

CLUSTERING ASSIGNMENT

BY ROHIT SHARMA

HELP International is an international humanitarian NGO that is committed to fighting poverty and providing the people of backward countries with basic amenities and relief during the time of disasters and natural calamities. It runs a lot of operational projects from time to time along with advocacy drives to raise awareness as well as for funding purposes.

After the recent funding programmes, they have been able to raise around \$ 10 million. Now the CEO of the NGO needs to decide how to use this money strategically and effectively. The significant issues that come while making this decision are mostly related to choosing the countries that are in the direst need of aid.

PROBLEM STATEMENT

OBJECTIVE

- The Requisite is :-
- To categories the countries using some socio-economic and health factors that determine the overall development of the country.
- To suggest the countries which the CEO needs to focus on the most.

DATA PROCESSING & QUALITY CHECK

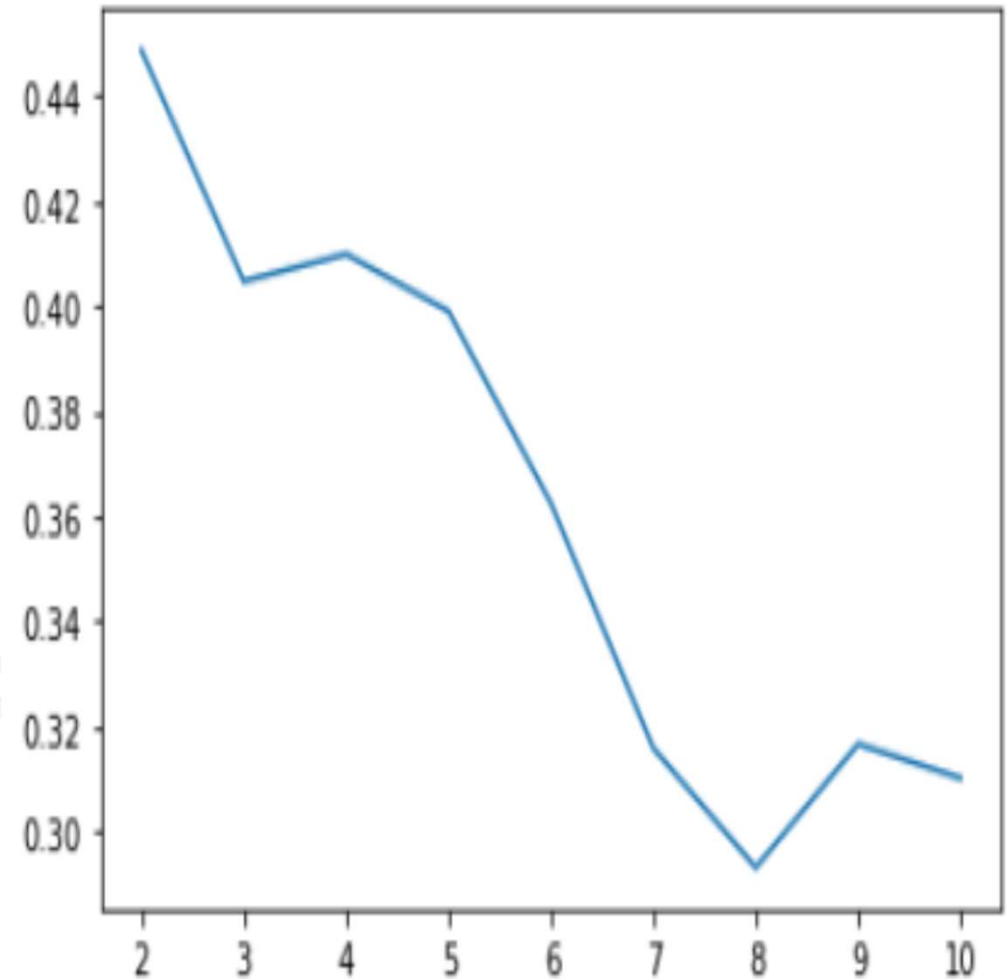
- It was found that no null values.
- There were also no duplicate value for the country.
- Then we have done EDA and Outlier treatment on the data.
- And after EDA & Outlier treatment we have checked the cluster tendency by using:- Hopkin's Test.
- The data was standardized by using Scaling for further Clustering process.

