

WITH WHOM DOES BRAZIL MOST RESEMBLE IN ITS GLOBAL RELATIONS?

Using import and
export numbers

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THE IMPORTANCE OF
INTERNATIONAL TRADE FOR
BRAZIL



THE DIVERSITY OF BRAZIL'S
TRADE PARTNERS



ANALYSIS OBJECTIVE:
IDENTIFYING PATTERNS IN
COMMERCIAL RELATIONSHIPS

DATASET

- Made available on [Kaggle](#), sourced by HELP International

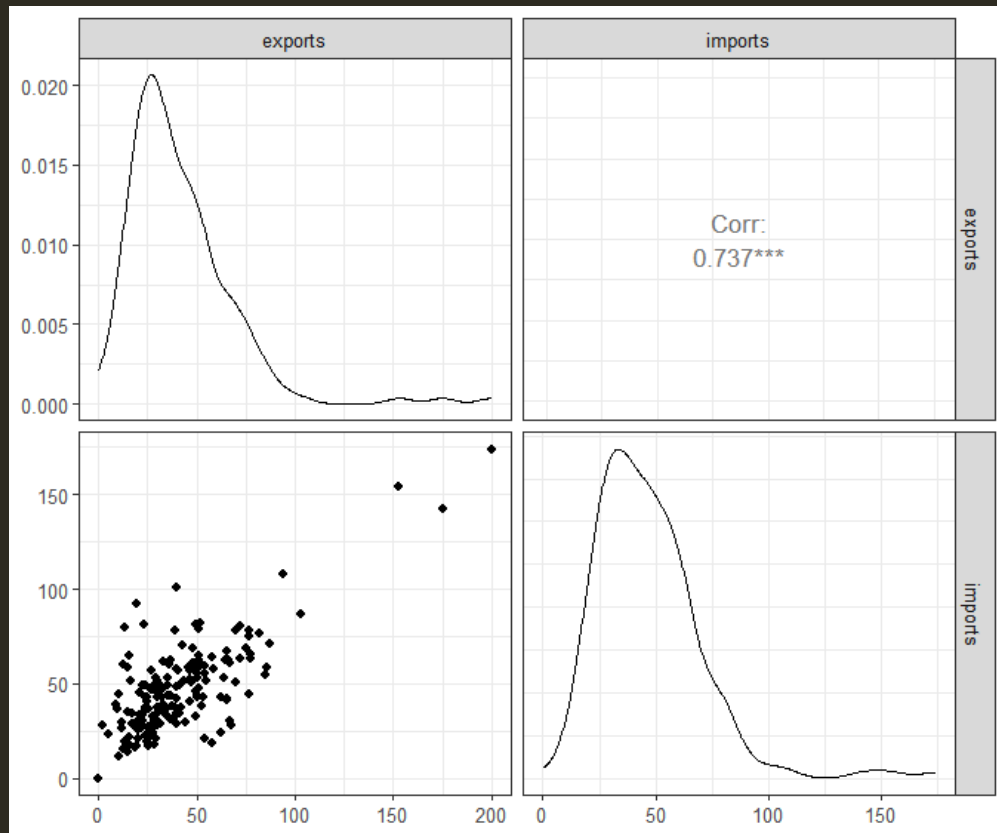
country	Name of the country
child_mort	Death of children under 5 years of age per 1000 live births
exports	Exports of goods and services per capita. Given as %age of the GDP per capita
health	Total health spending per capita. Given as %age of GDP per capita
imports	Imports of goods and services per capita. Given as %age of the GDP per capita
Income	Net income per person
Inflation	The measurement of the annual growth rate of the Total GDP
life_expec	The average number of years a new born child would live if the current mortality patterns are to remain the same
total_fer	The number of children that would be born to each woman if the current age-fertility rates remain the same.
gdpp	The GDP per capita. Calculated as the Total GDP divided by the total population.

