Analysis of Election in World's Largest Democracy

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Introduction

The Lok Sabha is composed of representatives of people chosen by direct election based on Universal Adult Suffrage. The Constitution of India allows for a maximum of 550 members in the House, with 530 members representing the States and 20 representing the Union Territories. At present, the Lok Sabha has 543 seats filled by elected representatives. The term of the Lok Sabha, unless dissolved, is five years from the date appointed for its first meeting. Indian general elections are the largest election in the world as around 1 billion people cast their votes via Electronic Voting Machine. As a result of the Lok Sabha elections people of India choose its Prime Minister. Each seat in the house represents a constituency, candidate who is elected then form the Parliament. During the elections, members from 6 National parties and 54 state parties compete against each other to get elected in the parliament.

The Scheduled Castes and Scheduled Tribes are officially designated groups of people and among the most disadvantaged socio-economic groups in India. They have specific number of seats represented by a SC or ST candidate.

Inspiration

India will be having its 18^{th} Lok Sabha elections (General Elections) in 2024, the motivation behind this application was to represent the political data in a concise and easy to understand manner. The political scenario of India has always allured me, this assignment gave me a perfect opportunity to dive deep into Indian political history and gain a better understanding about India's political past.

Overview

The project was created using RStudio, with the Shiny package for interactive web application and analysis. The data was extracted from the website of Election Commission of India and "indiavotes.com" and some crucial data regarding the male/female sex ratio in the parliament was extracted from Wikipedia. The data wrangling part was performed in the Rmarkdown file using R packages like tiduverse, dplyer, rgdal, maptools etc. The visualisation was created using ggplot2, plotly, highcharter and ggparliament.

Dataset

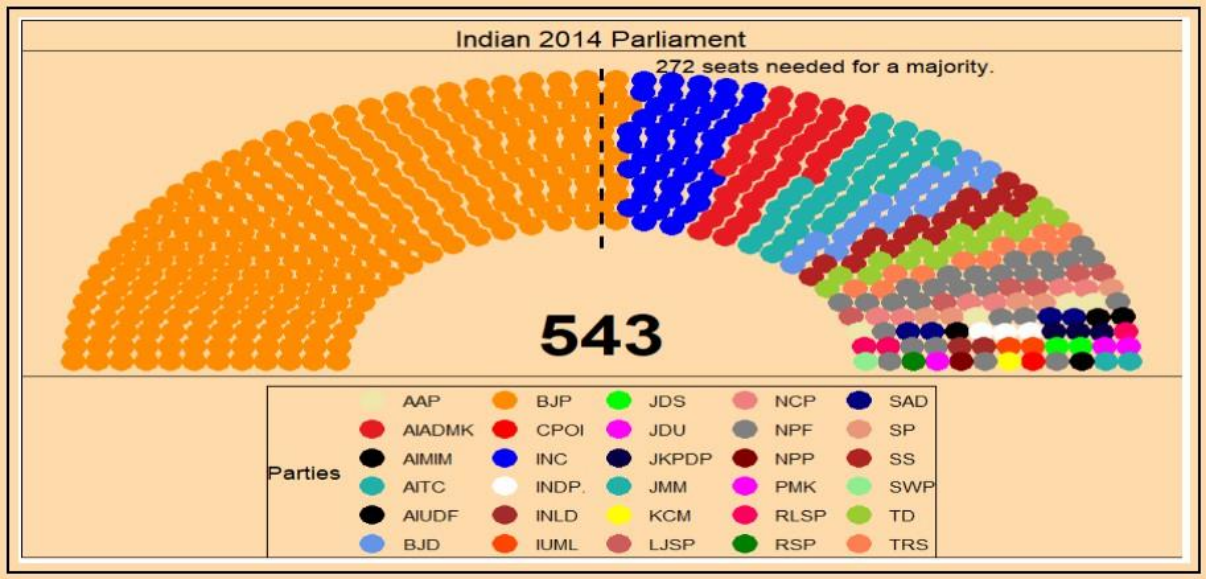
The dataset was extracted from “indiavotes.com” which provided the data of General Election in India, data contained the winning candidates name, winning margin, winning parties name etc. I cleaned the data and combined the data of the last 6 general elections making a time series data which had all the constituencies, member elected from that constituency, winning margin etc.

