Infosys Springboard Virtual Internship 6.0 Completion Report

Team

Batch Number: 2

Start date :4-SEPT-2025

Names:

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Boomika B
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Internship Duration: 8 Weeks

1. Project Title

ElectViz Election Data Visualization for Media

2.Project Objective

The main objective of the project **"ElectViz - Election Data Visualization for Media"** was to design and develop an **interactive Power BI dashboard** that enables intuitive exploration and understanding of large-scale **Lok Sabha election data**. The goal was to transform raw, complex, and multi-dimensional datasets into a visually engaging and analytically rich format suitable for **media reporting, policy discussions, and data-driven decision-making**.

This project aimed to bridge the gap between **data complexity and public comprehension** by presenting electoral outcomes, vote shares, and state-level participation trends through dynamic, user-friendly dashboards. By integrating **data analytics, storytelling, and visualization**, the team sought to empower journalists, analysts, and stakeholders to identify patterns such as party dominance, regional competitiveness, and voter engagement levels.

Aligned with **Infosys Springboard's mission of fostering applied learning and digital skill development**, this project encouraged the application of key analytical skills, including **data cleaning, transformation, DAX measure creation, and visual interpretation** using Power BI. It also emphasized collaborative teamwork, iterative problem-solving, and presentation of insights in a clear, professional format suitable for industry use.

Ultimately, *ElectViz* demonstrates how structured data visualization can enhance **transparency, accuracy, and accessibility** in reporting complex democratic processes, contributing to the broader goal of promoting informed citizen engagement through technology-driven media analytics.

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3. Project description

3.1 Overview

The project **"ElectViz – Election Data Visualization for Media"** focuses on designing an interactive and data-driven **Power BI dashboard** that presents **Lok Sabha election data** in a simplified, analytical, and visually engaging format.
The goal was to create a centralized visualization system capable of revealing trends in **party performance, voter turnout, state-wise variations, and voting patterns** in an understandable way for both technical and non-technical audiences, particularly for **media reporting and election coverage**.

Given the volume and complexity of election data, the project emphasizes the **power of data analytics and visualization** in extracting insights that are otherwise difficult to interpret from spreadsheets or static reports. ElectViz bridges this gap by using visual intelligence to narrate the story behind the numbers.

3.2 Project Approach

The project followed a structured, milestone-based approach over the 8-week internship period.
Each stage contributed to refining data quality, analytical accuracy, and the overall user experience of the Power BI dashboards.

Step 1 – Data Acquisition and Preprocessing:
The team collected the Lok Sabha election dataset, which contained detailed information such as constituency names, states, total votes, winning margins, party affiliations, and

voting modes (EVM and postal). The raw dataset was cleaned to remove duplicates, fill missing values, and standardize data types for smooth integration into Power BI.

Step 2 – Data Modeling:
Relationships were established between different tables (such as states, constituencies, and party performance). Custom **DAX (Data Analysis Expressions)** measures were created to calculate metrics such as *Total Votes, Vote Share %, Winning Margin,* and *Party-wise Performance*. This modeling ensured accurate aggregation and interactivity across the dashboard visuals.

Step 3 – Dashboard Design and Development:
Using Power BI's visualization capabilities, six dashboards were created:

1. Introduction and Overview
2. National-Level Summary
3. State-Wise Analysis
4. Party Performance Analysis
5. Vote Share Trends
6. EVM vs Postal Votes Comparison

Each dashboard was designed with a consistent layout, filters, and interactive elements for dynamic exploration of the data.

Step 4 – Review, Testing, and Optimization:
The dashboards underwent multiple review cycles to check accuracy, interactivity, and responsiveness. Visuals were refined for clarity, and tooltips were added to enhance interpretability. The team focused on optimizing the dashboards for both analytical depth and presentation aesthetics.

Dashboard Modules

National Overview Panel

- Presented **India-level metrics** such as total votes, candidates, constituencies, and parties.
- Integrated **map visuals** for state wise vote distribution and **bar/pie/donut charts** for party performance, vote share, and winner–runner-up trends.
- Used **KPI cards** with dynamic colour codes to emphasize dominant parties and key election indicators.

ELECTVIZ – Party Identification Panel

- Served as a **visual index** for quick recognition of political parties.
- Featured **color-coded tiles** with party names, acronyms, and logos for better usability.
- Categorized parties as **National**, **Regional**, and **Others**, including a **LIVE tag** and timestamp to indicate real-time updates.
- Enhanced dashboard navigation and contextual awareness through visual branding and consistent design.

Vote Share & EVM Analysis Panel

- Compared **vote share trends** across states and parties using bar, line, and area charts.
- Analysed **EVM vs Postal Votes**, showing participation patterns and their impact on outcomes.
- Visualized candidate-level results categorized by *Won*, *Lost*, and *Others* using pie and donut charts.
- Employed **slicers and tooltips** for deeper drill-down insights and interactive storytelling.

