

Geo-Visualization of Hotspot of Citizen Dissatisfaction on Social Services Using Media Print: Case Study of Fuel and Cash Scarcity in Nigeria.

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Introduction

The recent expression of public dissatisfaction in Nigeria about the scarcity of cash and petrol has highlighted the crucial role that these resources play in a modern economy, and the scarcity of these resources can have a ripple effect on various aspects of society, including transportation, commerce, and daily living expenses. To facilitate efficient resource allocation during this crisis and better understand the effects on the citizens, we developed a data-driven solution that classifies media reports using NLP techniques, geocodes the locations present in the media report and uncovers the spatiotemporal patterns in fuel and cash scarcity over the years.



Figure 1: Image of the cash and fuel scarcity situation in Lagos source: punch news paper

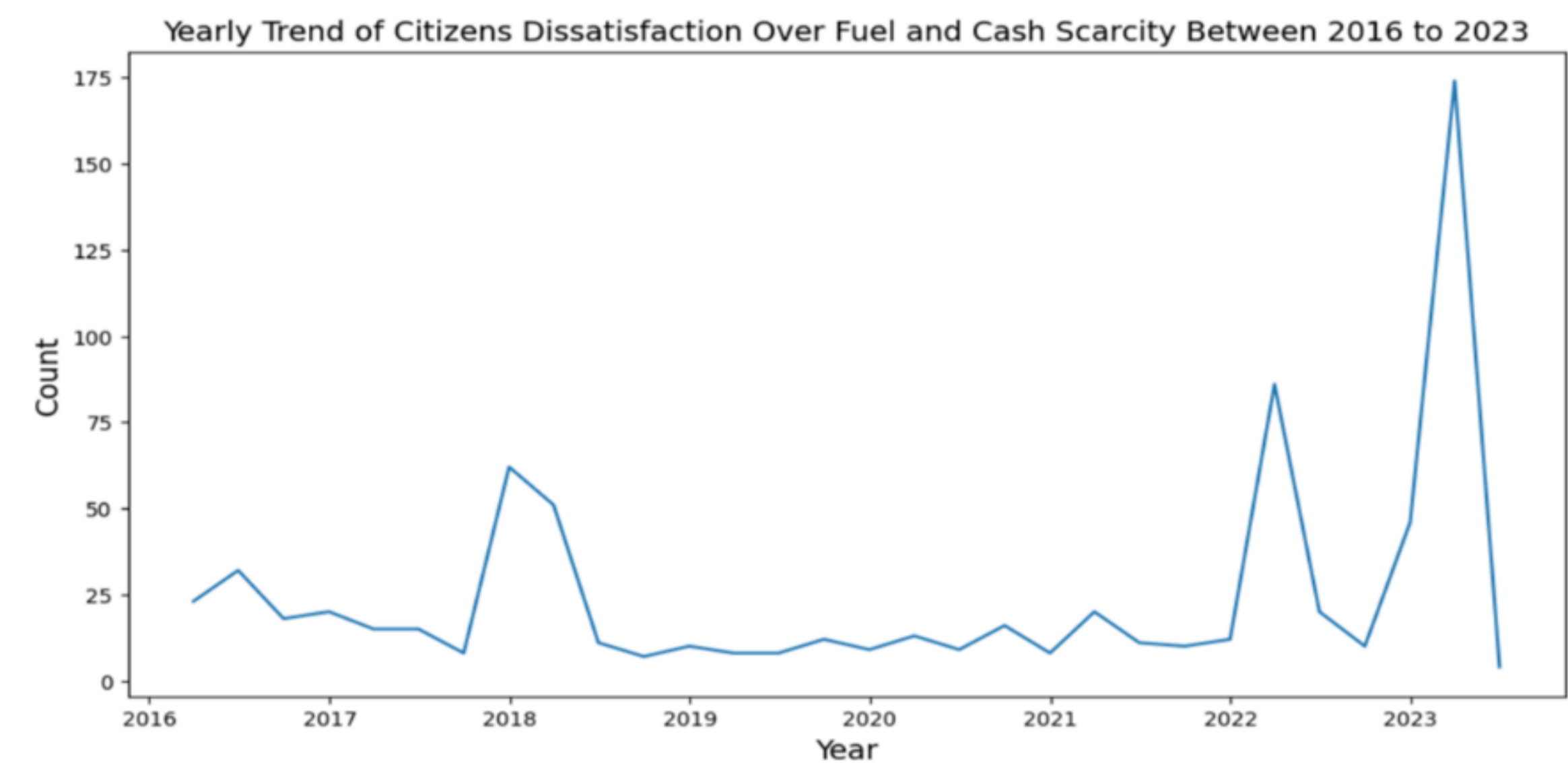


Figure 4: Map showing yearly trend of citizens dissatisfaction over cash and fuel scarcity in Nigeria.

