Raju_Poster

by Q 123

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APPLIED DATA SCIENCE ASSIGNMNT - 3

Introduction

Clustering plays a strategic role in data science and algorithms as it aims to group the objects on the basis of their similarity in one cluster. This classification of the data is done on the basis of the density of the data, or on the basis of graphs, or any such statistical observations or distributions. (Nvidia, 2022).

Fitting in simple words can be understood as the adjustment made in the parameters with an aim to improve the accuracy of the data or the results. (Edpresso, 2022).

Method

Countries selected Bermuda, Denmark, Bulgaria, Argentina, Great Britain, India, Brazil and Jamaica. Different data like

NE.DAB.TOTL.ZS: total expenditure,

NY.GDP.MKTP.CD: USD GDP of the country,

EG.ELC.RNWX.KH: electricity production from renewable sources (%) and

EN.ATM.CO2E.GF.KT: emissions of carbon dioxide from fuel;

These indicators have been used in this research in order to compare with the help of clustering and fitting methods.

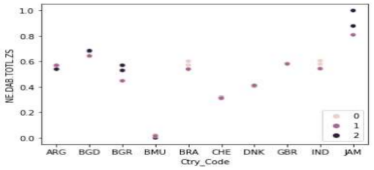
Results

series	Ctry_Code	Year	NE.DAB.TOTL.ZS	NY.GDP.MKTP.CD	EG.ELC.RNWX.KH	EN.ATM.CO2E.GF.KT
0	ARG	2014	99.595836	5.263197e+11	2.719000e+09	96691.456
1	ARG	2015	101.074922	5.947493e+11	2.752000e+09	98359.941
2	ARG	2016	101.039698	5.575314e+11	0.000000e+00	102268.963
3	BGD	2014	106.487933	1.728855e+11	1.490000e+08	45969.512
4	BGD	2015	106.728219	1.950787e+11	1.580000e+08	48782.101
5	BGD	2016	104.674816	2.214152e+11	0.000000e+00	53593.205
6	BGR	2014	101.085516	5.708201e+10	2.783000e+09	5412.492
7	BGR	2015	99.100768	5.078200e+10	3.107000e+09	5944.207
8	BGR	2016	95.092863	5.395390e+10	0.000000e+00	6153.226
9	BMU	2014	73.926721	6.413988e+09	0.000000e+00	0.000

The above image depicts the gathering of all the four indicators that has been selected in this research for all the countries with an aim to undertake the comparative analysis by clustering and fitting method.

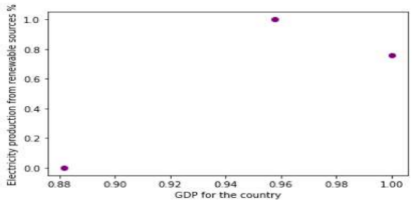
series	Ctry_Code	Year	NE.DAB.TOTL.ZS	NY.GDP.MKTP.CD	EG.ELC.RNWX.KH	EN.ATM.CO2E.GF.KT
0	ARG	2014	0.539749	0.168759	0.035192	0.608272
1	ARG	2015	0.569823	0.190971	0.035619	0.618769
2	ARG	2016	0.569107	0.178891	0.000000	0.643360
3	BGD	2014	0.679885	0.054036	0.001929	0.289188
4	BGD	2015	0.684771	0.061240	0.002045	0.306881
5	BGD	2016	0.643019	0.069789	0.000000	0.337147
6	BGR	2014	0.570039	0.016447	0.036020	0.034049

The above image depicts the values that has been achieved after normalization of the data frame values.



Panda has been used in order to analyze the data through algorithm and clustering and fitting methods

The above image depicts the information about total expenditure of all the countries that has been selected in this research with an aim to undertake comparative analysis. From the image it can be clearly seen that the total expenditure of Jamaican country is higher as compared to other selected countries in the study

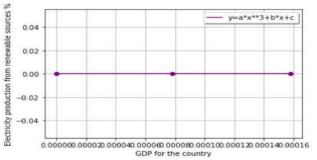


The above image depicts the association between the two indicators for country Great Britain, and that is electricity production from the renewable sources (%) and the GDP of the country.

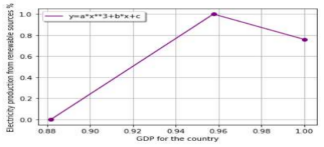
References

Edpresso, 2022. *Definition: Model fitting*. [Online] Available at: https://www.educative.io/edpresso/definition-model-fitting [Accessed 14 May 2022].

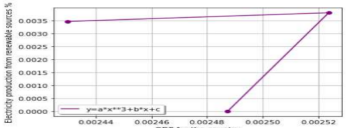
Nvidia, 2022. *CLUSTER ANALYSIS*. [Online] Available at: https://www.nvidia.com/en-us/glossary/data-science/clustering/ [Accessed 14 May 2022].



The above image is of Bermuda country and represents the indicators electricity production from renewable sources and GDP of the country. In order to achieve the above result, curve fit has been used in order to fit the data of Bermuda which has a low total expenditure.



The above data shows the relationship between electricity production from renewable sources and GDP of Great Britain. To achieve this result, curve fit is used as it can be seen that the country has medium total expenditure.



The above image depicts the information for Jamaican country and the association between its electricity production from the renewable sources and the GDP of the country..

Conclusion

Countries with high total expenditure have direct relationship with the GDP of the country and the electricity production. Countries with medium total expenditure, the relationship is direct between GDP and the electricity till the point a certain GDP is reached, after that the relationship becomes indirect. Countries with low total expenditure, the relationship between GDP and electricity production from renewable sources is parallel to the axis.

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