INDIA GENERAL ELECTION RESULTS ANALYSIS – 2024

Problem Statement:

During the 2024 Indian General Elections, a large volume of constituency- and candidate-level data was collected. However, this data was scattered, unstructured, and difficult to analyze, making it challenging for political analysts and strategists to quickly extract key insights, such as seat distribution, close contests, and party performance. This is a significant problem because political campaigns must use their time, money, and resources efficiently, and confusing or disorganized data can lead to poor strategic decisions.

To address this, this project uses a publicly available Kaggle dataset (CSV) and implements an end-to-end solution combining SQL and Power BI. The workflow involves data cleaning, aggregation, and joining of multiple tables in SQL, followed by the creation of interactive dashboards, charts, and maps in Power BI. This allows decision-makers to explore election results at national, state, and constituency levels in a clear and intuitive way.

The objective of this project is to demonstrate how a well-designed business intelligence platform can transform complex election data into actionable insights, helping users move from data chaos to strategic clarity and make informed, effective decisions.

1. Design a centralized Landing Page in Power BI that enables one-click access to the four key dashboards: Overview Analysis, State Demographics, Political Landscape by State, and Constituency Analysis. Ensure a consistent 'Home' button is available on all pages, and incorporate visual cues such as icons, color coding, and hover effects to provide stakeholders with an intuitive and seamless user experience. **(Landing Page Dashboard)**

2. Design interactive dashboard that includes key performance indicators (KPIs) such as total seats won and percentage of seats secured by the NDA alliance, the I.N.D.I.A. alliance, and Independent/Other parties. The dashboard should incorporate detailed grid matrices, drill-through capabilities, interactive analysis, and bookmarked views for quick access. It should also provide party-level insights within the NDA and I.N.D.I.A. alliances, displaying each party's seat count alongside official logos, and leverage effective data visualization practices to ensure clarity, usability, and actionable insights for stakeholders. **(Overall Analysis Dashboard)**

3. **State Demographics Analysis Dashboard**
   i. Build dashboard should contain KPIs such as total seats, winning alliance, NDA seats, and I.N.D.I.A. seats per state, visualized using map charts with tooltips and drill-through to detailed grid tables.
   ii. Display winning candidates, party alliance, party name, total votes, winning margin by state/constituency including drill-through to constituency-level data.

iii. Identify states with the maximum seats won by either NDA or I.N.D.I.A. with drill-through to show state-level performance.

4. Design a stakeholder-focused dashboard that displays key performance indicators (KPIs) such as seats won by the NDA alliance, I.N.D.I.A. alliance, and Independent/Other parties. The dashboard should visualize the selected state with its constituency boundaries and showcase the percentage share of total seats won by each party within the selected state through slicer. **(Political Landscape by State Dashboard)**

5. Design a dashboard that displays primary KPIs for the selected constituency(slicer), including total votes cast, EVM votes recorded, postal votes counted, and total candidates. It should provide a candidate performance overview, highlighting the winning, runner-up, and second runner-up candidates with their state, name, party affiliation, total votes secured, and vote share percentage. **(Constituency Level Analysis Dashboard)**

6. Design a dashboard that provides a comprehensive tabular view of constituency-level election results, including constituency name, winning and runner-up candidates, party name and alliance, EVM votes, postal votes, total votes, and margin. Enable stakeholders to drill through from other dashboards to explore detailed data for specific states or constituencies. Include functionality to export the grid data for further analysis. Provide a 'Show All Data' button using bookmarks to reset filters and display all relevant information. **(Details Grid view Dashboard)**

Dataset Details:

The analysis is based on five core CSV files sourced from GitHub, which form the basis of the data model.

- **Constituencywise Details:** Dimension table providing demographic and structural information for each constituency.
- **Constituencywise Results:** The primary fact table containing detailed, candidate-wise vote counts at the constituency level.
- **States:** Dimension table containing details of all states and union territories.
- **Partywise Results:** Summary table with aggregated election outcomes for each political party.
- **Statewise Results:** Summary table with aggregated election outcomes at the state level.

Tools & Technologies Used:

- **SQL:** Used SQL queries with functions like Window functions, CTE's, Joins, GROUP BY, ORDER BY to analyze election results
- **Power BI:** Dashboards, DAX functions, Data Modeling, Drill-through, Bookmarks, Slicer, KPI cards, Charts

Methodology:

The analysis was performed in three distinct phases: data preparation in SQL, modeling in Power BI, and interactive dashboard development.

1. Data Processing and Analysis (SQL)

The initial data preparation and analysis were conducted using SQL to create a clean, aggregated dataset for visualization.

- **Data Integration and Ranking:** A **Common Table Expression (CTE)** and **the ROW_NUMBER() window function** were used to rank candidates by vote count within each constituency, identifying winners and runners-up.
- **Aggregation:** The **GROUP BY** and **ORDER BY** clauses were used to calculate and sort key metrics, such as party seat distribution and state-level performance.

2. Data Modeling and Enrichment (Power BI)

The processed data was imported into Power BI for modeling and enhancement.