| State | Title | Content | Date Published | Classification | Locations | Latitude | Longitude |
|---------------------------------|--|--|----------------|----------------|-----------|------------|-----------|
| Abuja Federal Capital Territory | Petrol queues resurface in Abuja over fear of price hike, scarcity | Long queues have resurfaced in Abuja filling states as motorists struggle to purchase Premium Motor Spirit, also known as petrol. | 2021-11-15 | Dissatisfied | Abuja | 9.0643305 | 7.4892974 |
| Kaduna | Haji 2019: Aviation fuel scarcity disrupts transportation of Nigerian pilgrims | The ongoing transportation of Nigerian pilgrims from Saudi Arabia has been disrupted due to the scarcity of aviation fuel (Jet A1) in the domestic market. | 2019-08-30 | Dissatisfied | Kaduna | 10.3825318 | 7.853226 |
| Lagos | Fuel Scarcity: Lagos bans indiscriminate queues at petrol stations | The Lagos State Government on Wednesday said it would no longer allow indiscriminate parking of vehicles on the road networks across the state on the basis of queuing up for Premium Motor Spirit otherwise known as fuel, just as it threatened to sanction any erring filling stations and motorists who flout the directive. | 2016-04-06 | Dissatisfied | Lagos | 6.4550575 | 3.3941795 |

Table 1: Sample image of dataset

Conclusion and Recommendation

This study has shown the possibility of getting citizens dissatisfaction on social services using media print data.

Further research can;

- Make use of social media data like Twitter.
- Finetuned model for both Text Classification and Named Entity Recognition.