SILHOUETTE SCORE

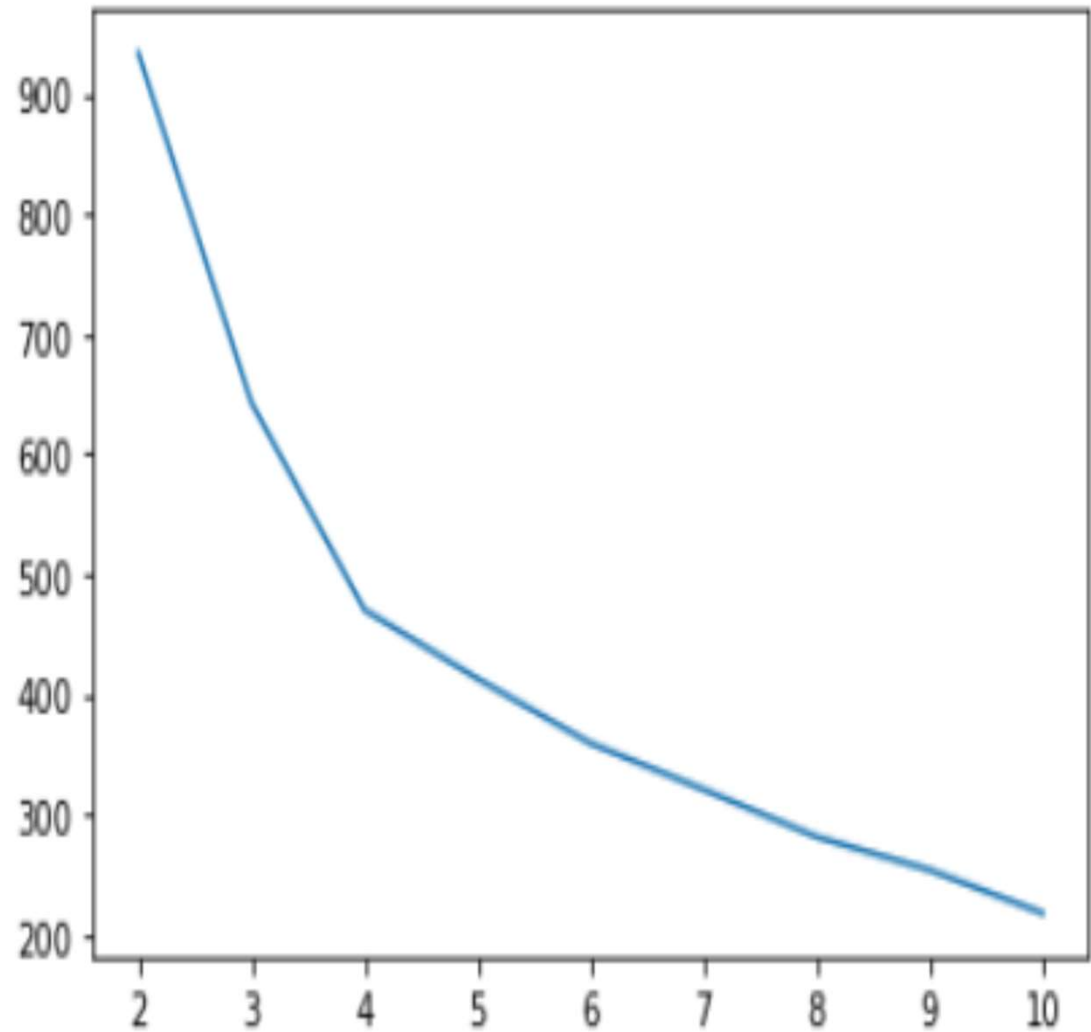
The Value of the silhouette score range between -1 to 1.

A Scorer closer to 1: The data point is very similar to other data points in the cluster.