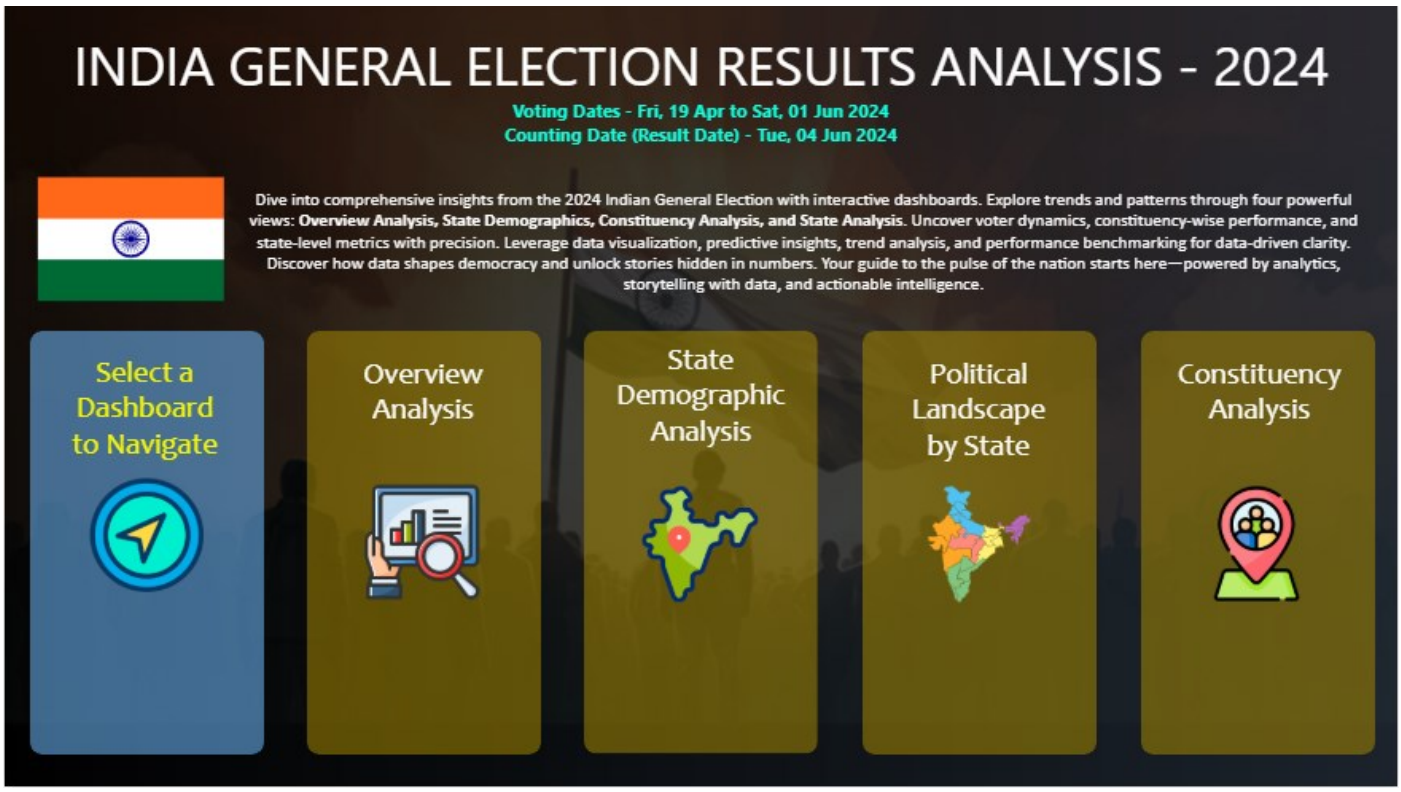
- **Data Modeling:** A star schema was implemented to create an efficient and scalable data model, with constituencywise results as the central fact table.
- **DAX Calculations:** Data Analysis Expressions (DAX) were written to create key business metrics like Vote Share % and Winning Margin, adding analytical depth.

3. Interactive Dashboard Development (Power BI)

An interactive dashboard was built to provide an intuitive interface for exploring the election results.

- **User Interactivity:** The dashboard was equipped with several features to empower user-driven analysis:
    - **Slicers:** Filters for State and Constituency were added for high-level data exploration.
    - **Drill-Through:** Functionality was configured to allow users to navigate from a summary view to a detailed report page.
    - **Bookmarks:** Pre-set views were created to allow users to quickly toggle between different analytical scenarios.
    - **Home Buttons:** provides a consistent one-click method to return to the main summary dashboard