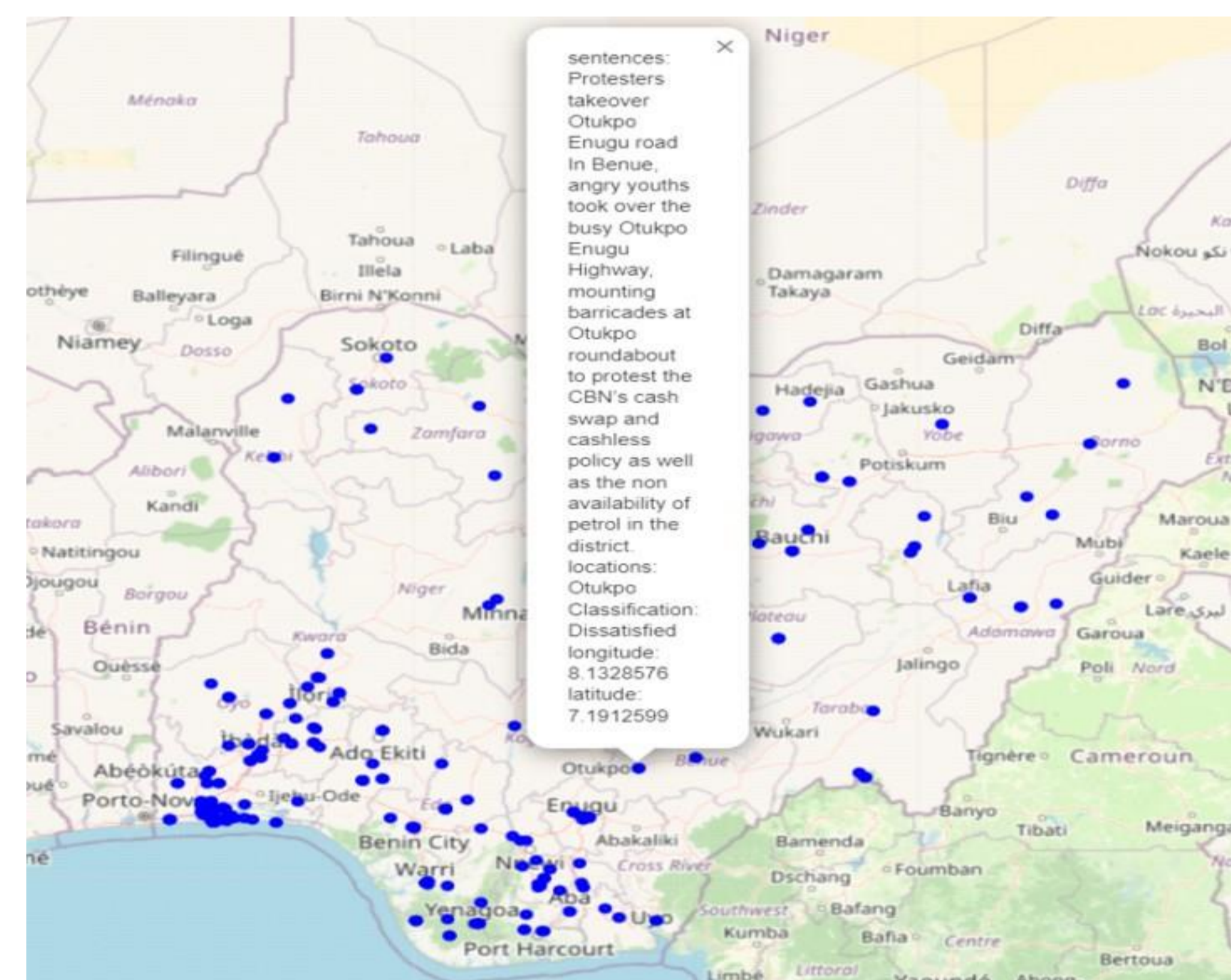


Figure 5: Map showing geocoded locations where citizens are dissatisfied.