3.3 Technology Used

The project made extensive use of modern data analytics tools to ensure precision, interactivity, and professionalism in design.

Technology / Tool	Purpose / Functionality
Microsoft Power BI	Core tool for dashboard design, data visualization, and report creation.
Power Query Editor	Data preprocessing, cleaning, and validation of raw election data.
DAX (Data Analysis Expressions)	Used for creating calculated columns and dynamic measures (e.g., total votes, percentage share, etc.).
Power Query Editor	Employed for transforming and shaping datasets before visualization.
GitHub / Local Repository	Used for version control and collaboration within the team.
Microsoft Teams / Google Meet	Used for communication, review meetings, and mentorship discussions.

These tools were chosen for their accessibility, integration capabilities, and relevance to modern data analytics workflows.

3.4 Insights from the Dashboard

The Power BI dashboard provided a wide range of meaningful insights derived from the election dataset.
Each visual component told a unique part of the story:

- **National Overview:** Displayed total votes, constituencies, and turnout rates, helping identify states with maximum voter participation.
- **State-Level Analysis:** Revealed regional variations in voting behaviour and competitiveness among states.
- **Party Performance:** Highlighted which political parties dominated in specific regions, along with seat share and total vote distribution.
- **Vote Share Trends:** Illustrated how voter preferences changed geographically, showing both strongholds and swing regions.
- **EVM vs Postal Votes:** Compared traditional electronic votes and postal ballots to assess participation diversity and inclusivity.

The interactive nature of Power BI allowed users—especially media personnel to **filter by state, constituency, or party**, enabling instant access to region-specific insights for data-backed reporting.

3.5 Real-World Impact for Media and Public Communication

In the real world, *ElectViz* holds significant value for **media organizations, researchers, and policymakers** who rely on clear, accurate, and timely insights during election coverage.

Traditional election data is often presented in static tabular formats that are difficult to interpret during live reporting. With ElectViz, journalists and analysts can:

- Instantly visualize **party-wise vote shares** and **regional dominance**.
- Compare **turnout and winning margins** across states or constituencies.
- Present **data-backed stories and visuals** to the audience during live broadcasts.
- Support **fact-based discussions** with easily accessible graphical insights.

Beyond media, the project also contributes to **data literacy and transparency**, promoting the use of open data and visualization for democratic accountability. It demonstrates how **Power BI can be leveraged as a real-world analytics solution**, capable of transforming

large datasets into interactive knowledge platforms for both professionals and the general public.

The *ElectViz* project reflects the integration of **technical expertise, analytical reasoning, and creative visualization**. It showcases how structured data processing, combined with thoughtful design and Power BI's interactive features, can simplify complex electoral analysis for mass communication.

Through this internship, the team successfully translated theoretical learning into a practical, impactful solution reaffirming the importance of data-driven storytelling in modern media ecosystems.

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4. Timeline Overview

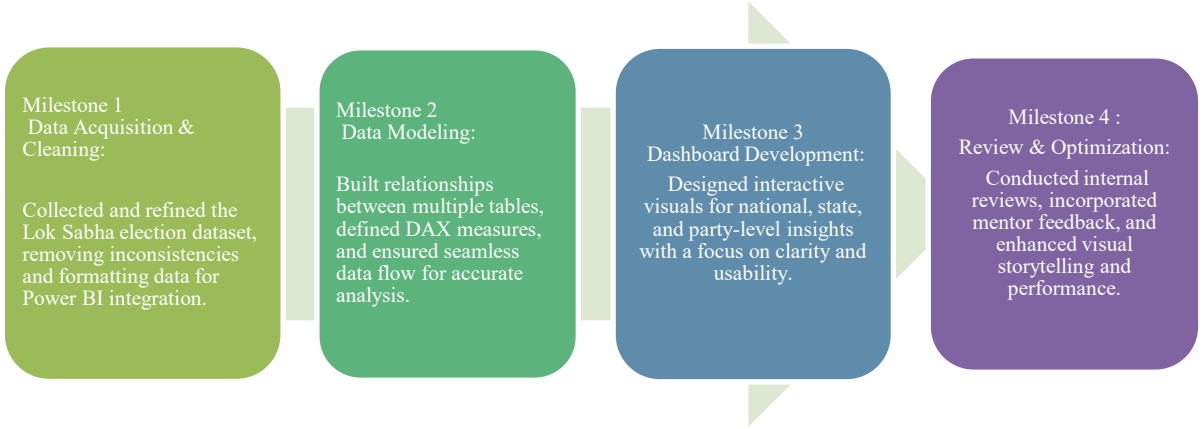
Week	Activities Planned	Activities Completed
Week 1	Orientation and understanding Infosys Internship portal and guidelines.	Successfully completed orientation and group formation.
Week 2	Topic selection and data sourcing.	Finalized "ElectViz" as project title and acquired Lok Sabha dataset.
Week 3	Data cleaning and preprocessing.	Cleaned dataset using Excel and structured it for Power BI import.
Week 4	Data modeling and DAX creation.	Established table relationships and computed necessary KPIs.
Week 5	Dashboard design (layout, theme, visuals).	Created Introduction, Overview, and State-wise dashboards.