We have obtained an additional dataset that contains the shape file for electoral constituencies in India. This file is used to generate visual representations of geographical areas, as it contains both the non-topological geometry and attribute information of various spatial features within the dataset.

Design Principles and Visualization

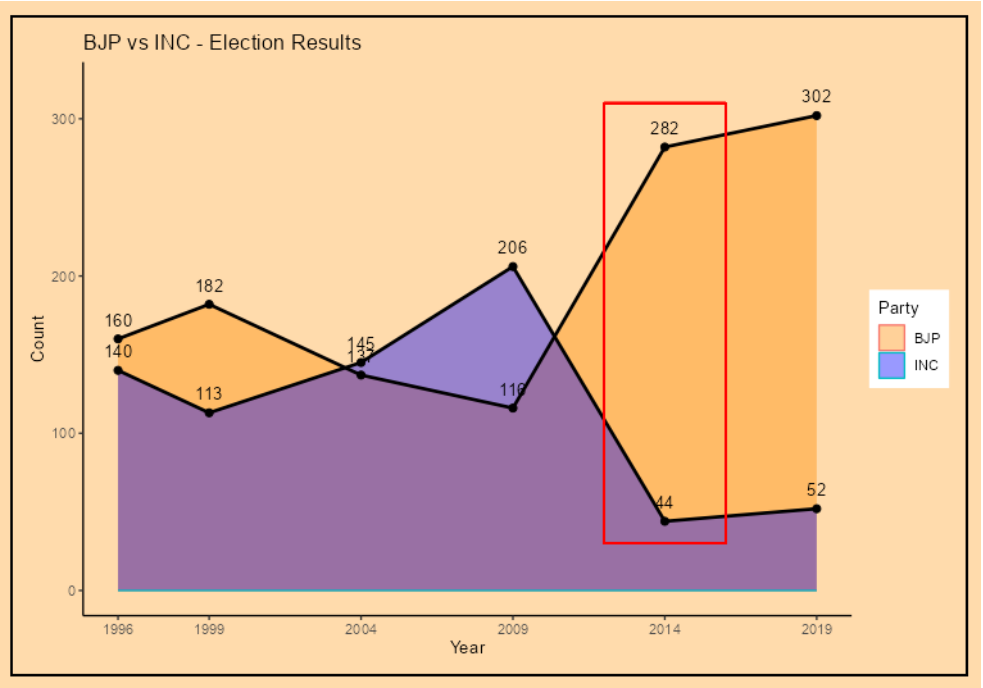
The principles of design taught in the class were implemented to ensure that the visualizations are easily understandable, succinct, and effectively convey the data. Each visualization was designed to be clean and straightforward, avoiding unnecessary complexity. Consistent and harmonious colour schemes were applied throughout all visualizations to enhance their visual appeal. Interactive elements were incorporated, enabling users to interact and delve deeper into the data. Moreover, efforts were made to ensure accessibility, including clear labels, legends, and tooltips that appear when hovering over elements, creating a user-friendly experience.