Materials and Methods

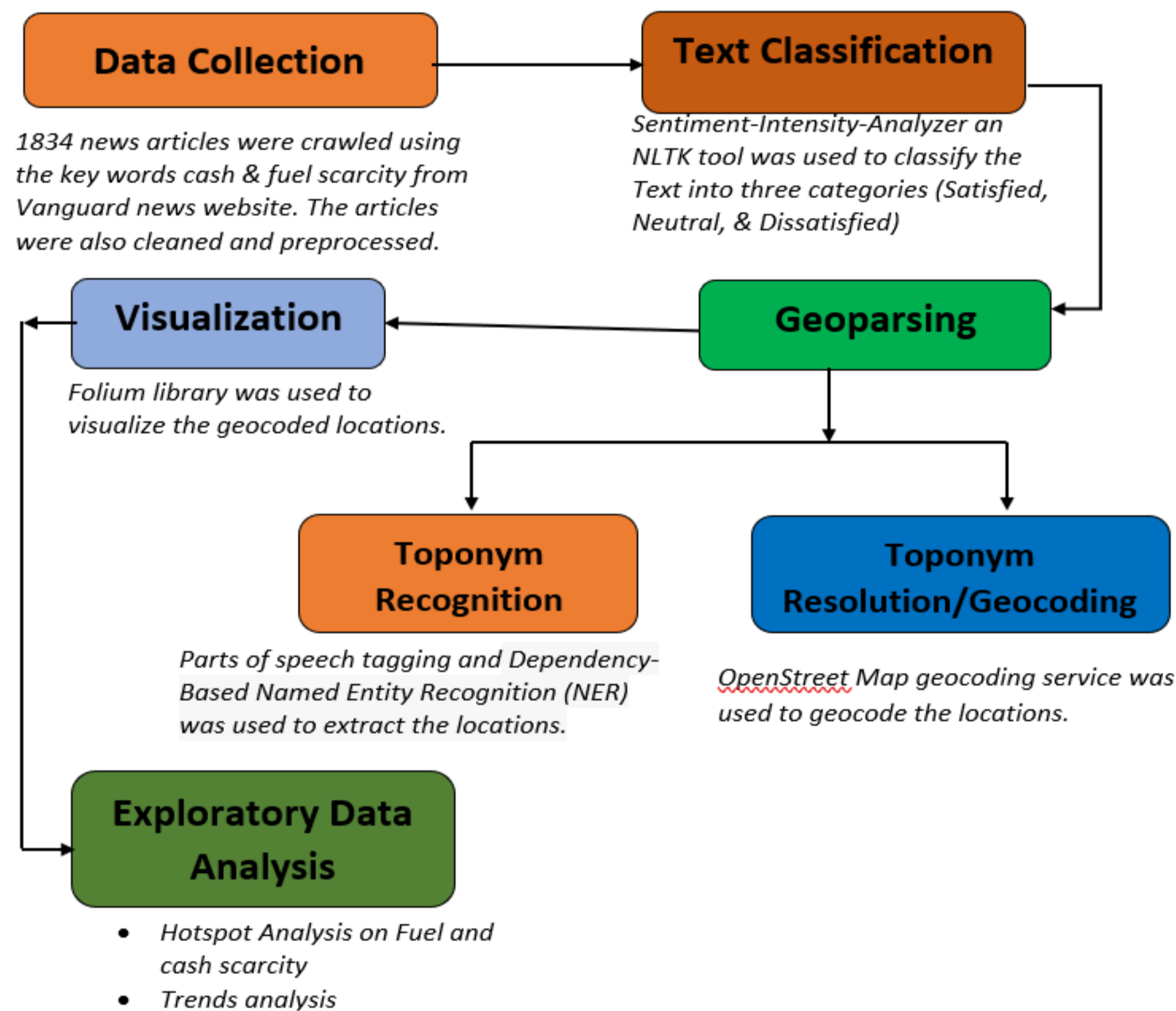


Figure 2: Methodology Flowchart

Results and Discussions

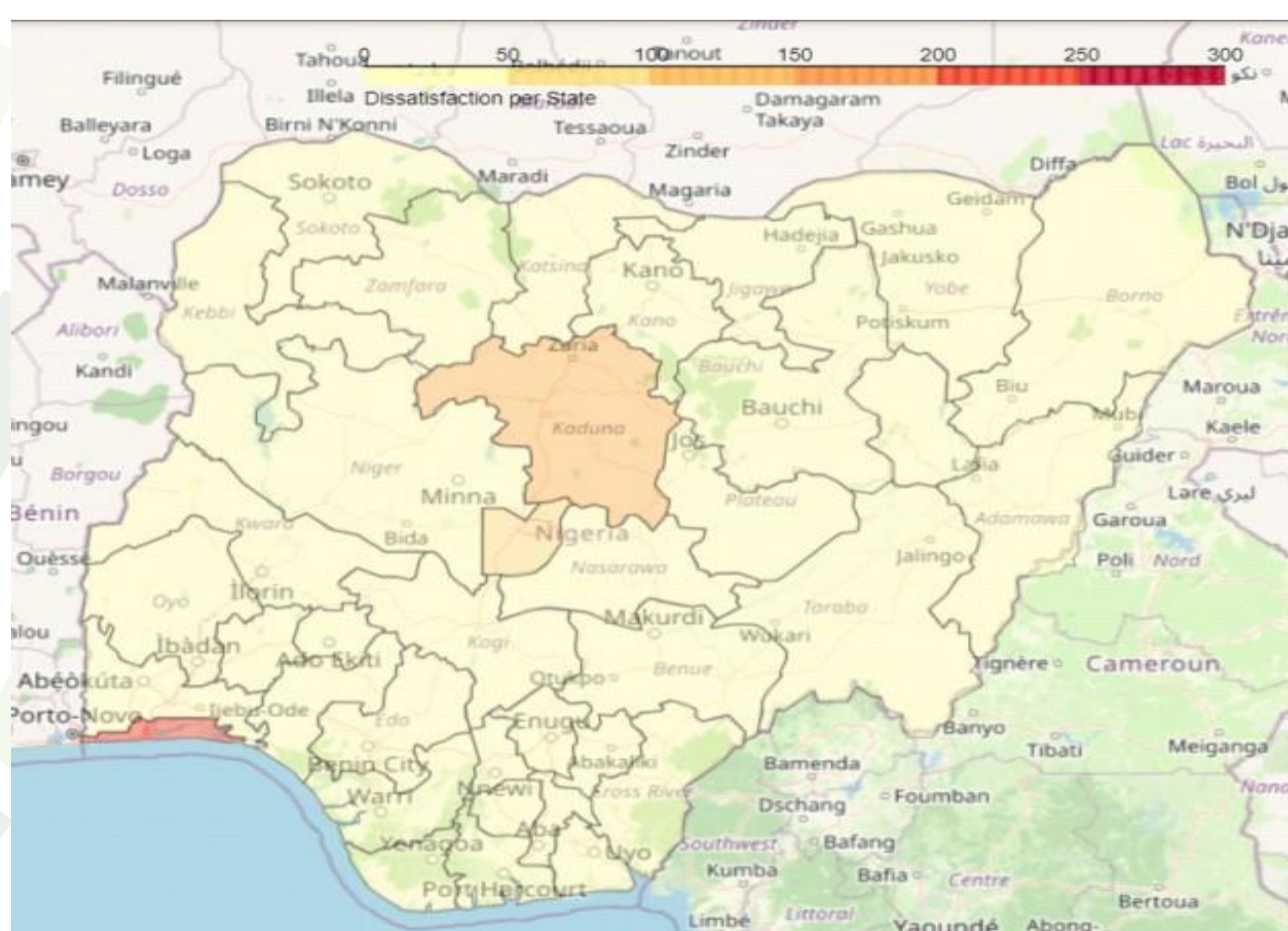


Figure 3: A map showing Hotspot locations of citizens' dissatisfaction over cash and fuel scarcity.

References

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