Election Data Visualization using Power BI

Infosys Springboard – Data Visualization Internship

Milestone 4 | October 31, 2025
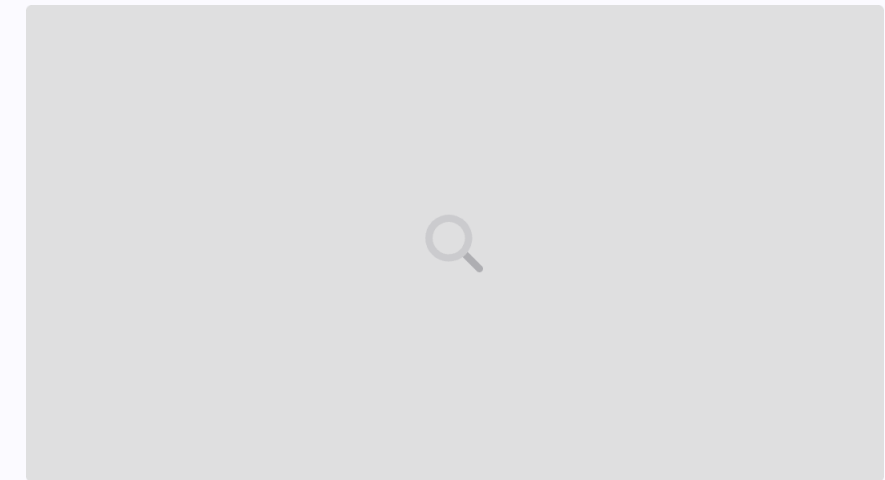
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Project Overview

Mission Statement

This milestone demonstrates the power of data visualization in understanding democratic processes. Through Power BI, we transform complex election datasets into actionable insights, revealing patterns and trends from India's 2024 General Elections.

Core Focus Areas

- Data cleaning and transformation techniques

- Advanced data modeling and relationships

- Interactive dashboard design and storytelling

- Phase-wise polling analysis across 7 election phases

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8	Cynthia Moore	Kenneth Matthews	Accounts Receivable	Accounting
9	Nichole Hinton	Kenneth Matthews	Accounts Payable	Accounting
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11	Chad Adams	Juan Moreno	Vice President	Human Resourc
12	Tiffany Suarez	Chad Adams	Manager	Benefits
13	Patrick Pena	Chad Adams	Manager	Payroll

Dataset Architecture

ECI Data 2024

8,097 candidates across 543 constituencies

Comprehensive candidate-level data including party affiliation, vote counts, margins, demographics, and alliance information for detailed analysis.

GE India 2024

State-level aggregation by political parties

Summarized results showing total votes, seats won, and vote percentages for each party across all states.

Phase Data

7 electoral phases tracked systematically

Phase-wise polling statistics including turnout percentages, total electors, and votes polled across different regions and constituencies.

Data Preparation & Modeling

Power Query Transformations

Rigorous data cleaning ensured accuracy and consistency across all datasets:

