

India Votes: Project Final Report

1 Introduction

India, the world's largest democracy, has witnessed a rich and dynamic electoral history. The Parliamentary General Elections are a testament to the nation's democratic principles and the people's voice.

India's democratic process is a complex tapestry of diverse voices, ideologies, and aspirations. In our project, "India Votes," we aim to discern the heartbeat of India's democracy through data visualization. By exploring the outcomes of previous elections, we seek to uncover insights lying beneath the surface, providing a deeper understanding of the electoral landscape.

2 Description of Data

The data is a tabular dataset with information about various constituencies (PC name), their respective constituency numbers (no), type of constituency (GEN for General or SC for Scheduled Caste), the state they belong to, the candidate's name, their affiliated political party, the number of electors, the number of votes received by the candidate, the voter turnout percentage, the margin of victory (or defeat), the margin percentage, and the year of the election.

Each row represents a different constituency's election data from the year 1962. The data includes constituencies from several states in India.

The dataset provides insights into the electoral dynamics, voter turnout, and the margin of victory in different constituencies during the specified year. The each column has its importance among which % turnout and margin are supposed to be very useful

3 Plots Developed

1. **Year wise Turnout Plot for Each Constituency:** This visualization offers a comprehensive view of electoral trends over time, allowing for the analysis of shifts in voter behavior and political dynamics within each constituency.
2. **Radar Chart for Population Analysis:** This visualization offers a view of Unemployment rate , literacy rate , sex ratio , income per person in thousands and poverty rate in India acc to the 2011 Census
3. **Choropleth for Population and area:** This visualization offers a view of Unemployment rate , literacy rate , sex ratio , income per person in thousands and poverty rate
4. **Turnout Choropleth:** This visualisation provides a interactive chloropleth map that showcases the turnout in each constituency from 1962 to 2019.
5. **Average Turnout Across India Over the Years:** By examining the average turnout over time, we can gauge the overall engagement of the electorate in the democratic process and identify any significant fluctuations or trends.
6. **Turnout Race:** This dynamic visualization highlights the top 15 states that have consistently championed voter engagement.
7. **Scatter plot for %Margin , %Turnout and Votes:** Provides a state wise and year wise visualization showing the domination of a political party in each constituency along with the the turnout and votes cast.
8. **State wise distribution of winning parties:** Provides a comprehensive radial stacked bar graph to visualise the state wise winning constituencies for a given year.
9. **Statewide Winning Parties Choropleth:** By visualizing the winning parties in each state, we gain insights into regional political preferences and the distribution of power across the country.
10. **Comparison between two parties at a state level:** This interactive line chart allows users to select a specific state and two political parties, revealing the trends of these parties within that state over time. This provides helpful comparison between the two competing parties and can help analyse which policies/politicians led to favourable outcomes for the party.
11. **Distribution of seats among states**

12. **Seat Reservation Pie Chart:** This interactive pie chart allows users to select a specific state and visualize the distribution of seats between general candidates and those reserved for SC/ST communities. This visualisation can help us find out the caste make-up of each state.
13. **Evolution of Major Political Parties in Indian Parliament:** By plotting the trends of major political parties such as INC, BJP, CPI (M), and Others over time, this visualization illustrates the transition of India's political landscape from multi polarity to a largely bipolar system. It also highlights the stratospheric rise of BJP and provides insights into the changing dynamics of Indian politics.
14. **Turnout in Each Constituency as a Scatter Plot:** This visualization provides a granular perspective on voter turnout, allowing for comparisons across constituencies and the identification of outliers or regions of particular interest.

4 Benefits of Current Plots

- **Informing Voters:** These visualizations empower voters to make informed decisions by providing insights into party performance, voter turnout, and electoral trends.
- **Guiding Upcoming Politicians:** Aspiring politicians can leverage these visualizations to understand the electoral history of India and make strategic decisions regarding party affiliation and constituency focus.
- **Assisting Political Parties:** Political parties can use these visualizations to assess their performance, identify areas for improvement, and understand the dynamics of rival parties in different regions.
- **Enabling Insightful Coverage by Press:** News channels and reporters can utilize these visualizations to enhance their election coverage, offering data-driven analysis and informed commentary to the public.
- **Supporting Political Analysts:** Analysts and researchers can delve into the nuances of electoral dynamics using these visualizations, identifying patterns and trends that shape India's political landscape.

