

PREDICTING FOOD PRICES IN NIGERIA BASED ON LOCATION

Introduction

The global food supply has reached an all-time low. As a result, food, a necessity for survival, is gradually becoming a luxurious commodity. While climate change, the Covid-19 pandemic, and increased poverty have been linked to global food insecurity; insurgency, population growth, and poverty are the leading causes of food insecurity in Nigeria. The result is an increase in food prices across the state, resulting in malnutrition.

According to a Nigerian Bureau of Statistics (NBS) report detailing poverty and inequality from September 2018 to October 2020, 40 percent of Nigeria's population live below the international poverty line of \$1.90 per day, with another 25 percent vulnerable. Similarly, the United Kingdom's Institute of Development Studies ranked Nigeria as the world's second poorest country in terms of food affordability. There is a scarcity of food in the land, making it unaffordable for the commoners.

Nigeria is heavily reliant on importation of staple foods, usually from neighboring countries. Since agricultural practices in Africa are usually dependent on the prevailing seasons—rainy or dry—seasons and location, these two factors must also contribute to food shortage and affordability in Nigeria.

The purpose of this study is to assist a low-income earning Nigerian in planning food expenditure based on the predicted price range of food items in different parts of the country.

Problem Description

According to "Trading Economics," an independent economic forecasting consortium, food inflation in Nigeria averaged 12.07 percent between 1996 and 2021, rising to 22.95 percent in March 2021. The Food and Agriculture Organization reports that, over 12 million Nigerians go to bed hungry every night and are malnourished. This inflation is due to the country's growing insurgency, which is impeding agricultural production and effective food distribution. It has been reported that imported foods are cheaper near borders, whereas home-grown foods are cheaper in states where they are manufactured locally. For example, 1kg of beef in Gombe State, a predominantly cattle rearing state, costs 1232.85 Naira, whereas Imo State residents pay around 2132.02 Naira for the same portion of beef. Typically, the price of food is also affected by the food that is in season at the time.

Increased inflation in Nigeria does not imply an increase in income, therefore the nutritional needs of the average Nigerians are rarely met due to low purchasing power and rising food inflation. Malnutrition is now the norm, particularly among Nigerian children. Taking the purchasing power and location into consideration, we hope to assist an average earning Nigerian in staying nourished.

Proposed Method

- Data Sourcing and Labelling: Data would be scraped from the Nigerian Bureau of Statistics (NBS) website using BeautifulSoup.
- Data Preprocessing: The extracted data would be labelled and cleaned using Pandas.
- Machine Learning Model: Different regression tools would be employed and the best suited for this machine learning model would be determined.
- Model Deployment: The model would be deployed as a web application for public use.

Proposed Split

- Data Sourcing sub team - Funmi Bashorun and Joseph Ojo.
- Data Cleaning and prep sub team - Dara Obademi, Elizabeth Olutayese, Samuel Oyedun and Ladidi Abdulmumini
- Model sub team - Seun Ajayi, Adedayo Aruwajoye and Timileyin Idowu
- Model deployment sub team - Shadrack Adeyemi and Abdulrahman Omowabi

Conclusion

The team intends to launch a beta version of this project for presentation and dissemination to the Nigerian public. We want to help Nigerians plan their food expenditure in accordance with the country's current economic realities and, most importantly, the locations in which they find themselves.

References

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