- Eliminated null and blank values to ensure data integrity
- Standardized data types for proper calculations
- Trimmed text fields and removed duplicates
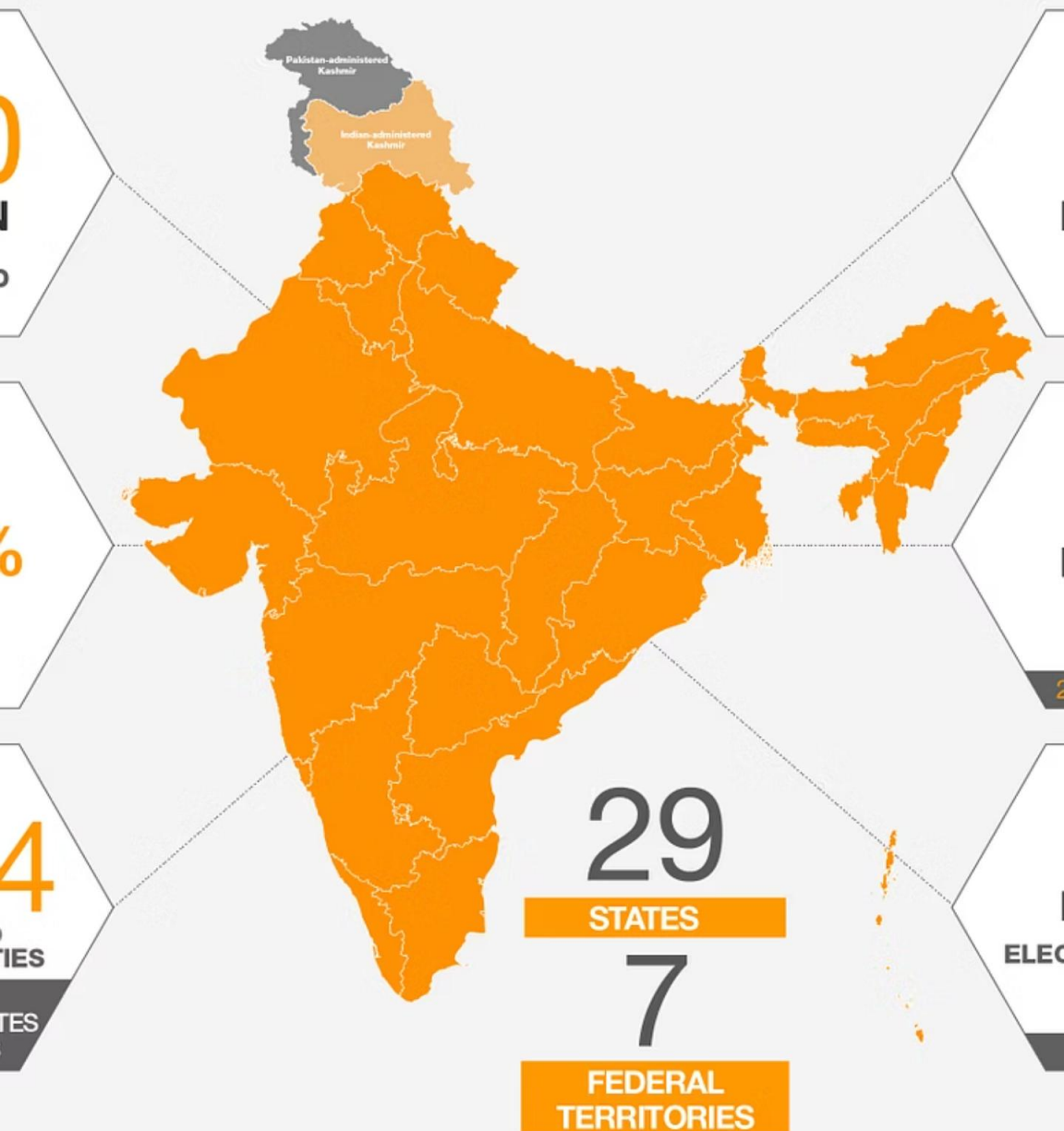- Normalized party and state names for consistency

Relational Data Model

Built a robust star schema connecting multiple data sources:

- Established relationships using State, Party, and Constituency keys
- Configured one-to-many relationships for efficient filtering
- Connected fact tables (votes) with dimension tables
- Enabled cross-filtering for interactive analysis

29
STATES

7
FEDERAL TERRITORIES

Election Analysis Dashboard

36
Total States
Complete coverage across India

543
Constituencies
Parliamentary seats analyzed

8,097
Candidates
Individual contestants tracked

645M
Total Votes
Democratic participation measured

Key Visualizations

Party Vote Share Analysis

Donut chart revealing BJP's leading position with 36.56% (236M votes), followed by other major national and regional parties.

Top 6 Parties Comparison

Horizontal bar chart comparing vote totals among India's major political parties for clear performance benchmarking.

State-wise Vote Distribution

Tree map highlighting Uttar Pradesh, Tamil Nadu, and West Bengal as top contributing states by vote volume.

Voter Turnout Analysis

Counted vs Polled Dashboard

This specialized dashboard provides crucial transparency by comparing votes cast with votes officially counted.

Key Metrics Tracked:

- Total electors registered
- Votes polled at polling stations
- Votes counted and validated
- Turnout percentage by state and phase

Turnout Trends

Line charts reveal how voter participation evolved across the seven electoral phases.

Regional Variations

Bar charts identify states with exceptional or concerning turnout percentages for analysis.