1. Landing Page: Introduction

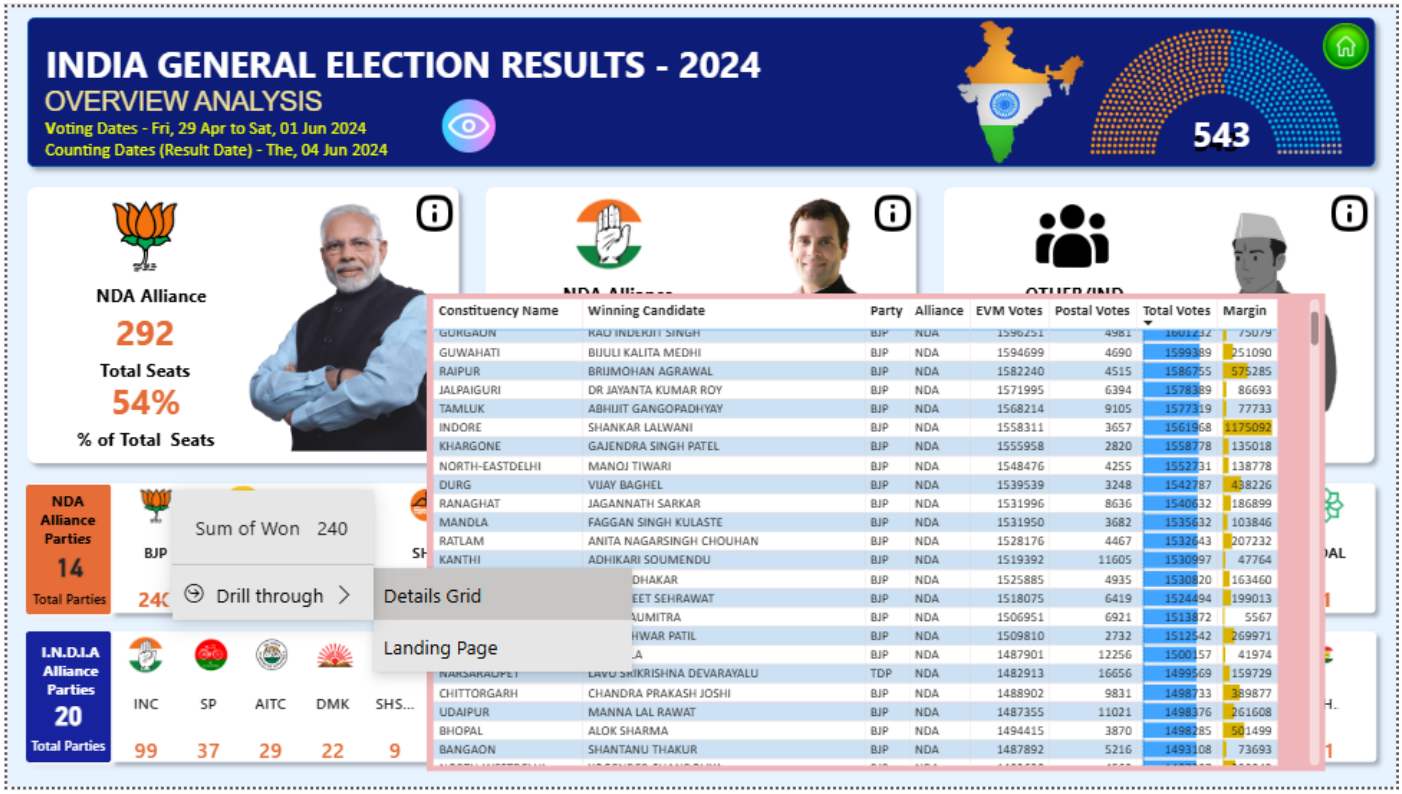


The landing page establishes the context by presenting the 2024 Indian General Election timeline, including the voting and counting dates, to ground the analysis in its real-world setting. Alongside this, a project introduction highlights the purpose of the report—making complex electoral data accessible and guiding users through different perspectives such as national outcomes, state-level demographics, and constituency-level insights.

To meet this objective, the landing page was designed as an interactive hub. A concise description at the top summarizes the scope of the analysis, while clearly labeled navigation icons connect users to the four key dashboards: Overview Analysis, State Demographic Analysis, Political Landscape by State, and Constituency Analysis. The design emphasizes clarity, usability, and smooth navigation, ensuring that users can transition effortlessly between high-level and detailed views.

As a result, the landing page delivers a cohesive outcome: it not only introduces the project's scope but also transforms the report into a structured analytical journey. Users gain both orientation and control, enabling them to explore electoral insights with ease and precision

2. Overview Analysis: The National Mandate



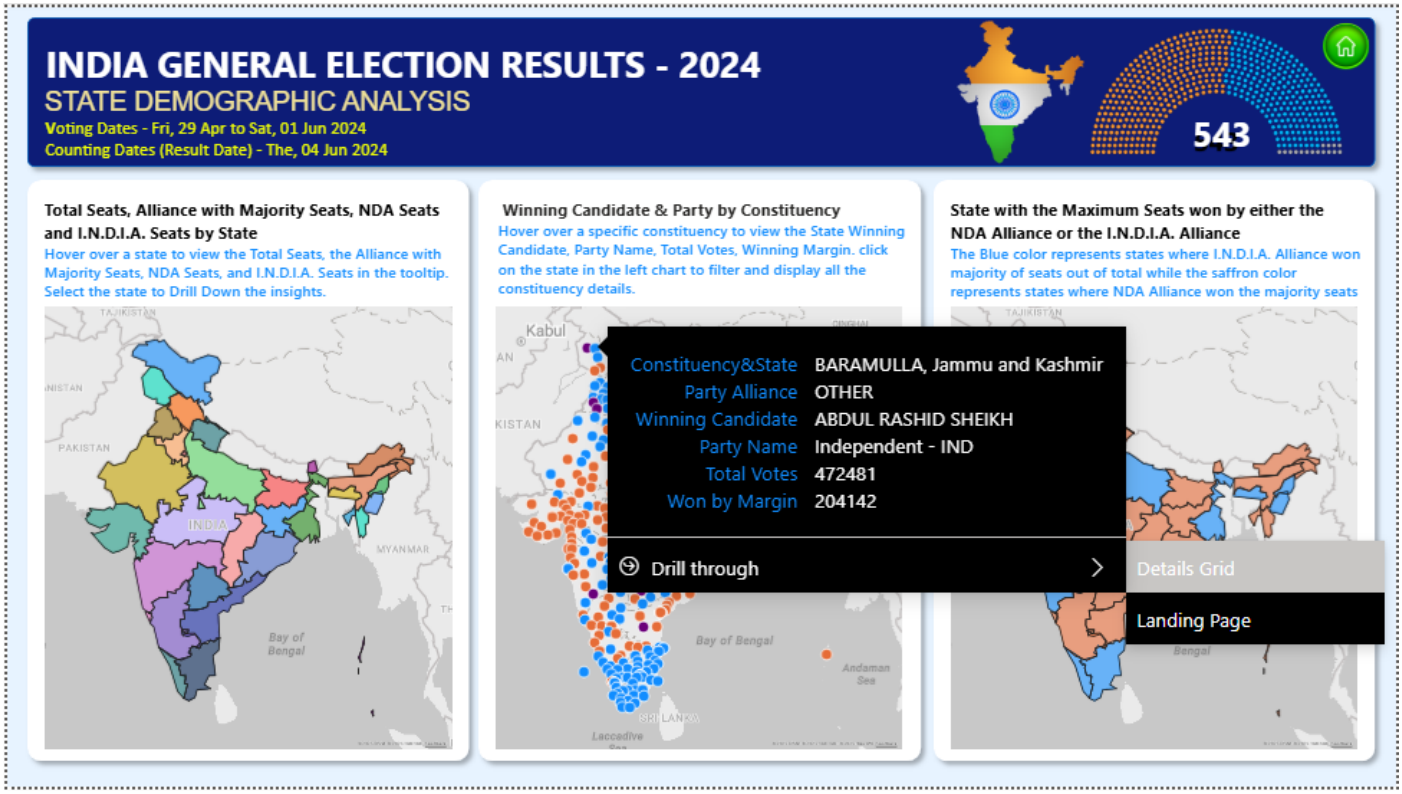
In analyzing the 2024 Indian General Election results, the raw data was complex and difficult for stakeholders to quickly interpret, especially concerning the performance dynamics between the two major political alliances. My objective was to design and build a business intelligence dashboard that would transform this data into clear, actionable insights, enabling users to analyze results at both the coalition and individual party levels.

