Research Proposal: Electricity Access in Africa

Background:

Countries with reliable electricity tend to have higher productivity, a better standard of living, and increased competitiveness in the Global market. Electricity is used in all industries, such as Agriculture, Education, and Healthcare, ensuring that the operations of these industries are effective. Unfortunately, Africa lacks this valuable resource causing stagnation in our economy. This research is focused on conducting predictive modeling of Electricity Access in Africa using data science and analytic techniques. This analysis will help us gain insights into the factors affecting access to electricity in Africa. It will also aid electricity companies in Africa to put practical measures to ensure an adequate supply of electricity, promoting economic growth in the continent.

REFERENCES :

IDEA:
Conduct analysis and predictive Modeling on Electricity Africa to identity trends and patterns and also to make predictions and forecast future electricity trends.

PROBLEM STATEMENT:
According to Africa Energy Outlook, 600 million people, or 43% of the total population, lack access to electricity, most of them in sub-Saharan. The inadequate supply of electricity has influenced the economic challenges faced by most African countries: Poor Education systems, Poor Healthcare systems, and unsustainable farming practices.

OBJECTIVES:

- Study the trends of Access to electricity in Africa
- Countries showing adequate supply of electricity
- Factors inhibiting access to electricity
- Forecast future electricity trends
- Provide recommendations and actionable measures that can be taken to ensure access to electricity in the future.

METHODOLOGY:

Datasets:

https://data.worldbank.org/indicator/EG.ELC.ACCS.ZS?end=2021&start=1990&view=map

Data Analysis and Modelling:

- Apply Data cleaning and preprocessing techniques to handle missing and null values in the datasets.
- Conduct statistical analysis and visualizations to study the relationships between various variables in the dataset.
- Conduct Exploratory data analysis to study trends and patterns between various variables and how they influence access to electricity.
- Apply the use of Machine learning algorithms to make predictions
- Create a report on the summary of our predictions, giving key insights and predictions

Intervention Assessment:

- Make suggestions and recommendations to stakeholders to enhance decision-making on electricity access.
- Evaluate the effectiveness of existing policies based on predictions.

Solution Deployment :

Develop an interactive and user-friendly web application to deploy the enhanced predictive model and intervention assessment tools.

Expected Outcomes:

- Key factors affecting the supply of access to electricity in Africa
- Recommendations on how access to electricity can be improved

CONCLUSION:

The aim of this project is not just to conduct analysis and make predictions but to provide key insights and make recommendations that will increase access to electricity in Africa to improve overall economic growth in the continent.