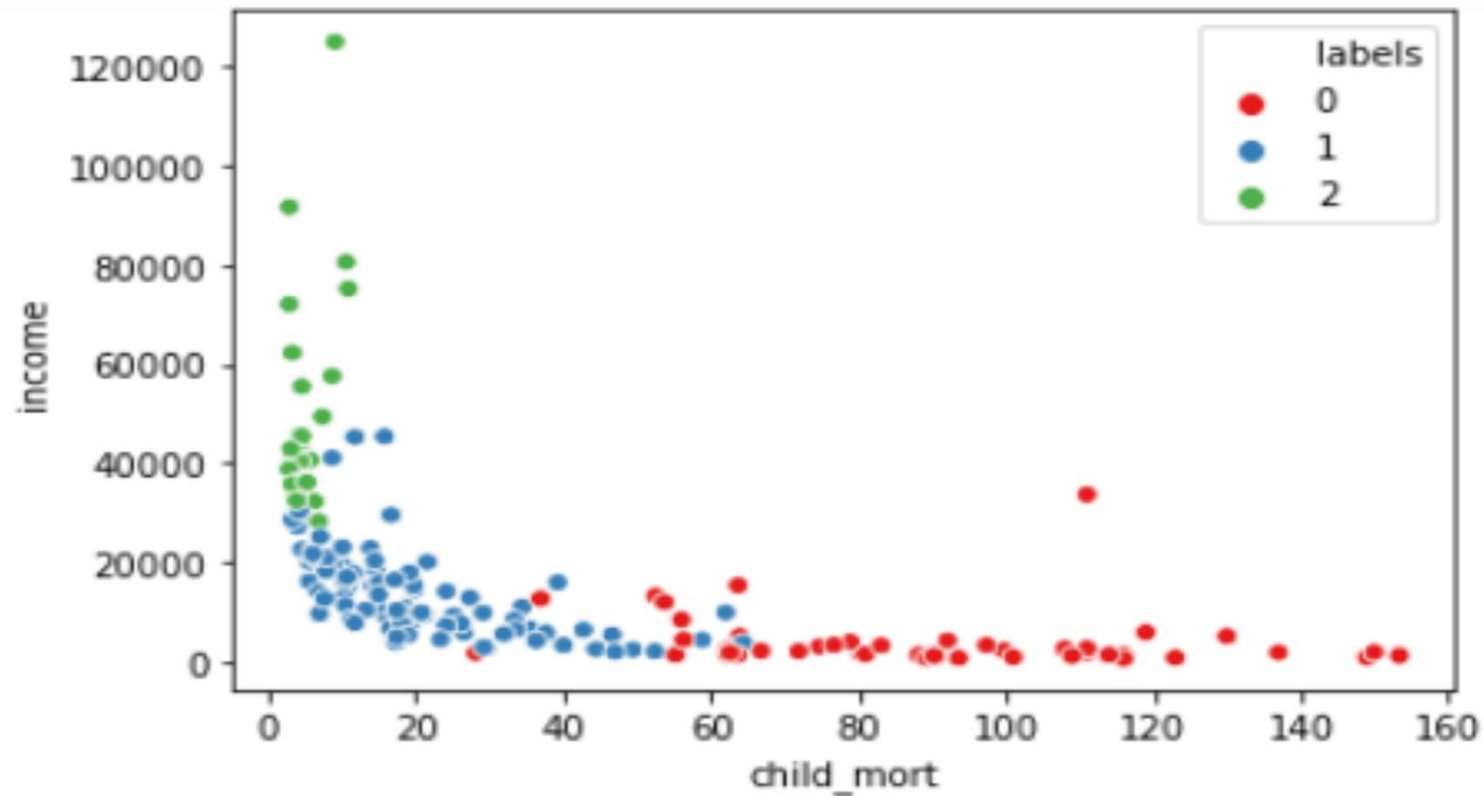
A Scorer closer to -1: The data point is not very similar to data points in its cluster.