Week 6	Development of Party, Vote Share, and EVM-Postal dashboards.	Completed remaining dashboards and integrated filters.
Week 7	Testing, validation, and refinement.	Conducted internal reviews and optimized performance.
Week 8	Documentation and final presentation.	Prepared final report, presentation slides, and submitted project.

5a. Key Milestones

Milestone	Description	Date Achieved
Project Kick-off	Team formation, project topic selection, and understanding of objectives and guidelines.	15th September 2025
Prototype / First Draft	Initial Power BI dashboard structure created with preliminary visuals and dataset integration.	22th September 2025
Mid-Term Review	Presented initial dashboard version for feedback and made improvements based on mentor suggestions.	6th October 2025
Final Submission	Completed and submitted the fully functional interactive dashboard with storytelling insights.	20th October 2025
Presentation	Final team presentation showcasing the dashboard, key insights, and overall project learnings.	29th October 2025

5b. Project execution details



The execution of the "Lok Sabha 2024 Election Results Dashboard" project followed a structured milestone-based approach to ensure systematic progress from data collection to final deployment. Each stage contributed to developing a fully functional, interactive, and optimized Power BI dashboard.

Milestone 1 – Data Collection and Preparation

Objective: Collected and refined the Lok Sabha election dataset for Power BI.

Execution:

The team gathered comprehensive election data, including candidate names, political parties, constituencies, EVM votes, and postal votes, from reliable and verified sources. Additional lookup tables such as Party Master, State Master, Vote Type, and Result Status were created for better data organization. Data cleaning involved removing duplicates, correcting spelling errors in party and constituency names, formatting numeric fields, and generating consistent IDs to link tables accurately. Data quality checks were conducted to compare totals with official election data, fix mismatches, and handle missing or incorrect records.

Deliverable: A clean and verified dataset ready for Power BI analysis.

Milestone 2 – Data Modelling

Objective: Built relationships, DAX measures, and ensured smooth data flow.

Execution:

A star schema data model was designed in Power BI, featuring the main Election Data table connected to dimension tables such as Party Master and State Master. Relationships were established using unique keys like PartyID and StateID to ensure accurate data mapping. Custom DAX measures were created to calculate key metrics such as Total Votes, Vote Share (%), Seats Won, and EVM vs Postal Vote Percentage. The team

optimized the model by removing unused columns, defining appropriate data types, and testing all measures for accuracy and consistency.
Deliverable: An optimized and relational data model enabling efficient analysis and visualization.

Milestone 3 – Dashboard Development

Objective: Designed interactive visuals for national, state, and party-level insights.

Execution:
This stage focused on building visually appealing and interactive dashboards tailored for media professionals and data analysts. Multiple pages were created, including National Overview, State-Level Analysis, and Party Insights. Various chart types such as maps, bar charts, column charts, and KPI cards were used to visualize performance metrics. Interactivity was achieved through the use of slicers and filters for party, state, and vote type. The visuals were designed with consistent party colour codes, clear labels, and simple layouts to enhance readability and storytelling.

Deliverable: A dynamic Power BI dashboard offering multi-level election insights.

Milestone 4 – Review and Optimization

Objective: Reviewed with mentors, improved visuals, and increased dashboard performance.

Execution: The completed dashboard was presented to mentors and team members for feedback and evaluation. Based on suggestions, improvements were made to visual clarity, title naming, colour contrasts, and tooltip explanations

Deliverable: A polished and high-performance Power BI dashboard ready for submission and presentation.

Through well-planned execution, the project successfully transformed raw election data into a meaningful and interactive Power BI dashboard. The systematic workflow demonstrated the team's proficiency in data preparation, modelling, visualization, and storytelling, aligning with the objectives of the Infosys Springboard Virtual Internship.