METHODS

- Aggregation Index: Import and Export Numbers
- Clustering performed using hierarchical clustering
- Decision on number of clusters made using the Elbow method
- Analysis

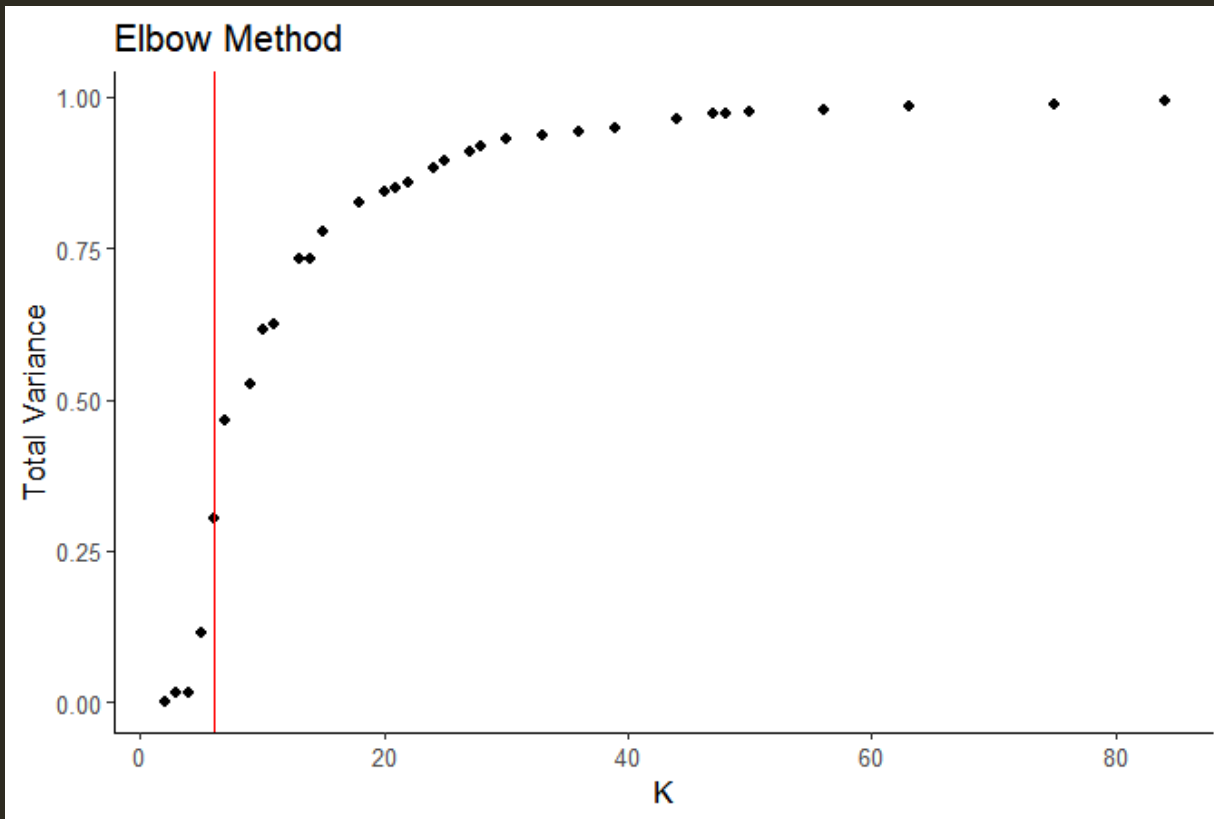
$$d(x, y) = \sqrt{\sum_{i=1}^n (y_i - x_i)^2}$$