Parliament Chart



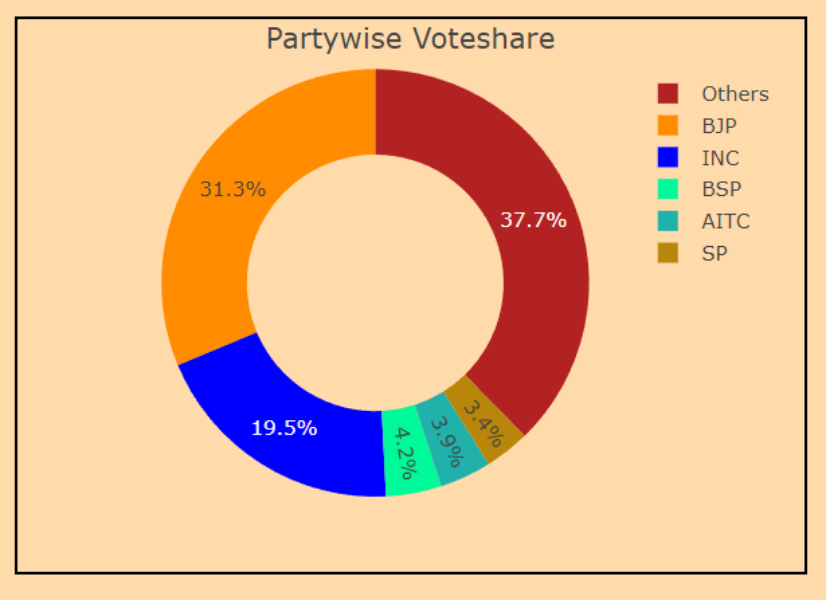
This plot resembles the seating of the parliament house, and users can easily understand the party in rule as they have crossed the majority seats mark. In this instance, BJP can be clearly seen forming the government as they have surpassed the 272 seats majority mark.

Line Chart



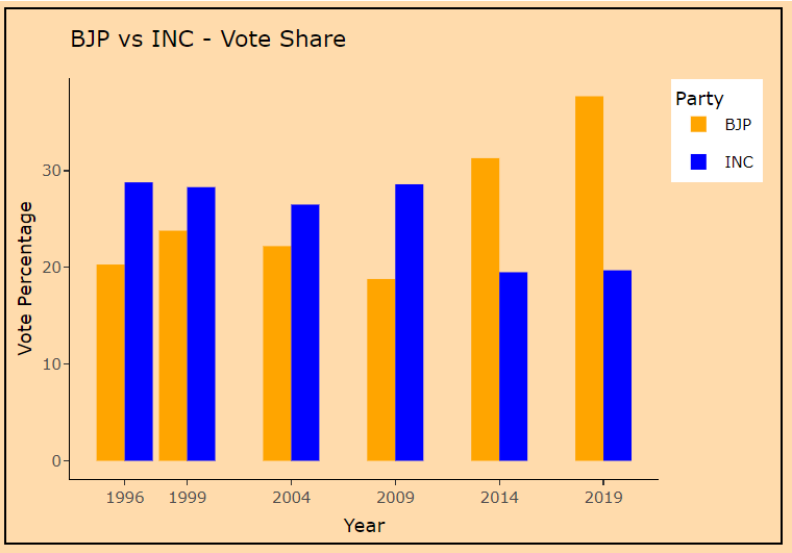
I have used the line chart to represent time series data of the number of seats secured by the largest political parties across 6 elections. With the help of line charts, we can easily do trend analysis and annotations can help us observe abrupt changes.

Donut Chart



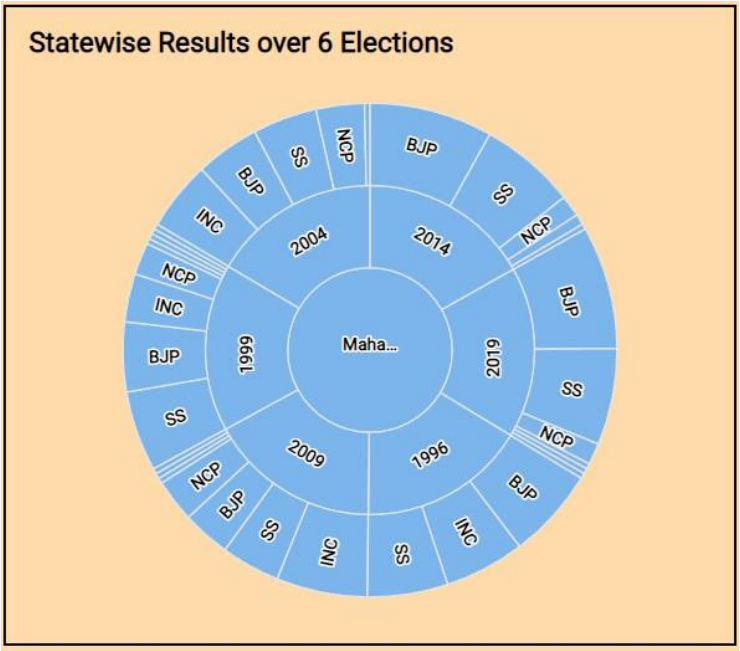
I used a donut chart representing the percentage of vote share received by each party across the six elections. As we are representing the proportion of votes, the donut chart seemed to be the best way to represent this data.