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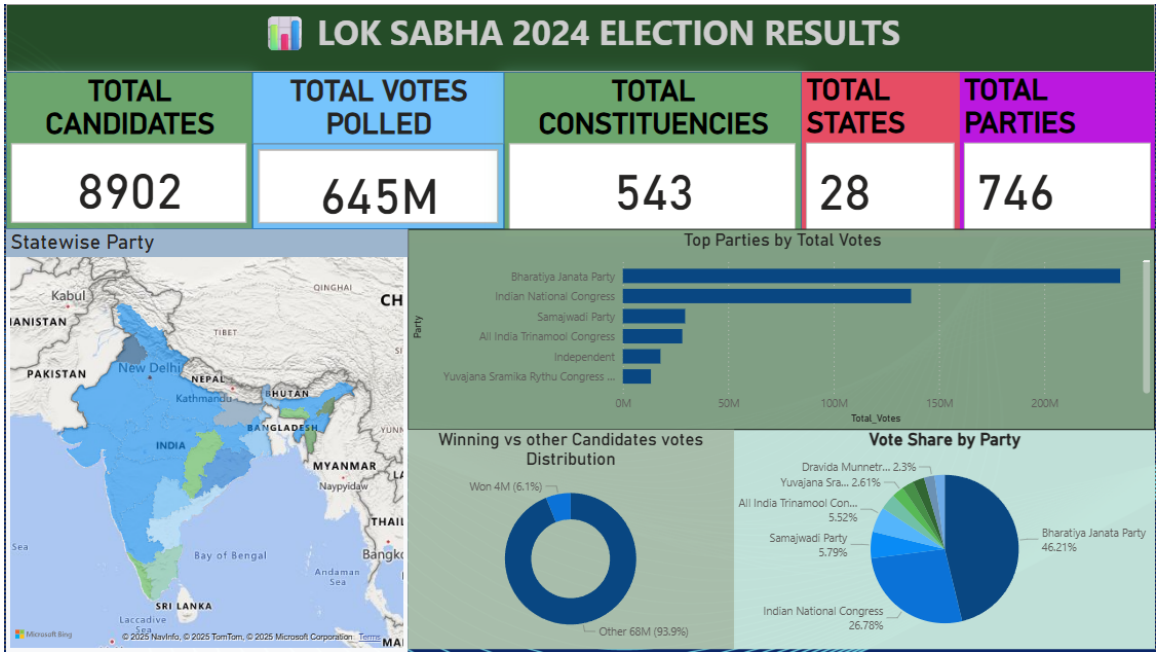
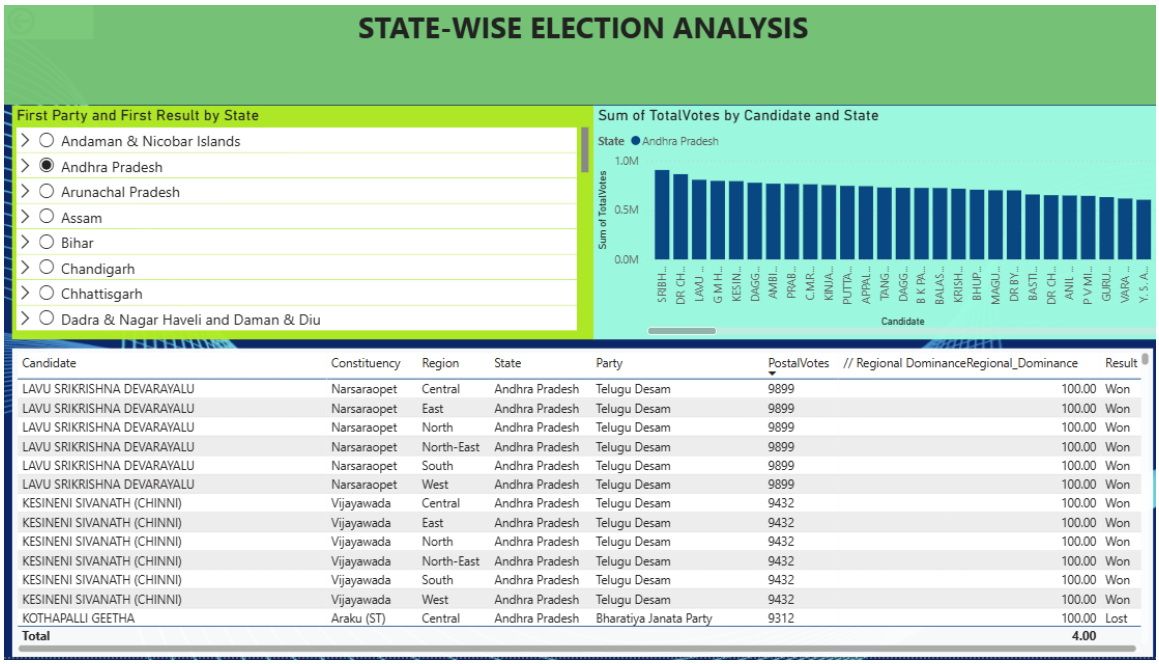
6. Snapshots / Screenshots