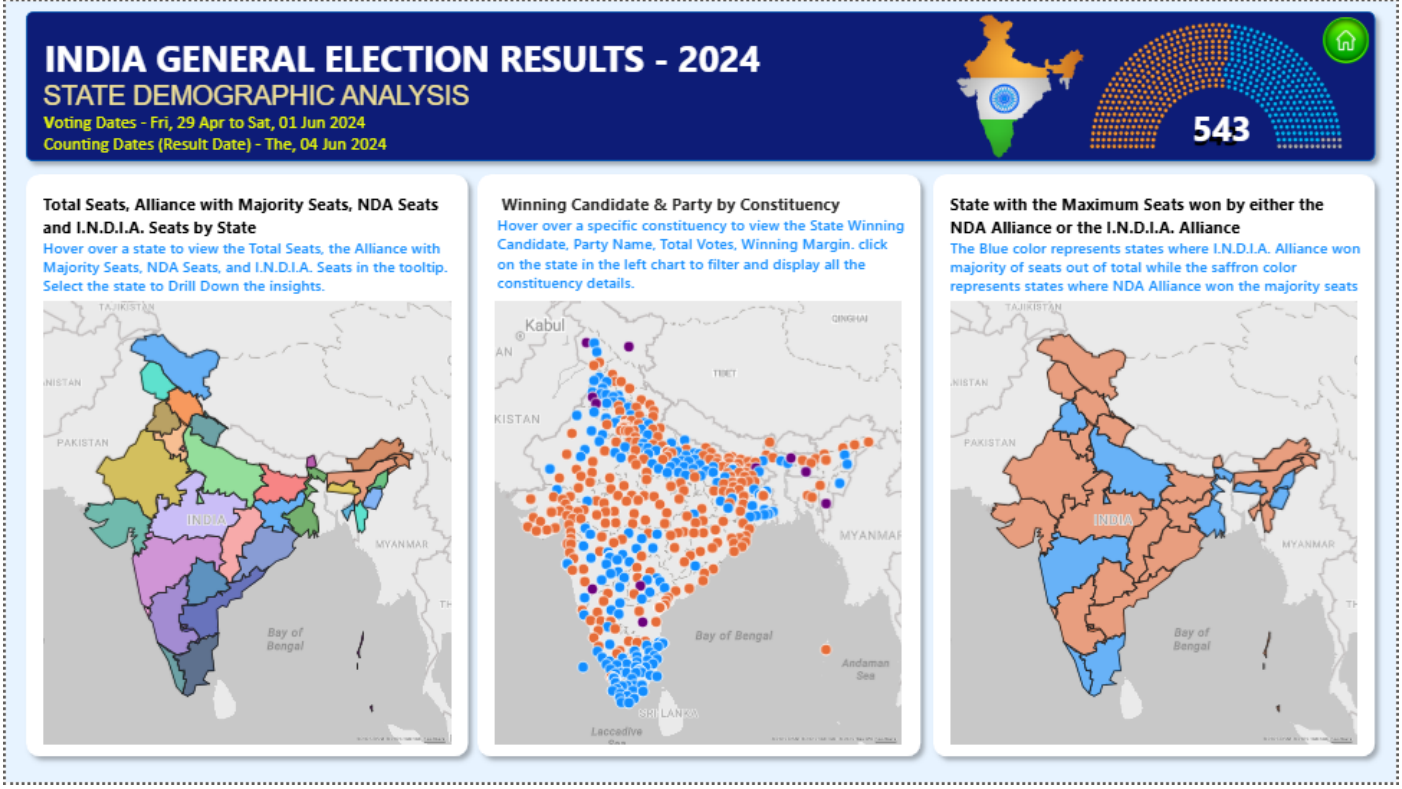
To achieve this, I developed these interactive dashboard that prominently featured key performance indicators for the overall seat distribution. I implemented **bookmarks** through **I Button** to create dedicated, clean views for the NDA, I.N.D.I.A, and Other alliances Button to provide on-demand contextual details. And also added drill-through capability enabled on both the NDA and I.N.D.I.A. alliance cards, allowing users to seamlessly navigate to a detailed party-wise performance breakdown within each coalition. The main dashboard clearly presented the final results:

- **NDA Alliance:** 292 Seats (54% Vote Share)
- **I.N.D.I.A. Alliance:** 234 Seats (43% Vote share)
- **Other/IND:** 17 Seats (3% Vote Share)

The resulting dashboard provided a dynamic and intuitive tool that successfully simplified the complex electoral landscape. It empowered users to move from a high-level overview to granular party-level analysis, delivering clear strategic insights into the composition and strength of the political alliances and demonstrating an ability to create professional, data-driven reports.

3. State Demographic Analysis: Uncovering Regional Patterns





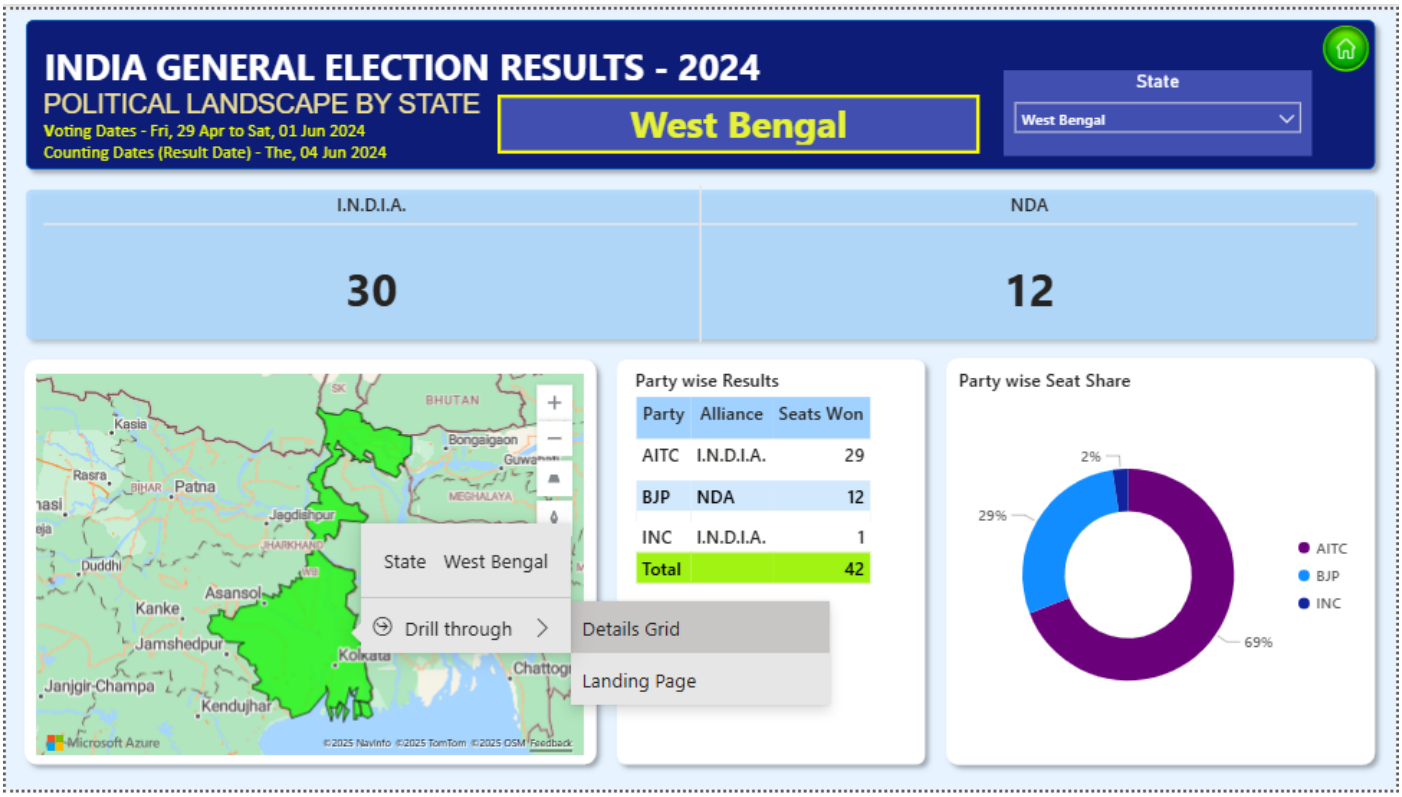
These dashboard built to analyze the 2024 General Election results, focusing on **regional level demographic voting patterns.**