IMPORTS AND EXPORTS

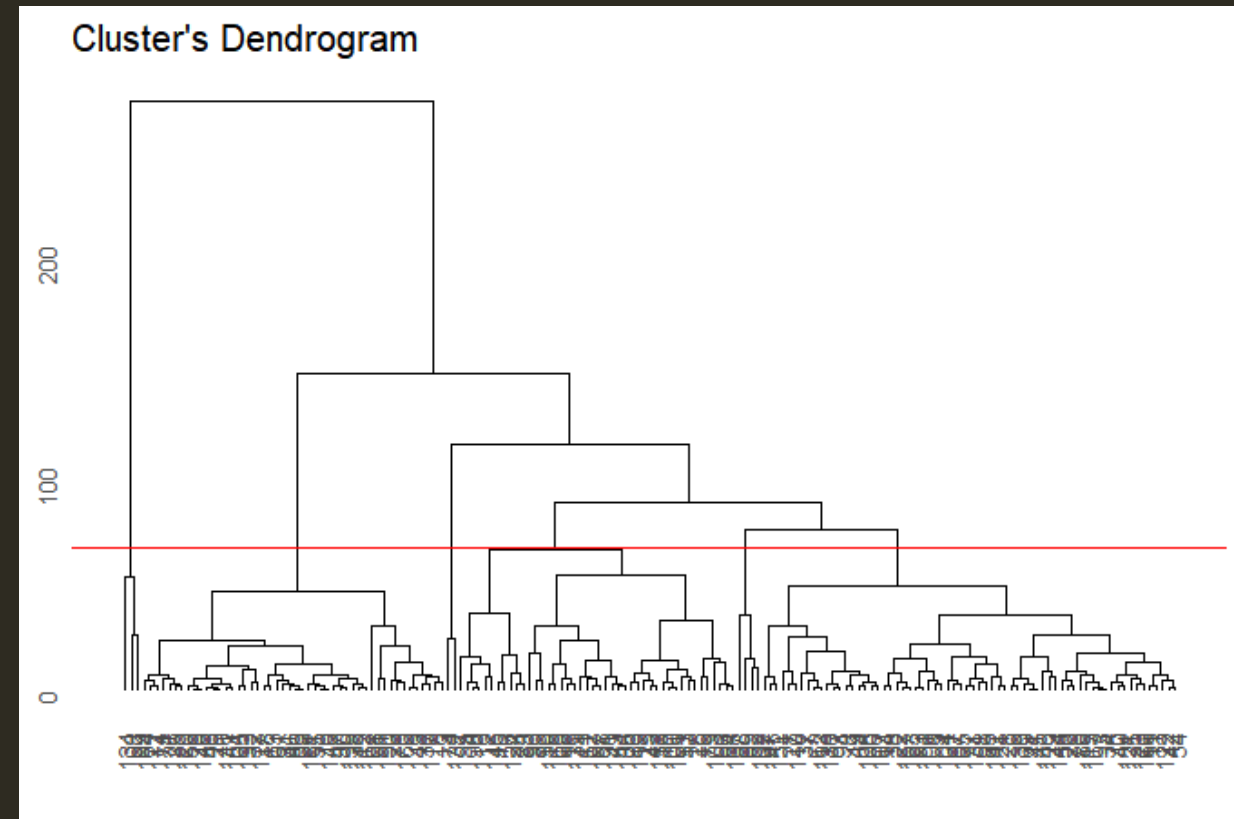


- Strongly correlated
- Positive and linear association
- Right asymmetric distribution

