

# ANALYZING 54 YEARS OF PAKISTAN'S DEMOCRATIC JOURNEY

Data-Driven Insights from General  
Elections (1970-2024)

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# WHAT IS OUR CHOSEN TOPIC/AREA?

- Historical Analysis of Pakistan's General Elections (1970-2024)
- Elections are the backbone of democracy and governance.
- Pakistan is the 5th most populous country with 240+ million people.
- Pakistan has held general elections since 1970 with shifting trends in turnout and party dominance.
- Understanding electoral patterns helps predict political trends
- Our study uses the dataset from [opendata.com.pk](https://opendata.com.pk) covering elections from 1970-2024.

# WHAT QUESTIONS DO WE HOPE TO ANSWER ?



## What We Aim to Discover

- 1. Turnout Drivers:** Which socioeconomic factors (literacy, urbanization, income) best predict voter participation? [PBS 2021; UNFPA 2025]
- 2. Party Evolution:** How have regional party strongholds shifted over 54 years, especially PTI's rise in urban areas? [QAU 2022]
- 3. Conflict Impact:** Do violence and protests (ACLED data) correlate with turnout suppression or altered voting patterns? [ACLED 2024]
- 4. Electoral Integrity:** Can we quantify "free" vs "flawed" elections using indicators like internet shutdowns, result delays, and observation reports? [Journal of Democracy 2024; ANFREL 2024]
- 5. Predictive Power:** Can we forecast future turnout and identify swing constituencies using ML models?
- 6. Digital Influence:** Does social media sentiment predict electoral outcomes? [PSU 2020]

# DATASET OVERVIEW: PAKISTAN GENERAL ELECTIONS 1970-2024

**Core Dataset:** Gallup Pakistan Election Data ([OpenData Pakistan](#))

- Covers 12 national elections from 1970 to 2024
- Constituency-level results (national, provincial)
- Includes candidate details, party affiliation, votes won, and seat results

## Key Features:

- Election Year: Data for all general elections (1970–2024)
- Constituency: Detailed results by constituency
- Candidate & Party: Information on each candidate and their party
- Votes Won: Number of votes each candidate received
- Seat Results: Whether the candidate won the seat
- Vote Share: Percentage of votes won by each candidate



# AUGMENTED DATASETS FOR ENRICHED ANALYSIS

- **Pakistan Census & Demographic Data (PBS)**
  - Population, literacy rates, urban vs rural distribution
  - Age structure and gender breakdowns (e.g., literacy: ~60% overall, 70% male, 49% female)
- **Socioeconomic Indicators**
  - GDP per capita, poverty rates, Human Development Index (HDI) by province
  - Income, education enrollment, and employment at subnational levels
- **Conflict & Protest Data (ACLED)**
  - Political violence, terrorism, and protest events across Pakistan
  - Militant attacks and protest counts by region and time
- **Election Observation Reports (FAFEN, Freedom House, ANFREL)**
  - Fairness indicators, election-day irregularities (e.g., delays, rigging allegations)
  - Number and deployment of election observers
- **Social Media Data (Twitter API)**
  - Mentions and sentiment scores for political parties/candidates during campaign periods
  - Daily/weekly tweet volume to gauge public sentiment

# SIMILAR STUDIES AND REFERENCES

## Socioeconomic Drivers of Voter Turnout

- Study: How Socio-Economic Conditions Affect Voting Turnouts in Pakistan
- Findings: Higher literacy (especially female literacy) correlates with higher voter turnout.

## Impact of Conflict and Protest on Elections

- Study: Disputed Polls and Political Furies in Pakistan
- Findings: Political violence and protests reduce voter confidence and turnout.

## Social Media's Role in Election Dynamics

- Study: Social Media Buzz and Its Impact on Election Results
- Findings: Volume and sentiment of social media mentions predict election outcomes.

## Conflict and Protest Data Impact

- Study: Regional Overview of Conflict Events in Asia-Pacific
- Findings: Increased conflict correlates with decreased voter turnout, especially in violence-prone regions.

## Party Dominance and Shifts

- Study: Media Handling and Projection of Young, Urban and Female Voters
- Findings: PTI's rise correlates with younger, urban, and educated demographics.

## Electoral Integrity and Fairness

- Study: Inside Pakistan's Deeply Flawed Election
- Findings: Election-day irregularities like result delays and rigging allegations lower voter confidence.

## Demographic and Socioeconomic Trends

- Study: Demographic Change and Future Projections in Pakistan
- Findings: Rapid population growth impacts income, literacy, and voter participation.

## Fairness and Observation Reports

- Study: Preliminary Election Observation Report
- Findings: Internet shutdowns and delayed results in 2024 elections correlated with decreased voter turnout.

# WHAT KIND OF DATA ANALYTICS/ML TOOLS/MODELS/ALGORITHMS DO WE PLAN TO USE?

## Data Analytics Libraries/Tools

### Python Libraries:

- **Pandas:** Data manipulation & cleaning
- **NumPy:** Numerical operations
- **Matplotlib:** Visualizations (Histograms, Heatmaps, Correlation plots)
- **GeoPandas:** Geographic data visualization (district-level maps)



## Machine Learning Models

### Turnout Prediction:

- Linear Regression (OLS), Random Forest Regression, XGBoost

### Vote Share Prediction:

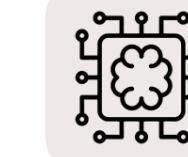
- Logistic/Multinomial Regression, Random Forest Classifier, XGBoost

### Swing Seat Prediction:

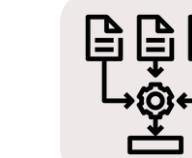
- Random Forest, SVM

### Social Media Sentiment:

- NLP (NLTK, spaCy), VADER, Hugging Face (BERT) for sentiment analysis



## Predictive Modeling



### Time-Series Forecasting:

- ARIMA, Facebook Prophet

### Conflict Impact Assessment:

- Spatial Regression, Difference-in-Differences (DiD)

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