5 Images

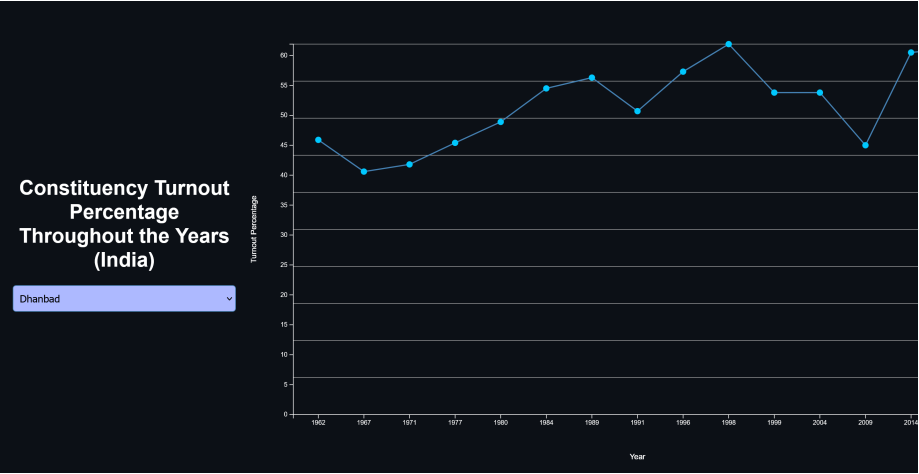


Figure 1: Dhanbad Constituency Turnout

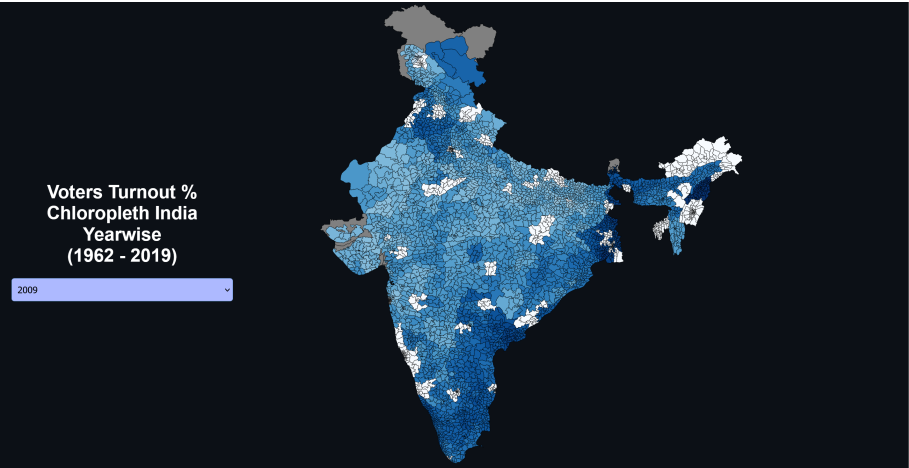


Figure 2: Turnout 2014 Choropleth

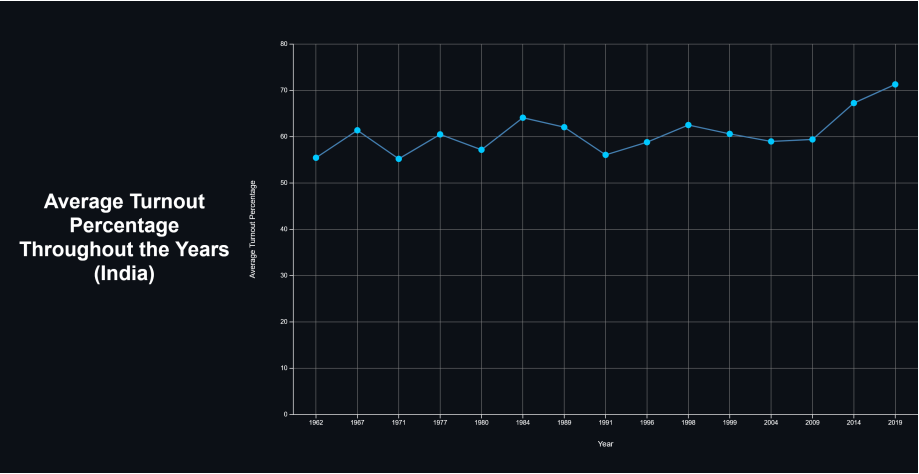