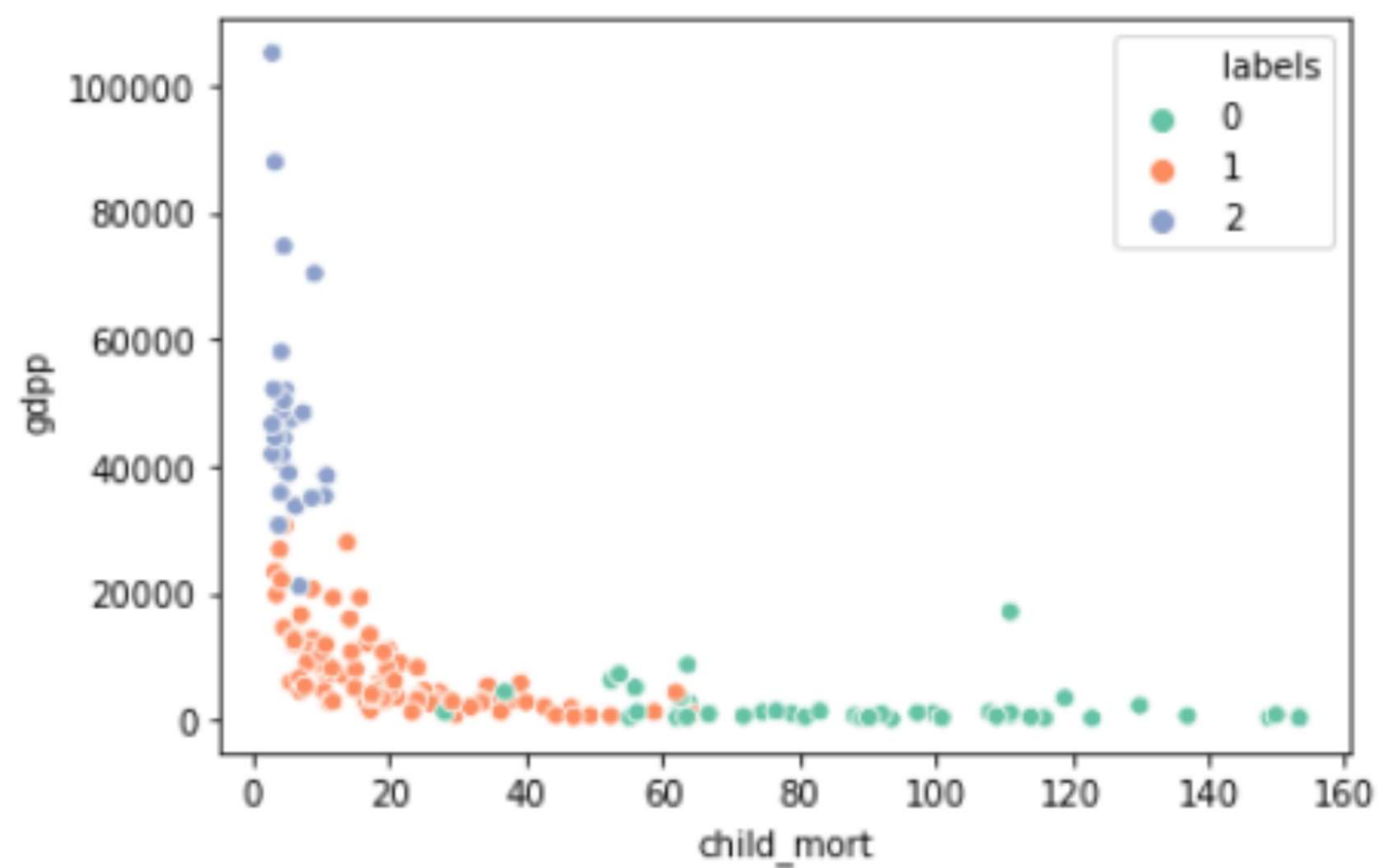


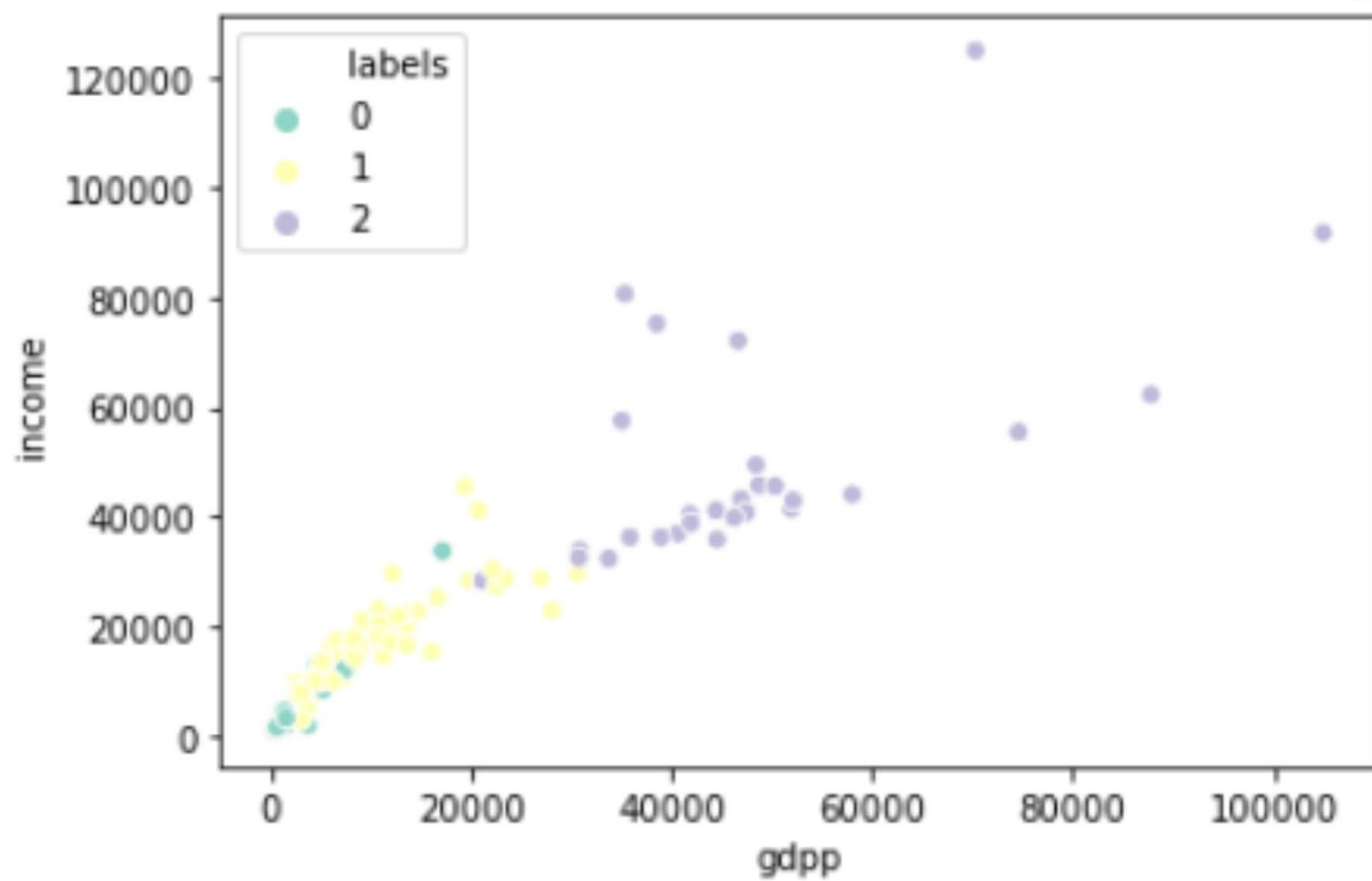
SUM OF SQUARED DISTANCES



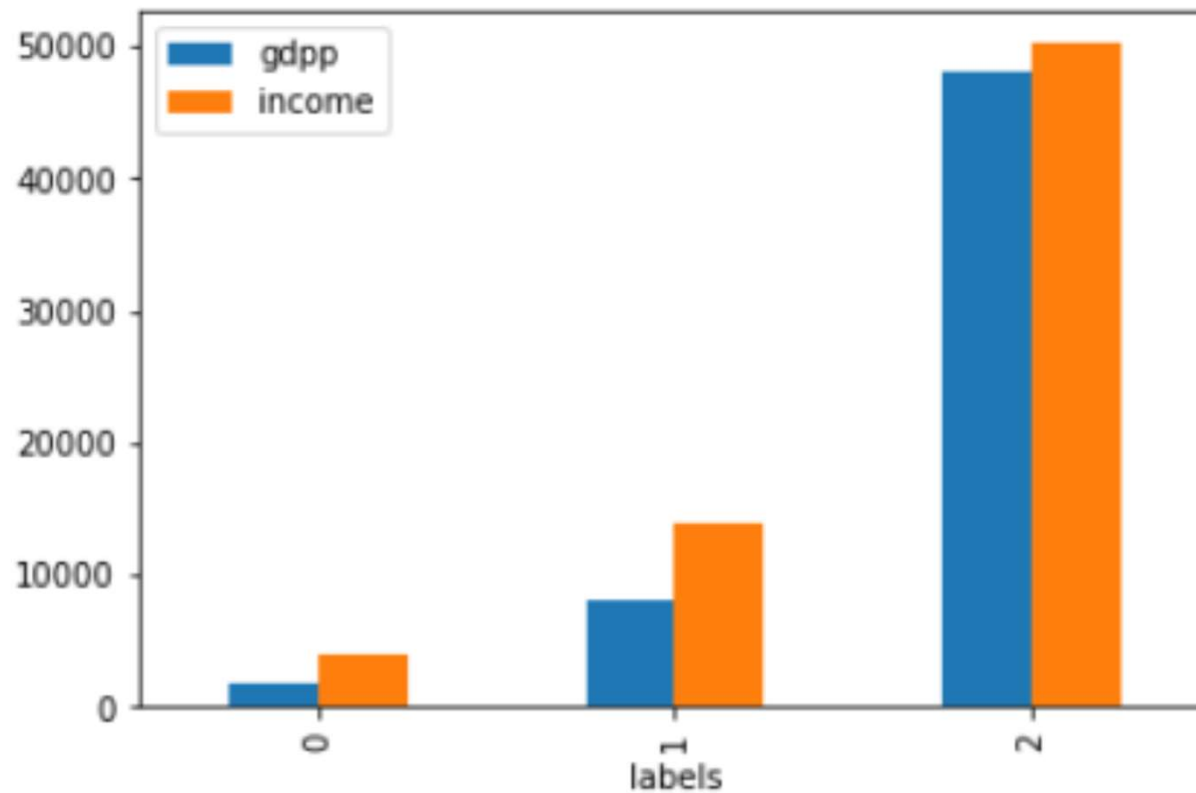