6.1 Introduction Dashboard

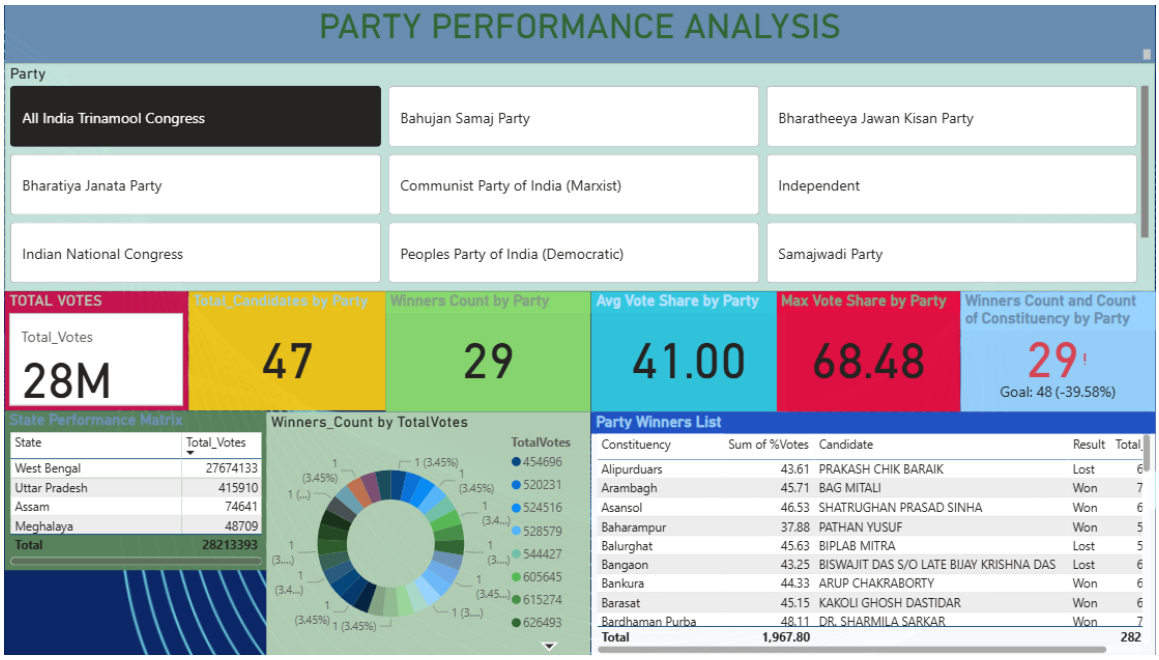
6.2 Lok Sabha 2024 Results Overview



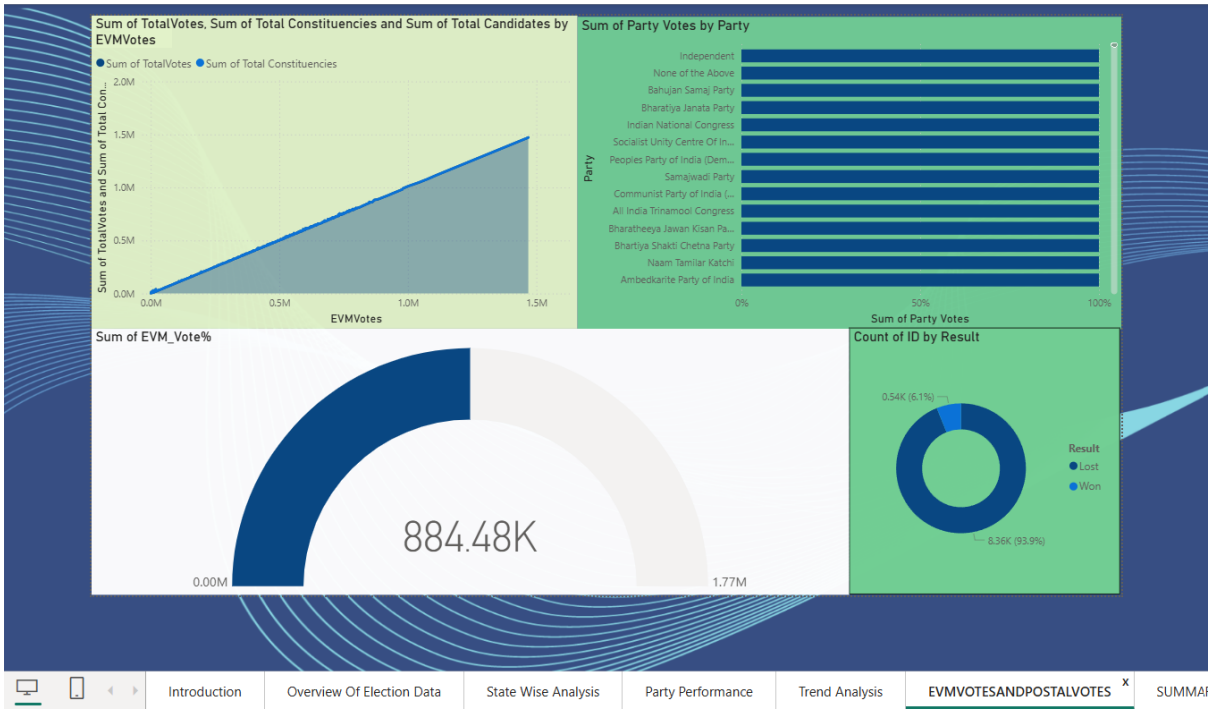
6.3 State-Wise Election Analysis



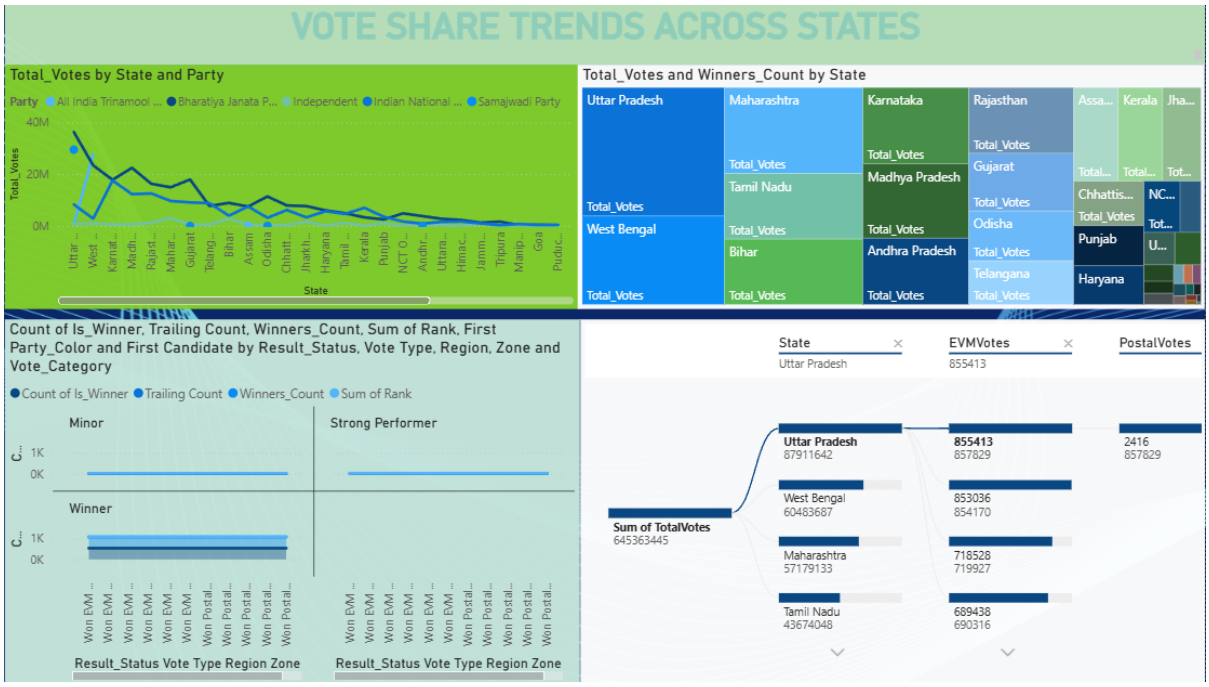
6.4 Party Performance Analysis



6.5 Evm and Postal Votes



6.6 Vote Share Trends Across States



7. Challenges Faced

Throughout the internship, the team encountered a range of challenges from technical complexities in data handling to coordination issues in a virtual setup. Each challenge provided valuable learning experiences and strengthened the team's problem-solving and collaboration skills.

7.1. Data Integration and Cleaning

Challenge:
The initial Lok Sabha election dataset contained multiple inconsistencies such as spelling errors in constituency and party names, missing postal vote counts, and irregular formats between different state files. Additionally, several duplicate entries and mismatched totals created discrepancies in the final dataset, making it difficult to visualize accurate results in Power BI.

Resolution:
To address this, the team conducted a detailed data-cleaning process using Microsoft Excel. Functions such as "Remove Duplicates" and "Find & Replace" were used to standardize entries. Manual verification was performed to cross-check constituency names and vote counts against official sources. Missing data fields were either corrected from verified online records or left blank with proper labelling. Lookup tables (Party Master, State Master, and Vote Type) were created to maintain uniformity and enable smooth data integration in Power BI. This ensured a clean, validated, and consistent dataset ready for analysis.

7.2. Technical Alignment in Power BI

Challenge:
During the data modelling stage, some members faced difficulties understanding the logic behind relationships, cardinality, and filter propagation in Power BI. Writing DAX formulas for calculating vote share percentages, seats won, and EVM vs Postal Vote ratios also posed a learning curve. Inconsistent understanding among members initially slowed progress.

Resolution:
The team overcame this by organizing internal learning sessions where each member practiced building small test dashboards to understand DAX and relationship models.

Reference materials from Microsoft Learn and YouTube tutorials were used to clarify concepts. Team members who had prior experience in Power BI helped others troubleshoot relationship errors and optimize measures. By the end of the phase, all members gained confidence in DAX and successfully contributed to model accuracy and performance optimization.