Seven-Phase Electoral Journey

1 ──── Phase 1

Northern & northeastern states initiated the democratic process

2 ──── Phases 2-4

Central and southern zones progressively joined the electoral exercise
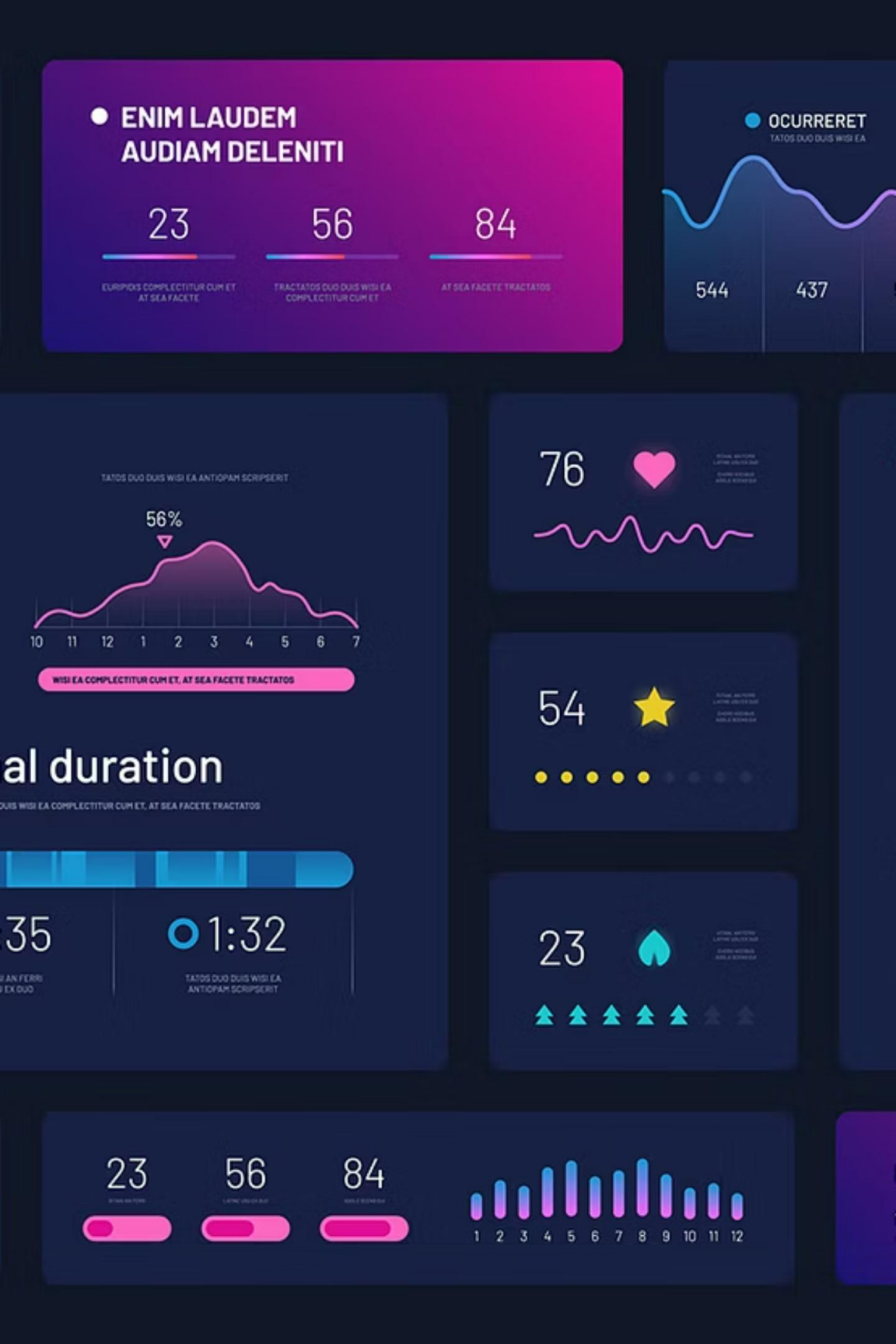
3 ──── Phases 5-6

Key states including UP, Bihar, and West Bengal cast their ballots

4 ──── Phase 7

Final constituencies completed the nation's democratic mandate

Each phase tab within the Power BI dashboard provides granular insights into regional turnout patterns, voter demographics, and constituency-level results, enabling comprehensive temporal and geographic analysis.

Dashboard Navigation Structure

Main Dashboard

Comprehensive overview with key metrics and national-level visualizations

Counted vs Polled

Transparency dashboard comparing votes cast with votes counted

Phases 1-7

Individual phase pages with dedicated regional analysis and trends

The intuitive multi-page structure ensures seamless navigation, allowing users to drill down from national trends to phase-specific insights. Interactive filters maintain consistency across all pages, enabling dynamic exploration of the data.

Advanced Features & Capabilities

Dynamic Filtering System

Multi-level filters for state, party, and constituency enable precise data exploration with real-time visual updates.

Interactive Updates

Visualizations respond instantly to user selections, providing immediate insights and supporting exploratory analysis.

DAX Calculations

Custom measures and calculated columns using Data Analysis Expressions for sophisticated metrics and KPIs.

Dataset Integration

Seamless relationships between multiple data sources enable comprehensive cross-dimensional analysis.

Modern Design

Clean, professional layout with consistent color scheme and typography for enhanced readability and user experience.

Visual Storytelling

Thoughtful arrangement of charts and metrics guides users through election insights naturally and intuitively.

Key Learnings & Growth

Technical Skills Developed

Data Transformation Mastery

Advanced proficiency in Power Query for cleaning and shaping complex datasets

Relational Modeling

Deep understanding of star schema design and relationship management

Visual Design Excellence

Expertise in creating compelling, interactive dashboards that tell stories

Professional Development

- Strengthened analytical thinking and problem-solving abilities
- Enhanced ability to communicate insights through visualizations
- Gained real-world experience with large-scale data challenges

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Conclusion

This Election Data Visualization project successfully transformed raw electoral data into meaningful, interactive insights. Power BI proved to be an invaluable tool for understanding democratic processes, revealing patterns that support informed decision-making and trend analysis.

Special acknowledgment to Infosys Springboard for providing this exceptional internship opportunity and invaluable guidance throughout the project journey.