The **Azure Map Chart1** was developed to **provide a state-wise view** of total seats, while distinguishing the performance of NDA and I.N.D.I.A. alliances. Users can hover over a state to access detailed insights, including majority-holding alliances and seat counts, and use the drill-down feature for deeper analysis. This visualization ensures a professional, data-driven representation of electoral outcomes across the country.

The purpose of this **Azure map chart2** developed to present a detailed view of the 2024 General Election results at the **constituency level**. It highlights key information such as the **state, constituency, party alliance, party name, winning candidate, total votes, and winning margin.** Users can interact with the visualization by hovering over constituencies for quick insights or filtering by state for deeper analysis. This ensures a professional and comprehensive understanding of electoral outcomes across regions.

The reason of this **Azure map chart3** made to **showcase the who own states with the maximum seats won** by either the NDA or the I.N.D.I.A. alliance in the 2024 General Election. It visually distinguishes results using colors, where saffron represents NDA majority states and blue represents I.N.D.I.A. majority states. The chart highlights the dominant alliance in each state, enabling quick comparisons of regional strongholds. Users can interact with the visualization to gain a clearer perspective on overall seat distribution. This provides a professional and concise representation of alliance performance at the state level.

4. Political Landscape by State: Analyzing Regional Political Power Dynamics



The 2024 General Election results required a comprehensive and multi-level analysis to understand outcomes at the alliance, party, and constituency levels across India.

The objective was to design interactive dashboards that provide insights into alliance performance (NDA, I.N.D.I.A., and Others), party-wise results, geospatial distribution, and proportional seat sharing within selected states.

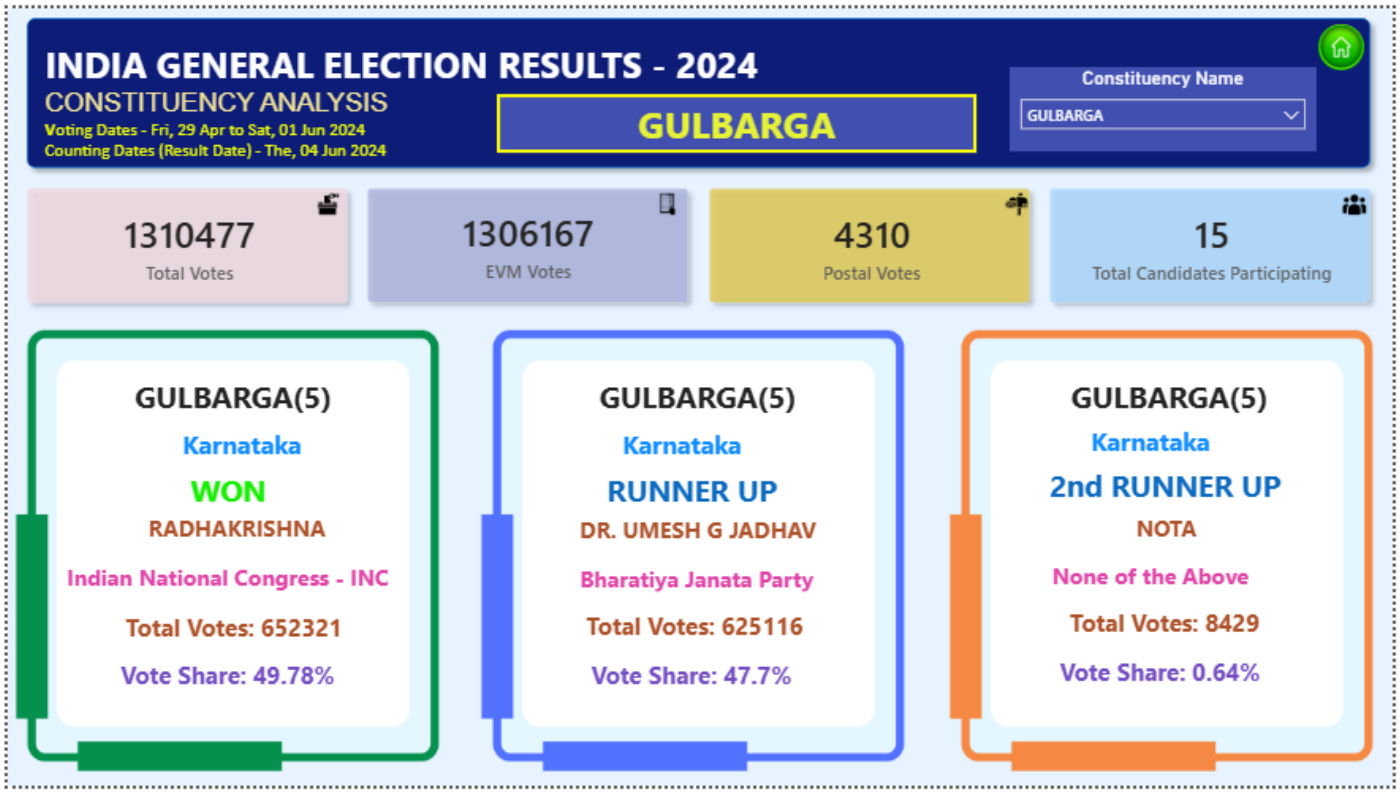
Multiple visualizations were implemented to achieve this:

- **New Card:** Demonstrates the total seats won by NDA, I.N.D.I.A., and Other alliances in a selected state using slicers.
- **Azure Map Chart (Geospatial Analysis):** Used to displays state constituencies on a map to highlight geographical distribution of wins and reveal regional strongholds.