Figure 3: Turnout over the years

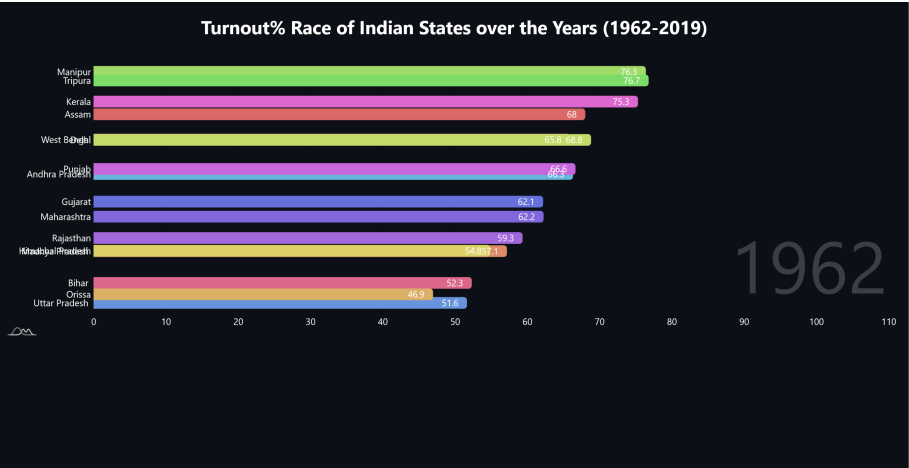


Figure 4: Turnout Race

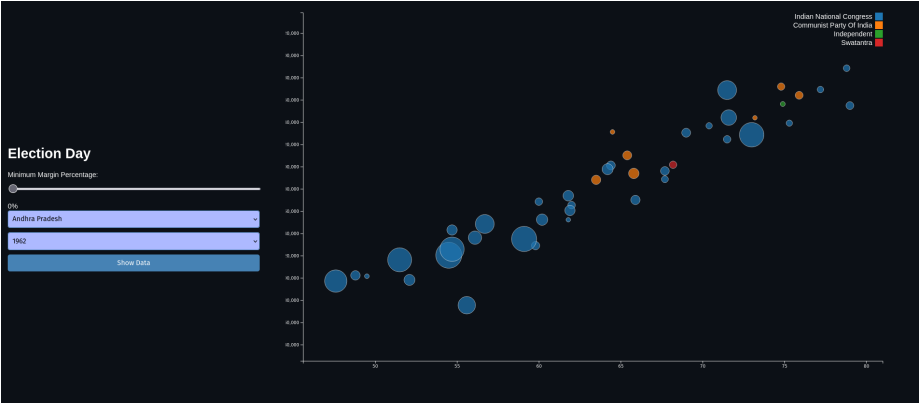


Figure 5: ScatterPlot Statewise based on % Margin