- Defining the number of clusters



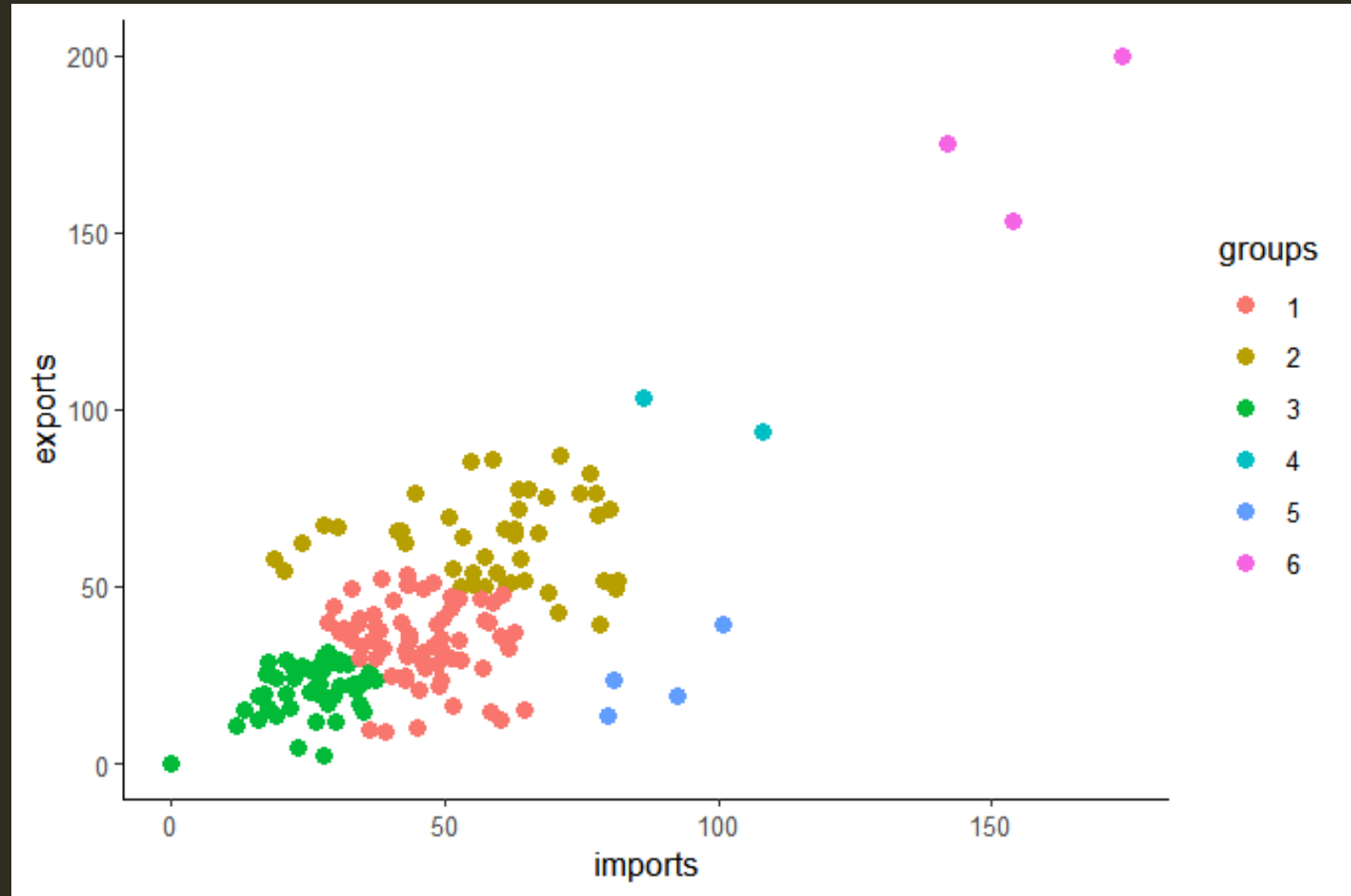
- Clustering with complete linkage



HIERARCHICAL CLUSTERING

CLUSTERS

- Six clusters
- Brazil included in Group 3 with Argentina, Australia, Canada, China, Colombia, France, all BRICS countries, and 39 other countries.



CASE DISCUSSION

- Clusterization can be used to identify similar profiles, optimizing various processes, such as:
 - Identifying potential customers, better directing the marketing team
 - Identifying a better fit profile for a job vacancy, optimizing the hiring process
 - In our case, identifying a country similar to ours in order to establish commercial partnerships with them
 - Organizing something that is not properly separated

REFERENCES

- [Gov Agency](#)
- [Industry Portal](#)
- [Brazilian Governament](#)
- [Codes](#)

THANK YOU

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