CLUSTER USING A SCATTER PLOTS

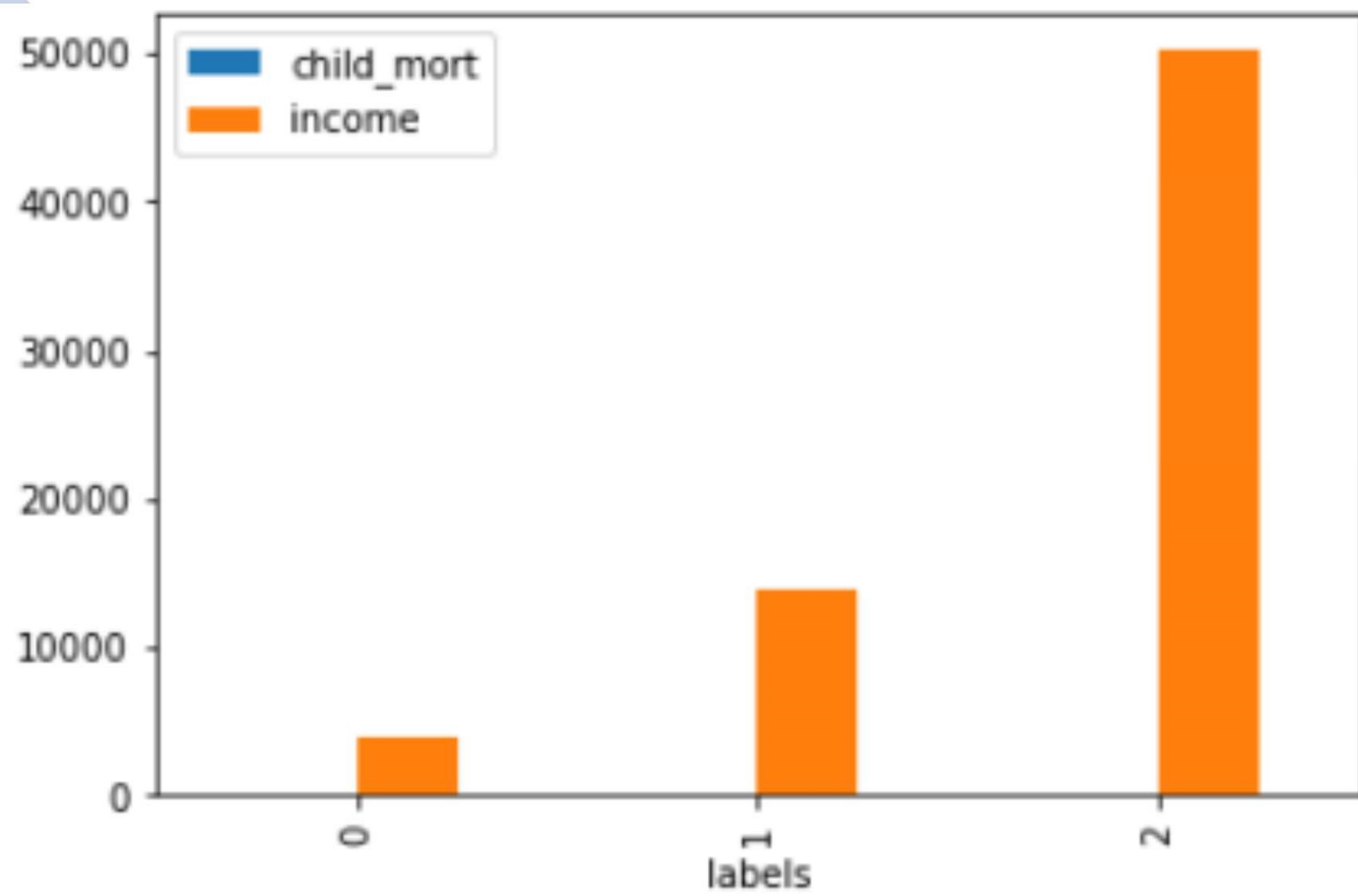


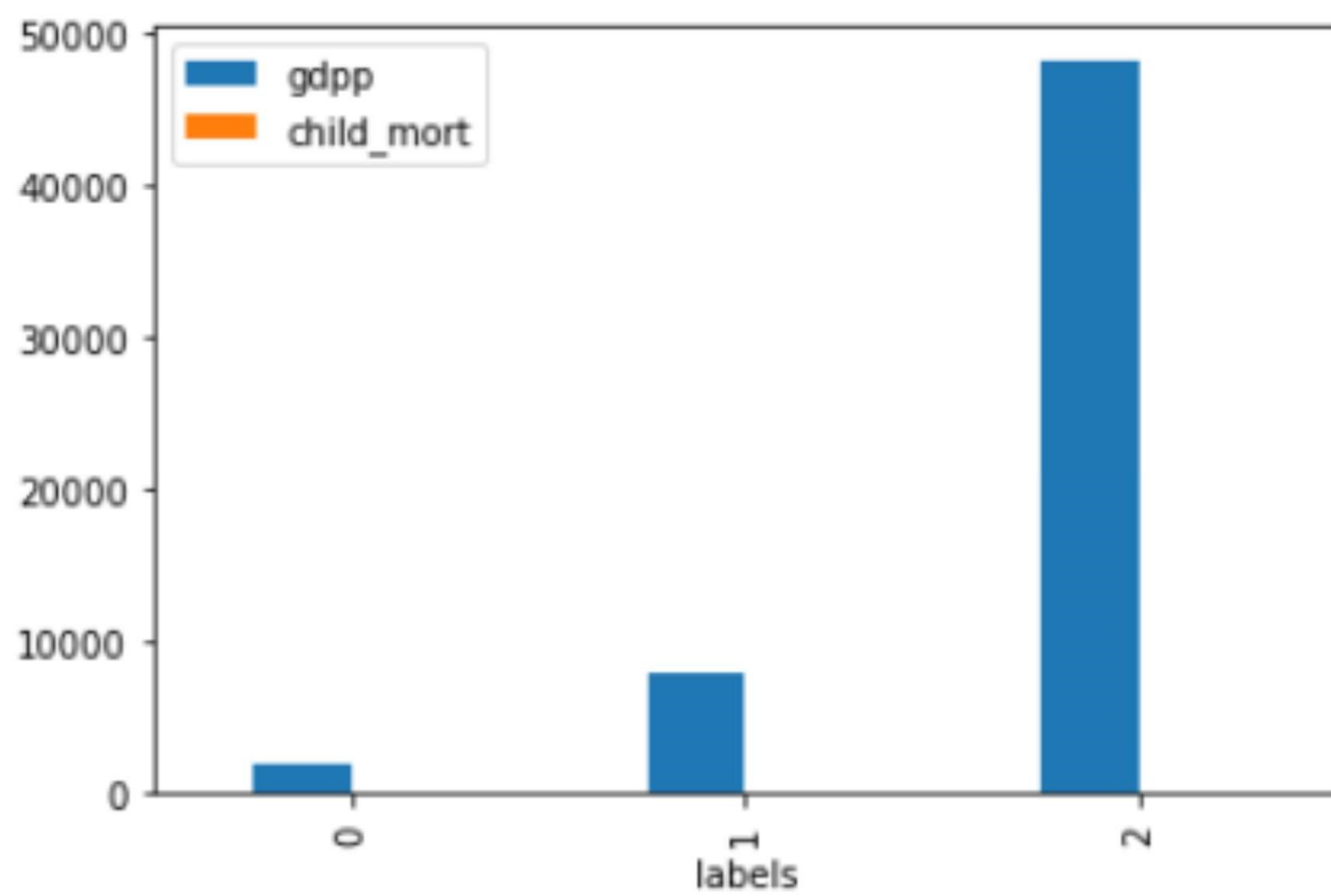




CLUSTERING PROFILE USING BAR PLOT