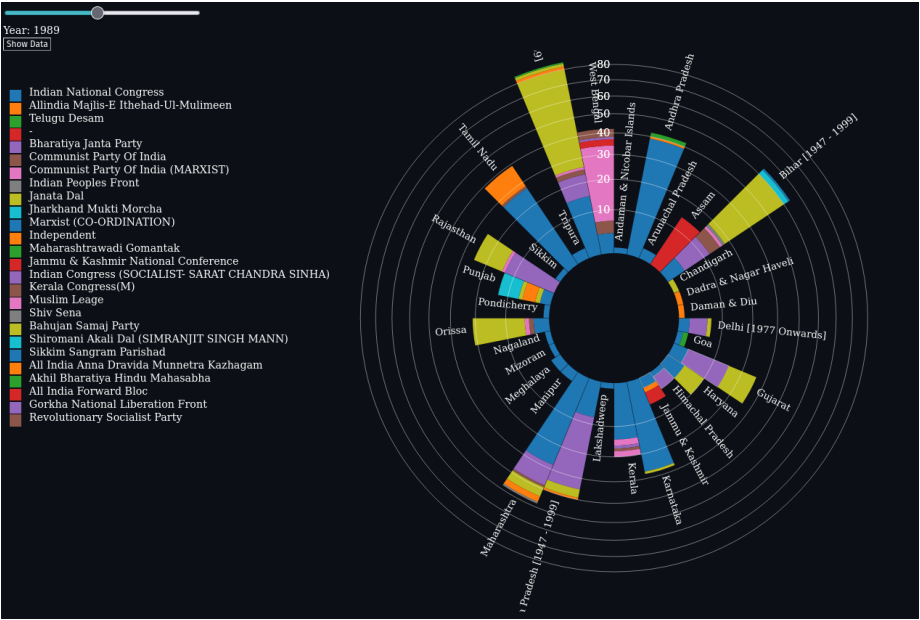


Figure 6: Radial Stacked Bar

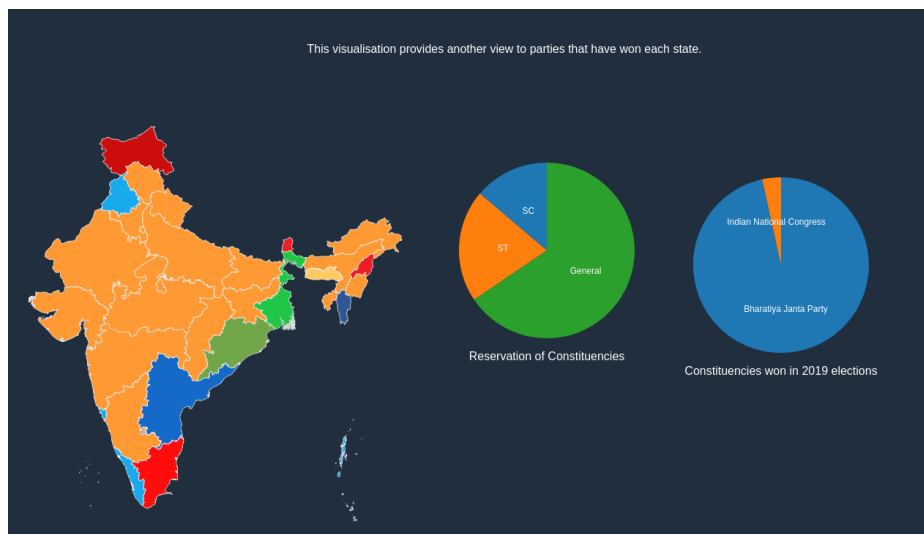


Figure 7: Statewise Maximum

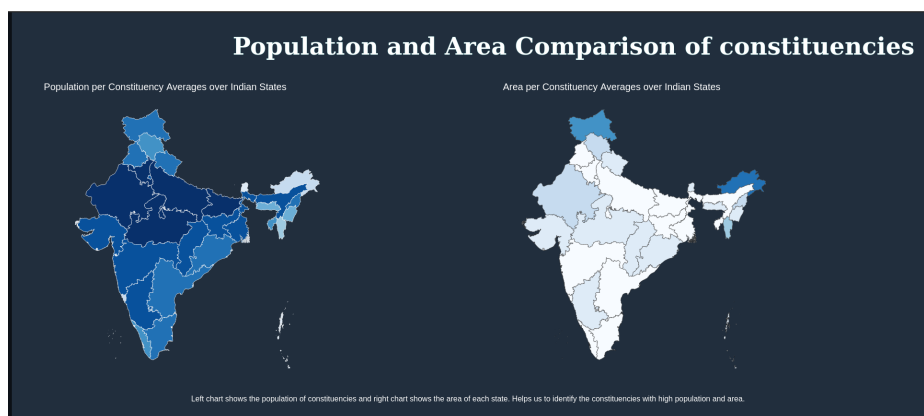


Figure 8: Statewise Population and Area per constituency