- **Party-wise Result Grid:** Used to Provide a clear tabular view of party name, alliance, and the number of seats won within a selected state.
- **Party-wise Seat Share Donut Chart:** Illustrates the proportional distribution of seats among parties in a selected state, enabling easy comparison of party performance.

The integrated dashboards deliver a professional, interactive, and data-driven representation of the election outcomes. Users can explore results by alliance, party, constituency, and geography, gaining actionable insights into regional strengths and electoral trends.

5. Constituency Analysis: Identifying Key Battlegrounds



The 2024 General Election required a comprehensive analysis of **constituency-level outcomes** to provide insights into **voter behavior, candidate performance, and party competitiveness**.

The objective was to capture high-level election metrics alongside **detailed candidate-level results for each constituency**, enabling a clear understanding of voting patterns and competitive dynamics.

Multiple Primary KPI's and Metrics were implemented to achieve this:

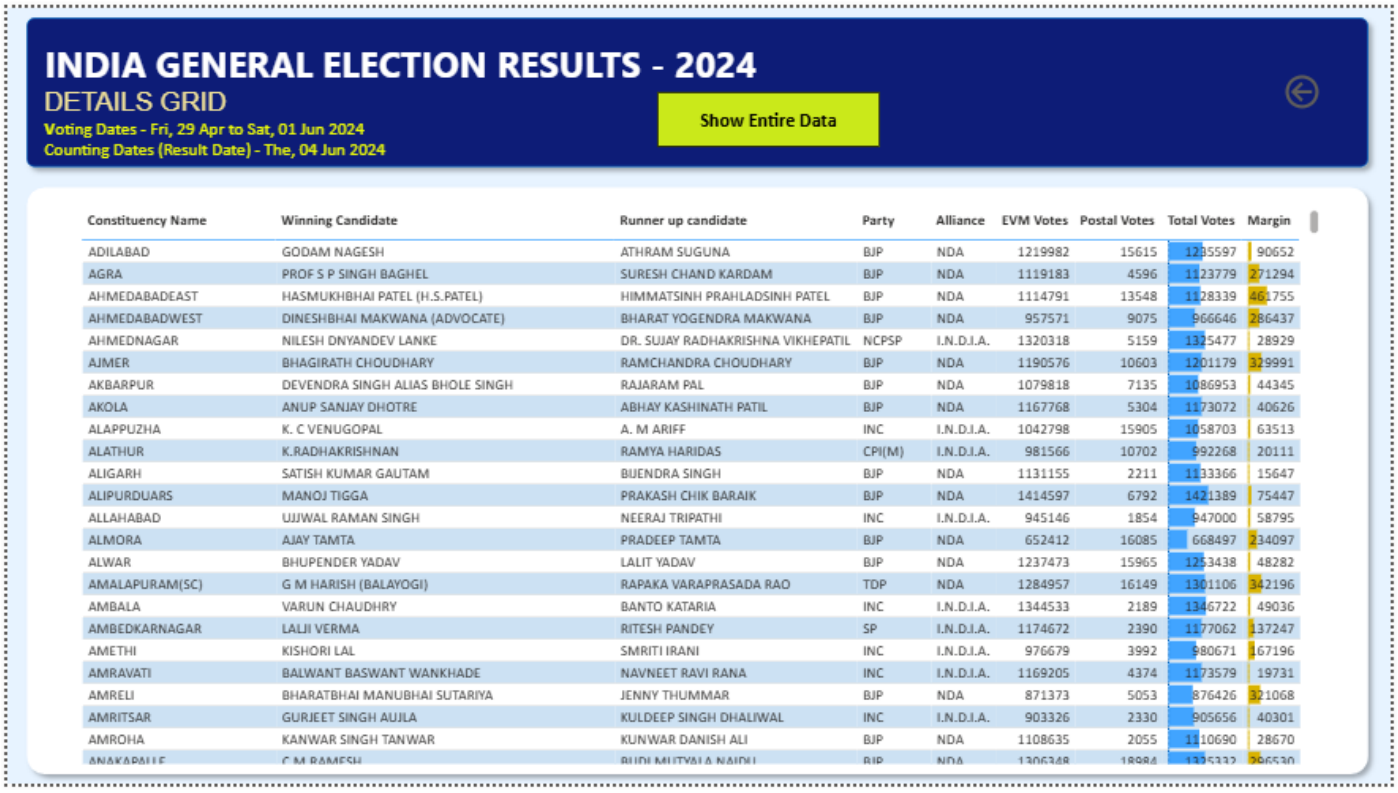
Primary KPI's: Provide a comprehensive overview of constituency-level election activity. They include **the total votes cast, total EVM votes recorded, total postal votes counted, and the total number of candidates participating**. These metrics help in understanding voter engagement, the scale of electoral participation, and the competitive landscape within each constituency. By analyzing these KPIs, stakeholders can assess overall election performance and identify constituencies with high or low voter turnout for informed decision-making and reporting.

Candidate-level Metrics: Provide detailed insights into individual performance within each constituency. These include the **state name, winning candidate's name, party affiliation, total**

votes secured, and the vote share percentages of the winning candidate, runner-up, and second runner-up. Analyzing these metrics helps in understanding the competitive dynamics of each constituency, highlighting margins of victory and relative party performance. It enables stakeholders to assess electoral outcomes, compare candidate performance.

The dashboards provided a professional, data-driven perspective of electoral outcomes, allowing users to analyze voting trends, identify competitive races, and assess party and candidate performance for actionable insights.