7.3. Communication and Time Management

Challenge:

As the internship was conducted virtually, coordinating across different schedules and managing simultaneous academic commitments became challenging. Differences in working hours and communication delays sometimes affected task deadlines and feedback loops.

Resolution:

To resolve this, the team established a structured workflow with clearly defined roles, weekly goals, and regular check-in meetings. Google Drive and WhatsApp groups were used for real-time collaboration and file sharing. Meeting minutes and progress trackers helped in monitoring task completion. Each member updated progress after finishing their assigned section, which improved accountability and overall time management. This approach ensured that all deliverables were completed on schedule.

7.4. Dashboard Optimization and Performance Issues

Challenge:

The initial version of the Power BI dashboard faced performance lags due to multiple visuals and large datasets being processed simultaneously. Some DAX measures were taking longer to compute, causing delays during navigation between pages.

Resolution:

The team analysed the report using Power BI Performance Analyzer to identify slow-performing visuals and optimized the model by removing unnecessary columns and redundant calculations. Filters were simplified, and visuals were combined where possible. The data model was restructured to use only essential relationships, improving dashboard responsiveness. After optimization, the dashboard loaded significantly faster and provided a smoother user experience during presentation.

7.5. Design Consistency and Storytelling Alignment

Challenge:
During mid-term review, mentors pointed out inconsistencies in colour schemes, font sizes, and visual arrangement, which affected the professional appeal and storytelling flow of the dashboard.

Resolution:
The team revised the visual design by applying consistent party colour codes, aligning titles and labels uniformly, and maintaining balanced spacing across visuals. Standard fonts and colour palettes were implemented throughout all pages. The storytelling aspect was enhanced by arranging visuals logically — starting from national-level insights to state and party-level details. This resulted in a cohesive and visually engaging dashboard.

Summary:
Despite initial hurdles, the team effectively navigated through each challenge by applying analytical thinking, teamwork, and adaptability. These experiences not only improved the technical quality of the final dashboard but also enhanced the team's collaboration, project management, and problem-solving capabilities.

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8. Learnings & Skills Acquired

The Infosys Springboard Virtual Internship provided valuable exposure to real-world data analytics workflows, professional teamwork, and the practical application of Power BI. Through this project, each team member enhanced both technical and interpersonal competencies essential for industry readiness.

8.1. Technical Skills

- **Power BI Proficiency:** Gained hands-on experience in creating interactive dashboards using advanced Power BI features such as DAX formulas, slicers, filters, and relationship modelling.
- **Data Cleaning and Transformation:** Learned to preprocess and standardize raw datasets using Microsoft Excel, ensuring data accuracy and consistency.

- **Data Modelling:** Developed a clear understanding of the star schema structure, table relationships, and the importance of efficient model design for faster performance.
- **DAX Formulas:** Acquired the ability to write and optimize DAX measures to calculate totals, percentages, ratios, and key performance indicators (KPIs).
- **Visualization Techniques:** Learned how to design clear, intuitive, and visually appealing dashboards using maps, bar charts, column charts, and cards for data storytelling.

8.2. Analytical and Problem-Solving Skills

- Strengthened logical thinking and analytical reasoning by identifying data inconsistencies and deriving actionable insights from large datasets.
- Improved ability to translate real-world data into meaningful patterns, trends, and performance indicators.
- Enhanced critical thinking through iterative testing, validation, and optimization of data models and visuals.

8.3. Soft Skills and Team Collaboration

- **Communication:** Improved coordination through regular team discussions, mentor interactions, and progress reviews, enhancing clarity and teamwork in a virtual setting.
- **Time Management:** Balanced academic deadlines and project deliverables effectively by setting weekly goals and maintaining consistent progress tracking.
- **Leadership and Initiative:** Took ownership of specific tasks such as dashboard design, data cleaning, or presentation preparation, fostering leadership and accountability.
- **Adaptability:** Learned to work in a dynamic environment, quickly adapting to feedback, technical challenges, and new tool functionalities.

8.4. Domain Knowledge and Application

- Gained insights into **electoral data analysis** and its significance in media reporting, political strategy, and public policy understanding.

- Understood how **data visualization** supports informed decision-making by presenting complex information in a simplified and impactful manner.
- Learned the value of **data-driven storytelling** in communicating key messages effectively to diverse audiences.

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9. Testimonials from team

Chaithra R:

My experience with the Infosys Springboard Virtual Internship has been highly enriching and transformative. It helped me apply my technical learning to real-world datasets and strengthened my understanding of how Power BI can be used to create meaningful insights. Being a team leader improved my decision-making, organization, and communication skills while guiding the project from data collection to final presentation. This internship enhanced my technical proficiency, analytical thinking, and collaborative spirit. I am sincerely grateful to my mentor, Mrs. Nithyasri S. J, for her guidance, encouragement, and valuable feedback throughout the internship.