Dodge Bar Chart



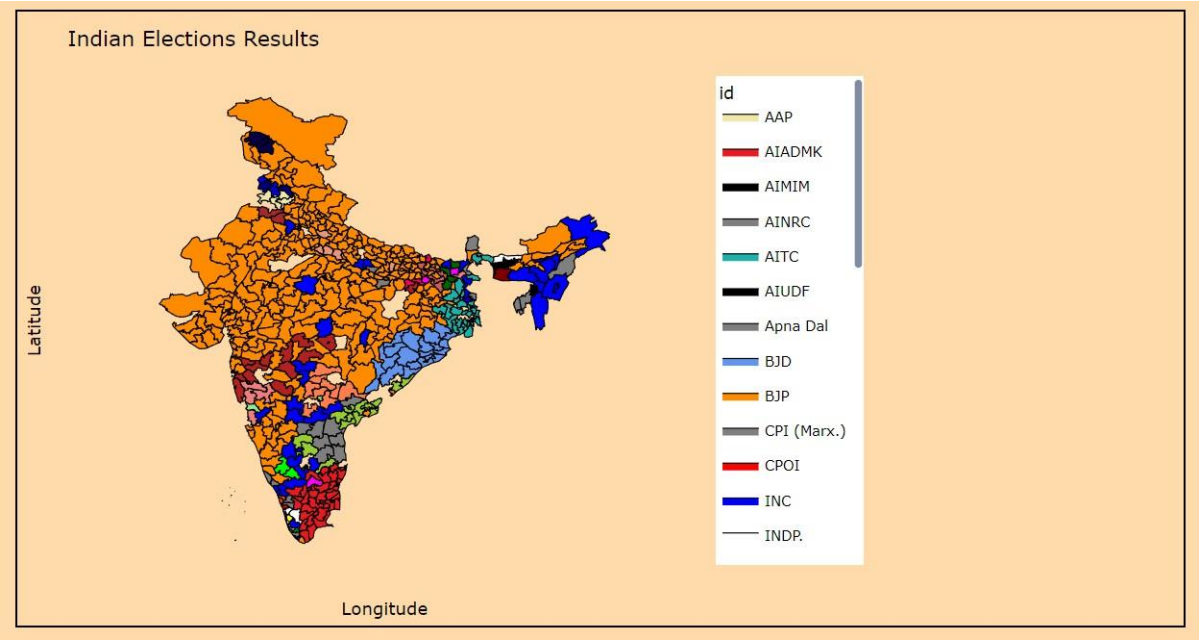
While doing the party wise analysis, I wanted to compare the vote shares received by each party, by creating this graph we can compare the vote percentage.

Sunburst Chart



Sunburst charts are usually used while working with hierarchical data. I used this graph while showing the state wise results, as this created a hierarchy in which the inner most layer represents the state selected by the user, the next layer shows the years and the outer most layer provides the information about the number of seats won by each party in that particular year.

Choropleth Map



I have used the choropleth map to represent give a better visual of which party has won in which constituencies and on hovering on each region it provides the information of the winning candidate as well as the number of votes received by that candidate.

Conclusion

The visualizations offer a holistic portrayal of India's general elections, presenting insights into partwise analysis, state wise analysis, ruling party, opposition, and comparison of the largest parties in India. They effectively showcase the historical trend of Indian politics and gives us deeper understanding of the political intricacies at the root level. The interactive Shiny app empowers users to explore the data and obtain deeper insights, making it a valuable resource for comprehending the intricacies of India's election analysis.

References

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