6. Details Grid View: Empowering Data Explorations



Constituency Name	Winning Candidate	Runner up candidate	Party	Alliance	EVM Votes	Postal Votes	Total Votes	Margin
ADILABAD	GODAM NAGESH	ATHRAM SUGUNA	BJP	NDA	1219982	15615	1235597	90652
AGRA	PROF S P SINGH BAGHEL	SURESH CHAND KARDAM	BJP	NDA	1119183	4596	1123779	271294
AHMEDABADEAST	HASMUKHBHAI PATEL (H.S.PATEL)	HIMMATSINH PRAHLADSINH PATEL	BJP	NDA	1114791	13548	1128339	461755
AHMEDABADWEST	DINESHBHAI MAKWANA (ADVOCATE)	BHARAT YOGENDRA MAKWANA	BJP	NDA	957571	9075	966646	286437
AHMEDNAGAR	NILESH DNYANDEV LANKE	DR. SUJAY RADHAKRISHNA VIKHEPATIL	NCPSP	I.N.D.I.A.	1320318	5159	1325477	28929
AJMER	BHAGIRATH CHOUDHARY	RAMCHANDRA CHOUDHARY	BJP	NDA	1190576	10603	1201179	329991
AKBARPUR	DEVENDRA SINGH ALIAS BHOLE SINGH	RAJARAM PAL	BJP	NDA	1079818	7135	1086953	44345
AKOLA	ANUP SANJAY DHOTRE	ABHAY KASHINATH PATIL	BJP	NDA	1167768	5304	1173072	40626
ALAPPUZHA	K. C VENUGOPAL	A. M ARIFF	INC	I.N.D.I.A.	1042798	15905	1058703	63513
ALATHUR	K.RADHAKRISHNAN	RAMYA HARIDAS	CPI(M)	I.N.D.I.A.	981566	10702	992268	20111
ALIGARH	SATISH KUMAR GAUTAM	BIJENDRA SINGH	BJP	NDA	1131155	2211	1133366	15647
ALIPURDUARS	MANOJ TIGGA	PRAKASH CHIK BARAIK	BJP	NDA	1414597	6792	1421389	75447
ALLAHABAD	UJJWAL RAMAN SINGH	NEERAJ TRIPATHI	INC	I.N.D.I.A.	945146	1854	947000	58795
ALMORA	AJAY TAMTA	PRADEEP TAMTA	BJP	NDA	652412	16085	668497	234097
ALWAR	BHUPENDER YADAV	LALIT YADAV	BJP	NDA	1237473	15965	1253438	48282
AMALAPURAM(SC)	G M HARISH (BALAYOGI)	RAPAKA VARAPRASADA RAO	TDP	NDA	1284957	16149	1301106	342196
AMBALA	VARUN CHAUDHRY	BANTO KATARIA	INC	I.N.D.I.A.	1344533	2189	1346722	49036
AMBEDKARNAGAR	LALJI VERMA	RITESH PANDEY	SP	I.N.D.I.A.	1174672	2390	1177062	137247
AMETHI	KISHORI LAL	SMRITI IRANI	INC	I.N.D.I.A.	976679	3992	980671	167196
AMRAVATI	BALWANT BASWANT WANKHADE	NAVNEET RAVI RANA	INC	I.N.D.I.A.	1169205	4374	1173579	19731
AMRELI	BHARATBHAI MANUBHAI SUTARIYA	JENNY THUMMAR	BJP	NDA	871373	5053	876426	321068
AMRITSAR	GURJEET SINGH AUJLA	KULDEEP SINGH DHALIWAL	INC	I.N.D.I.A.	903326	2330	905656	40301
AMROHA	KANWAR SINGH TANWAR	KUNWAR DANISH ALI	BJP	NDA	1108635	2055	1110690	28670
ANAKAPALLE	C M RAMESH	BUDI MUTYALA NAIDU	BJP	NDA	1306348	18984	1325332	266530

In electoral data analysis, a need emerged for a user-friendly tool to examine constituency-level results, enabling smooth transitions from overview dashboards to detailed insights. The task involved creating an interactive dashboard for data exploration, drill-through from other dashboards, and exporting data to analyze voting patterns, candidates, and parties. I designed the Details Grid as a tabular interface with interactive features for drilling into specific constituencies from connected dashboards

Functionalities

1. Drill-Through Capability:

Users can drill through from other dashboards (State Analysis, Constituency Analysis, etc.) to view the detailed underlying data for a specific state or constituency.

2. Data Export Option:

The grid should allow users to export the data as an Excel file for further

external analysis.