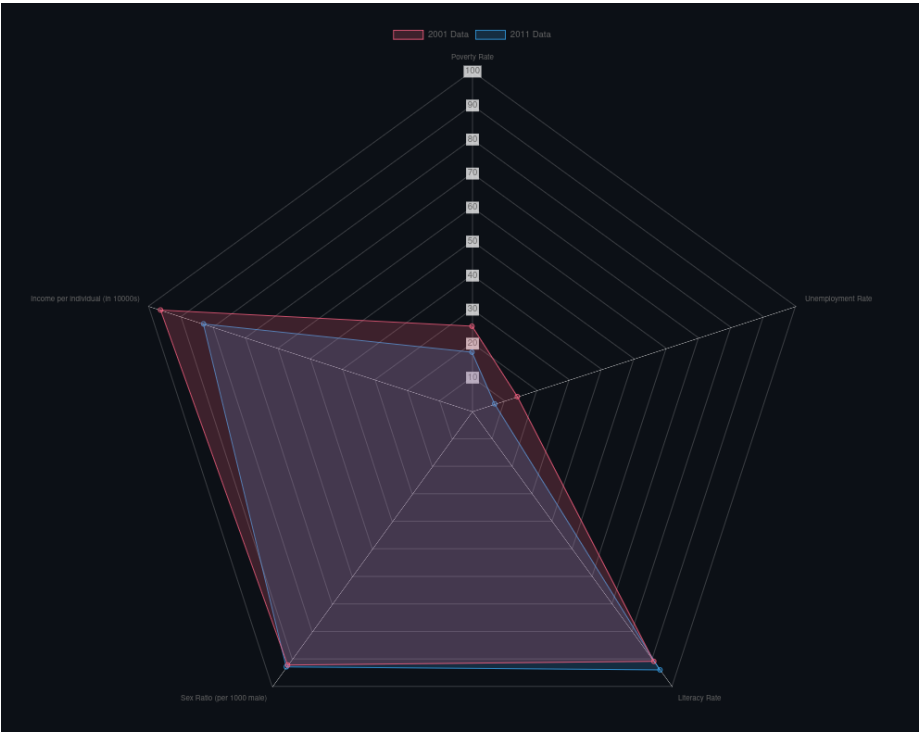


Figure 9: Various Metrics for population Analysis



Figure 10: Comparison between two parties

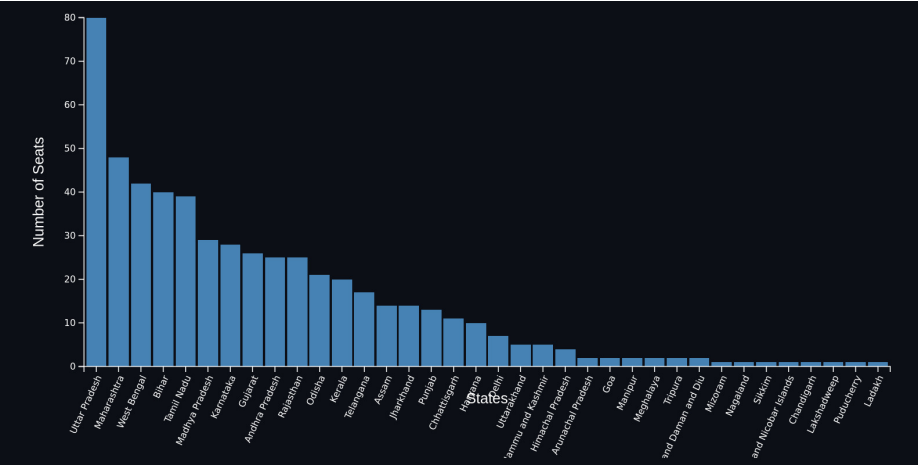


