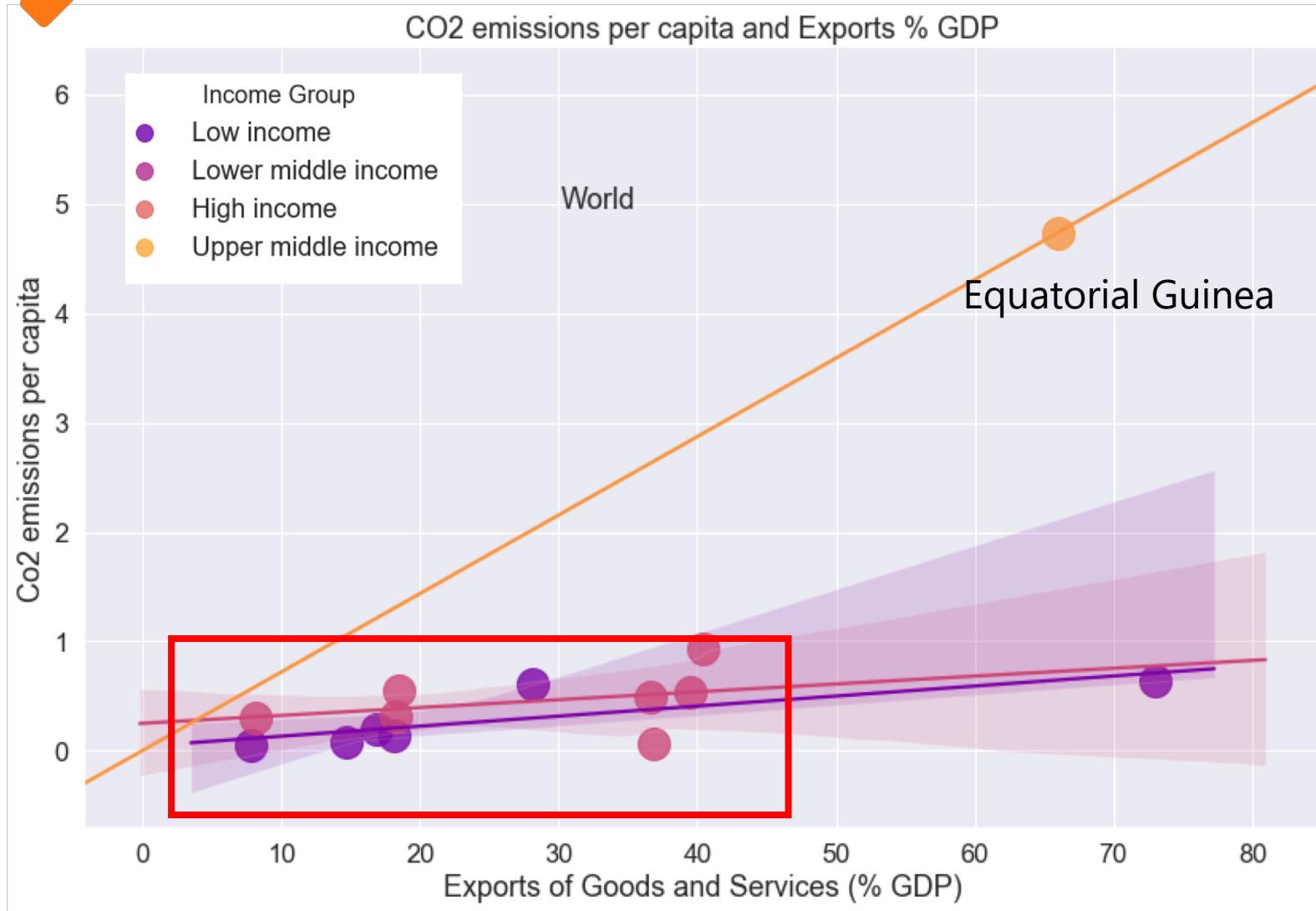
Is economic development a driver of per capita carbon emissions?





# Environment

## Is economic development a driver of per capita carbon emissions?



- There is 0.62 correlation between CO2 emissions and exports of goods and services as % of GDP in CA 1 Region.
- The region's CO2 emissions per capita is relatively low but Equatorial Guinea, the only upper middle income country in the region, is significantly higher than the rest.

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# What's Next?

Additional data and analysis needs

- **Political** – Study data related to feedback from the public about policies
- **Economic** – Follow the GDP (2016 and 2017):  $\approx 3.9$  trend in Cabo Verde and further analysis of FDI in Cote d'Ivoire and Nigeria
- **Social** – Look deeper into the policies in low-income countries to see if there is a similar trend in statistical capacity
- **Technological** – keep tracking the investment and export
- **Environmental** – In-depth analysis of energy sources and consumption