Dronadula Srilekha:

My internship with Infosys Springboard was a great learning journey that allowed me to explore data analytics and visualization in depth. I developed practical skills in Power BI, especially in analysing and representing party-level election data. The experience strengthened my analytical mindset, problem-solving approach, and understanding of storytelling through visuals. I also learned the importance of teamwork and communication in completing collaborative projects successfully. I am thankful to Mrs. Nithyasri S. J for her continuous guidance and motivation during this internship.

Moumita Mukherjee:

The Infosys Springboard Internship was a highly valuable experience that enhanced both my technical and professional skills. Working on large-scale election data taught me how to clean, model, and visualize complex datasets using Power BI. I gained a strong appreciation for the importance of accuracy, design consistency, and narrative clarity in dashboards. This internship also helped me improve my teamwork, time management, and

attention to detail. I am grateful to Mrs. Nithyasri S. J for her support, feedback, and mentorship throughout this journey.

Boomika B:

Participating in the Infosys Springboard Internship has been an inspiring and practical learning experience. It gave me hands-on exposure to data analytics using Power BI and taught me how to translate raw data into visually meaningful insights. I developed skills in data cleaning, modelling, and dashboard design, while also improving my creativity and analytical thinking. Working collaboratively with my teammates helped me enhance my coordination and adaptability. I am deeply thankful to Mrs. Nithyasri S. J for her continuous support and guidance throughout the internship.

Dishant Gangwar:

My internship experience with Infosys Springboard was extremely insightful and rewarding. It allowed me to apply data visualization techniques to real-world datasets and understand the process of trend analysis. Through this project, I improved my skills in Power BI, DAX formulas, and performance optimization. The internship also strengthened my collaborative and communication abilities as part of a diverse team. I sincerely thank Mrs. Nithyasri S. J for her constant encouragement and valuable mentorship during this learning journey.

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10. Conclusion

The Infosys Springboard Virtual Internship 6.0 has been an enriching and transformative journey that provided our team with valuable hands-on experience in data analytics and visualization. Through this internship, we were able to bridge the gap between theoretical concepts and real-world application by working on a comprehensive project analysing the *Lok Sabha 2024 Election Results* using Power BI. This project allowed us to explore how large-scale datasets can be transformed into meaningful insights that help in understanding trends, patterns, and outcomes at a national level.

Throughout the course of this internship, we developed a deep understanding of data handling, cleaning, and transformation processes. We learned how to model data relationships effectively, apply DAX functions, and design interactive dashboards that are both informative and visually engaging. Each phase of the project from data preparation to visualization enhanced our analytical thinking, logical reasoning, and attention to detail. It was a great opportunity to apply the skills we had acquired during our academic learning to a practical, outcome-oriented scenario.

Working in a team setting also played a significant role in shaping our professional and interpersonal skills. We learned how to coordinate tasks efficiently, divide responsibilities based on individual strengths, and ensure consistent communication throughout the project timeline. The virtual nature of the internship further taught us adaptability, time management, and digital collaboration essential skills for any modern workplace. Despite the challenges of remote teamwork and academic overlaps, we successfully maintained progress and achieved our project milestones on time through effective coordination and planning.

This internship was not only a technical learning platform but also an opportunity for personal growth. It helped us develop confidence in presenting insights through data storytelling and gave us an appreciation for how visualization can make complex information accessible and impactful. We also improved our critical thinking, creativity, and decision-making abilities while working on real-world datasets and interpreting large volumes of information.

In conclusion, the Infosys Springboard Virtual Internship 6.0 provided us with an incredible learning experience that strengthened both our technical expertise and soft skills. It helped us gain a clear understanding of how data analytics contributes to meaningful insights and informed decision-making in real-world scenarios. The internship experience has undoubtedly prepared us for future professional challenges and inspired us to continue exploring the dynamic world of data-driven innovation.

11. Acknowledgements

We extend our heartfelt gratitude to **Infosys Springboard** for providing us with this valuable opportunity to participate in the **Virtual Internship 6.0** program. This platform allowed us to enhance our technical, analytical, and professional skills through a practical, project-based learning experience.

We would like to express our sincere appreciation to our **mentor, Mrs. Nithyasri S J**, and the **project coordinators and organizers** for their continuous guidance, constructive feedback, and encouragement throughout the internship. Their support played a vital role in helping us successfully complete our project and achieve meaningful learning outcomes.

We also wish to acknowledge the cooperation, commitment, and teamwork of all our team members, whose collective efforts made the successful completion of the **ElectViz: Lok Sabha 2024 Election Results Dashboard** project possible. Each member's contribution, creativity, and collaboration were instrumental in turning ideas into impactful visual insights.

Finally, we are grateful for this enriching experience, which has strengthened our understanding of data analytics and inspired us to pursue further learning and innovation in this field.