Figure 11: Seats in Parliament per state

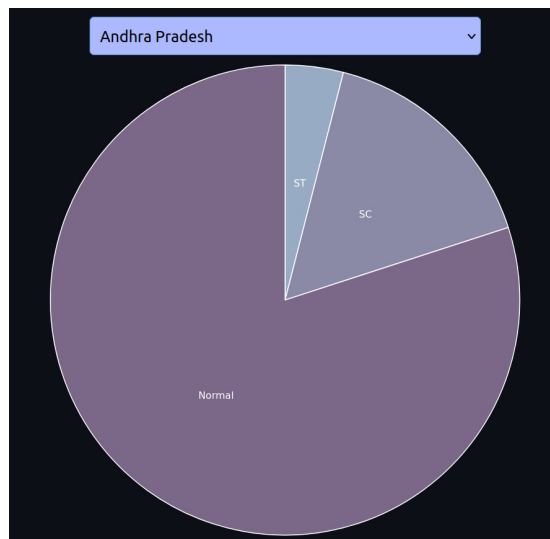


Figure 12: Reserved seats distribution: Andhra Pradesh

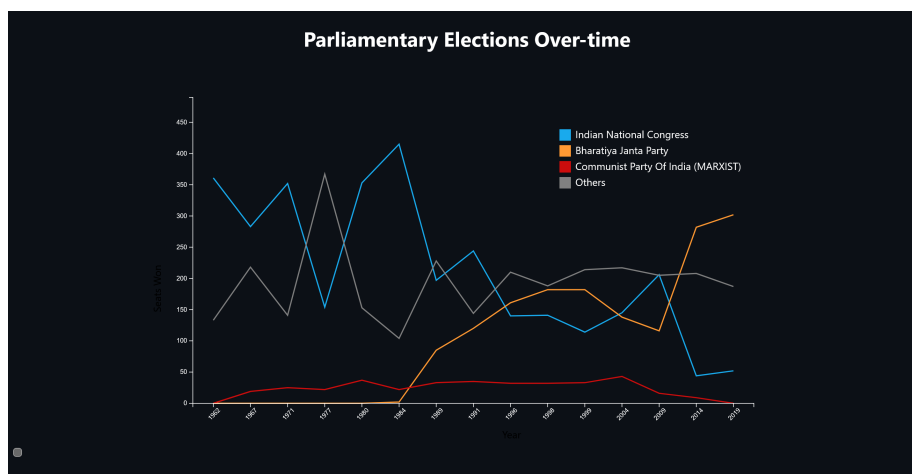


Figure 13: Election results(1962 - 2019)