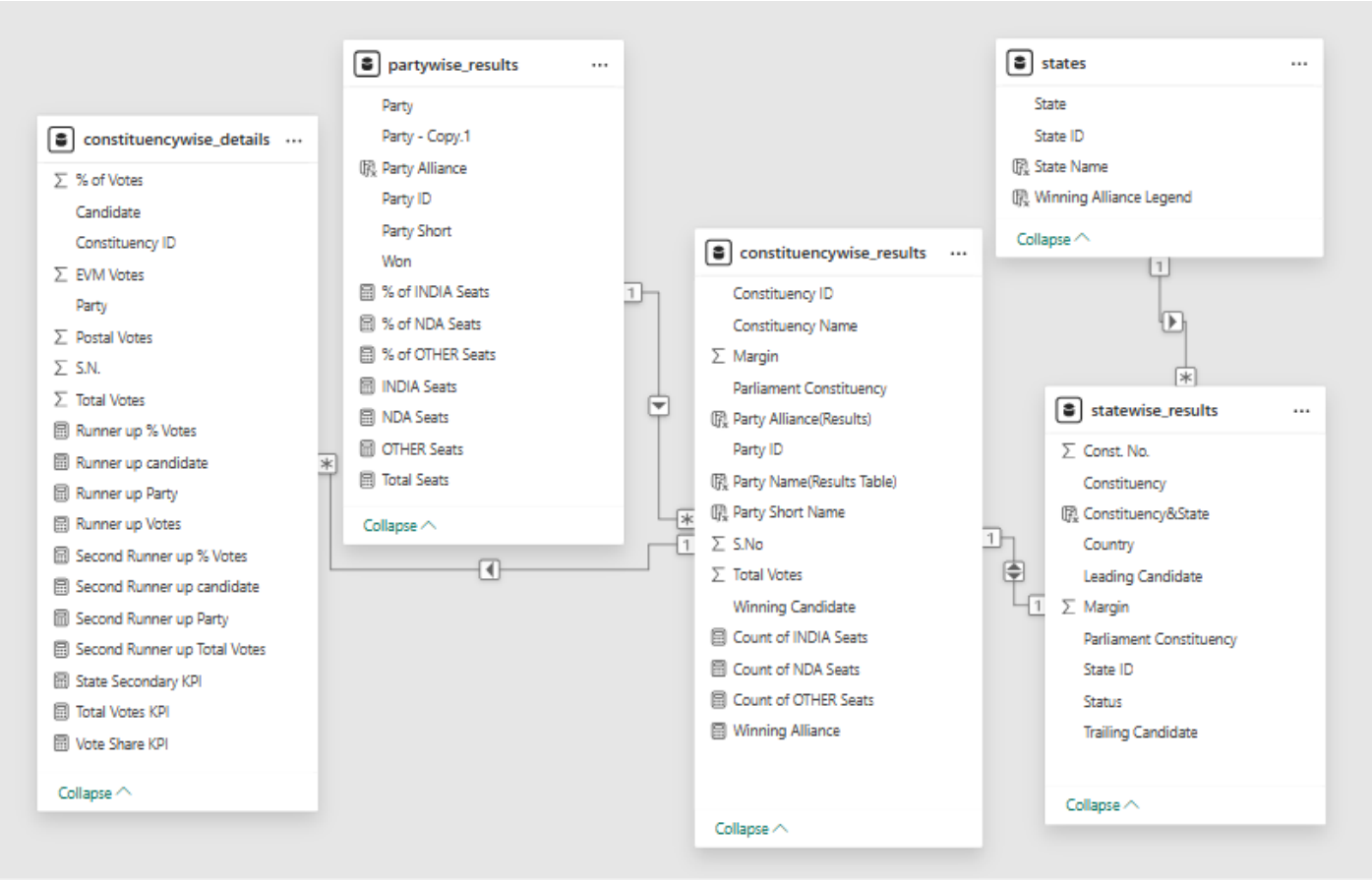
3. Show Entire Data Button (Using Bookmark):

A button will be provided to refresh the grid and display all relevant data

after filters are applied and drill-through actions are performed.

These dashboard delivers a professional, organized, and data-driven approach to electoral outcomes. Users can efficiently uncover insights into voting trends, candidate effectiveness, and party dynamics, leading to more informed decision-making and enhanced analytical capabilities.

7. Data Modeling: Establishing Relationship Between Data Tables



The raw data for the 2024 General Election was distributed across multiple CSV files with large volumes of candidate and constituency information. Loading this data as a single flat table in Power BI resulted in redundancy, poor performance, and limited analytical flexibility. To overcome these challenges, a structured data model was required to enable accurate, fast, and multi-dimensional reporting.

A star schema approach was implemented, with Constituencywise_results serving as the central fact table and Constituencywise_details providing granular candidate-level information. Supporting dimension tables included Partywise_results for party and alliance details, States for geographical classification, and Statewise_results as a bridge between constituencies and states. Relationships were defined as: constituencywise_details → constituencywise_results (Constituency ID), Constituencywise_results → partywise_results (Party ID), constituencywise_results →

statewise_results (Constituency ID), constituencywise_results → statewise_results (Parliament Constituency), and statewise_results → states (State ID).

The result was a high-performance, interactive dashboard with fast filter responses and accurate insights. Users could drill down from national to candidate-level analysis, compare party and alliance performance across states, and study victory margins and runners-up. Data redundancy was minimized, integrity was ensured with consistent naming, and stakeholders gained a powerful analytical tool for exploring election results.

Key Insights:

1. National Alliance Dominance: The 2024 election results showed NDA leading with 292 seats and 54% vote share, while I.N.D.I.A. secured 234 seats and 43%. Independent/Other parties won 17 seats with 3%, reflecting a coalition-driven national mandate.

2. Regional and State-Level Patterns: State demographic analysis highlighted NDA-majority states in saffron and I.N.D.I.A.-majority states in blue. Map charts and drill-through features revealed regional strongholds and seat dominance by alliances.

3. Constituency-Specific Dynamics: Detailed constituency data showed battlegrounds with close margins, voter turnout, and candidate competition. Metrics on EVM votes, postal votes, and runner-up shares emphasized engagement differences across seats.

4. Party-Wise Contributions Within Alliances: Donut charts and grids visualized party-level seat distributions within alliances. These insights clarified individual party strengths and their contribution to overall alliance performance.

5. Data Accessibility and Usability: Scattered datasets were consolidated into intuitive dashboards with slicers, bookmarks, and exports. This integration enabled smooth navigation from national summaries to granular constituency insights.

6. Analytical Insights for Strategy: The dashboards provided actionable intelligence for alliance strategies. From identifying competitive constituencies to understanding regional dominance, the platform enabled data-driven planning.

Suggestions:

1. Target Competitive Constituencies: Use the Details Grid View to find narrow-margin seats and allocate funds, rallies, and volunteers effectively. Tailor campaign messaging with turnout and vote share data to maximize impact.

2. Optimize Resource Allocation: Focus resources on high seat-potential states identified via demographic dashboards and geospatial insights. Efficient deployment strengthens weak regions while consolidating strongholds.

3. Strengthen Regional Alliances: Azure Map Charts highlight states where alliances underperform, guiding stronger partnerships. Adjusting coalition strategies by seat distribution optimizes representation and power.

4. Craft Data-Driven Messaging: Use KPIs like vote share, turnout, and total votes to design targeted campaign narratives. Emphasizing key economic or social issues ensures voter alignment and resonance.

5. Enhance Voter Outreach: Constituency-level turnout and vote share data guide outreach to undecided voters. Regional demographic patterns ensure localized messaging and higher engagement.

6. Utilize Interactive Tools: Leverage slicers and drill-throughs to monitor voter trends in swing constituencies. Exporting grid data allows quick adjustments to stay agile and adaptive.

Conclusion:

The 2024 Indian General Election reflected a coalition-driven mandate, with NDA leading nationally while I.N.D.I.A. remained a strong challenger. these Dashboards consolidated scattered datasets into interactive visualizations, enabling actionable insights and data-driven strategic planning.

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