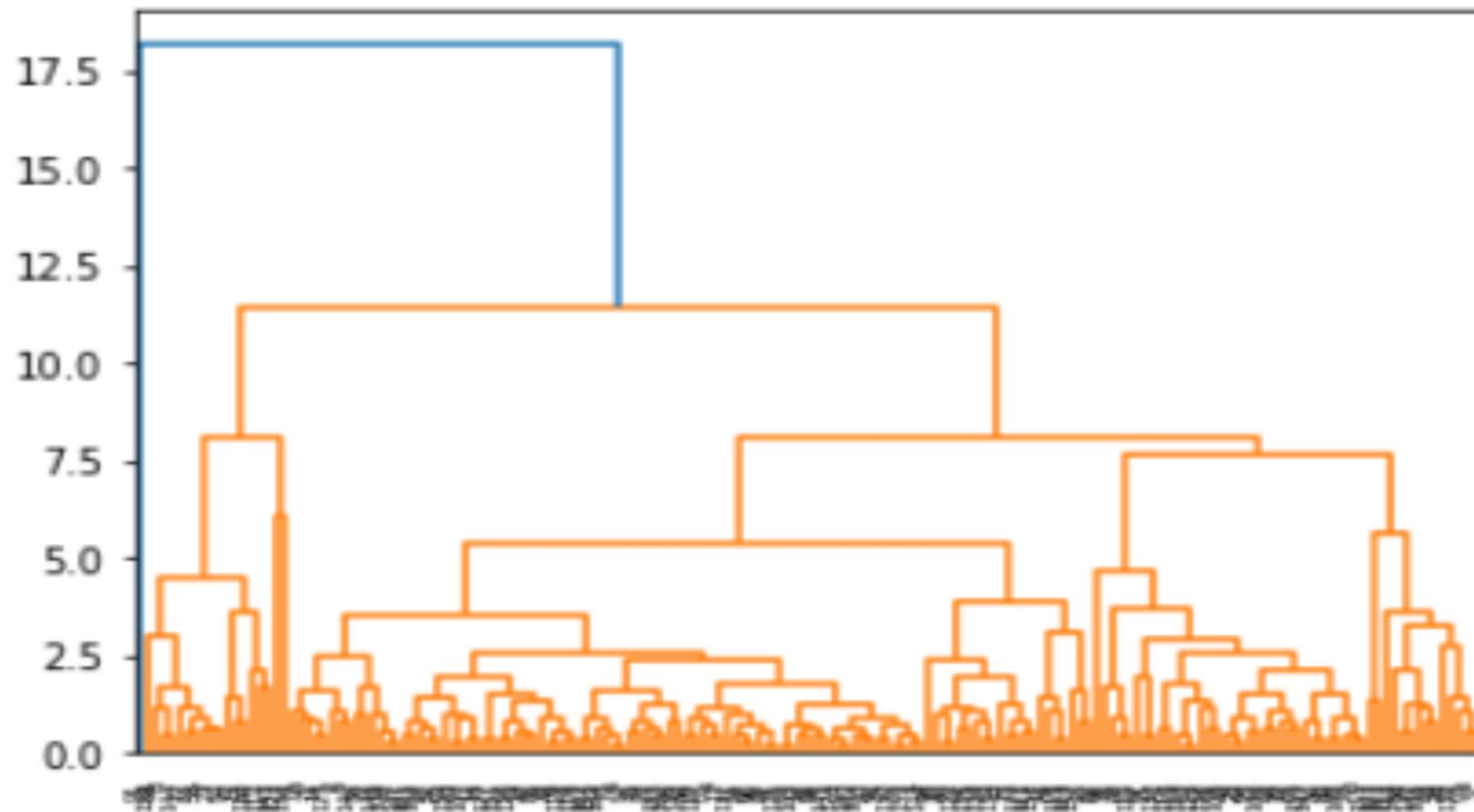






HIERARCHIAL CLUSTERING

THIS SHOWS HOW MANY CLUSTERS THE DATA CAN BE SPLIT INTO.



CONCLUSION-

- The top 5 Countries that requires help the most are listed below-
- Afghanistan, Angola, Benin, Botswana, Burkina Faso.
- These Countries have
- -very low rate of net income per person, GDP Per capita, average numbers of years a newborn child would live, total health spending and imports of goods and services.