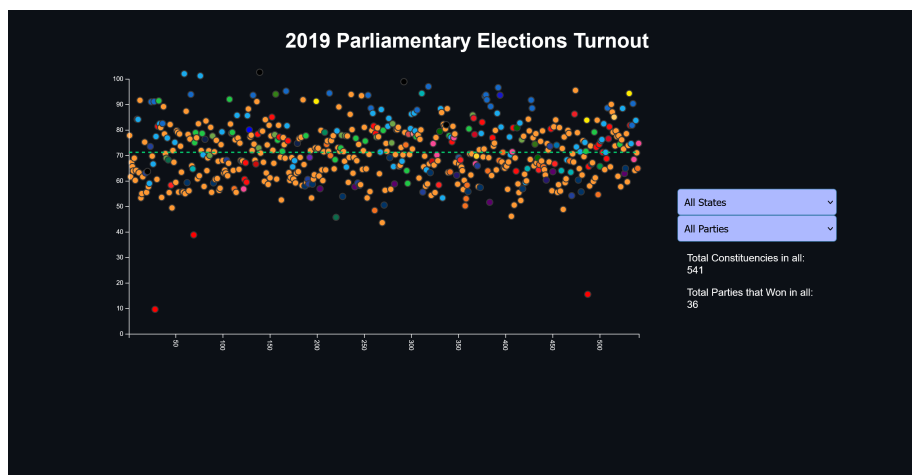


Figure 14: Turnout Scatterplot

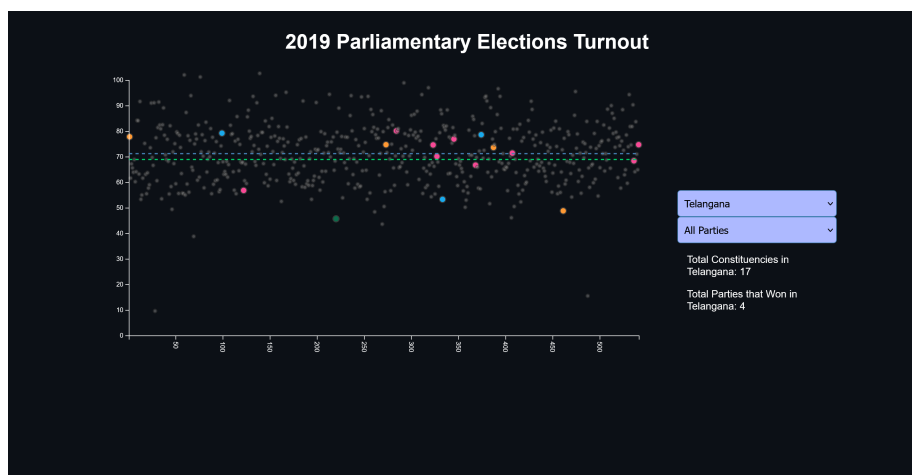


Figure 15: Turnout Scatter plot w/ State filtering

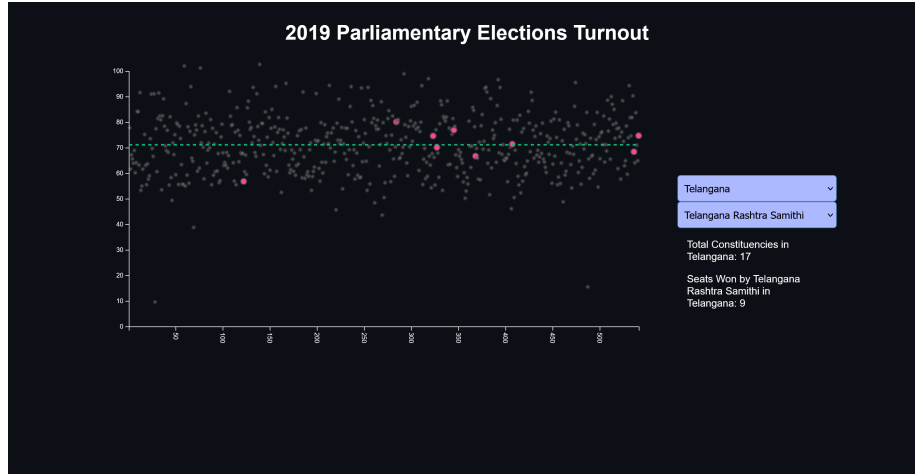


Figure 16: Turnout Scatter plot w/ State and party filtering

6 Future Possibilities and Scope

While our current progress lays a solid foundation for understanding India's electoral landscape, there are several avenues for further development and exploration:

- **Incorporating Historical Context:** Adding contextual information such as socio-economic factors, historical events, and policy changes can enrich our understanding of electoral trends and outcomes.
- **Predictive Modeling:** Integrating predictive modeling techniques can enable forecasting of future election outcomes based on historical data, offering valuable insights for stakeholders.
- **Census Analysis:** Analysis of the census data to get better insights for the electoral outcomes
- **State Assembly Elections:** Analysis of state assembly elections for comparative visualization of the Lok Sabha to understand in depth the nationalistic views of people

7 Conclusion

The vision of our project "India Votes" was to unravel the complexities of India's democracy through data visualization. By leveraging historical election data, we aimed to provide valuable insights for voters, politicians, political parties, press, and analysts. We aspire to have offered a comprehensive understanding of India's electoral landscape, empowering stakeholders to make informed decisions and contribute to our ever evolving democracy.