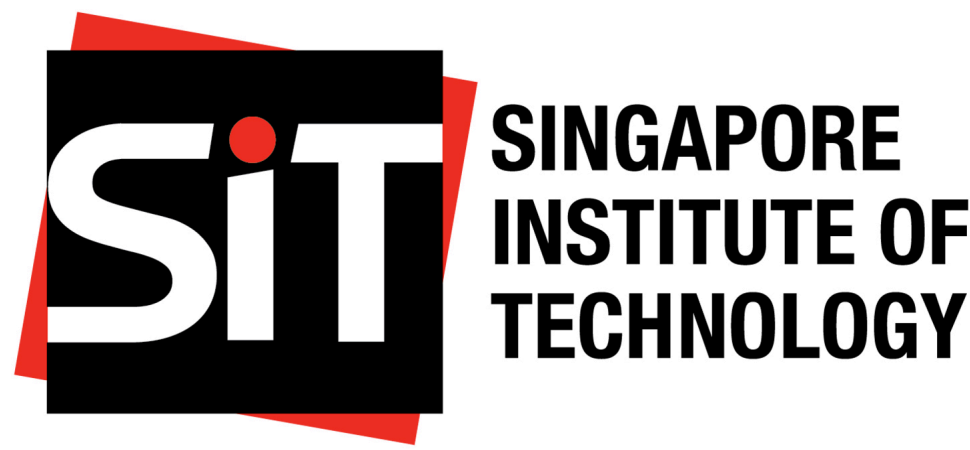# Singapore Election Trends Analysis

Team Navy

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KEYWORDS — Elections, Data Analysis, Visualization, Singapore

INTRODUCTION

This analysis explores the trends and patterns in Singapore's Parliamentary General Elections, focusing on historical data to uncover insights about voting patterns, constituency changes, and electoral dynamics over time.

DATA SOURCES

Our analysis utilizes official election data from:
- Elections Department Singapore (ELD): Parliamentary General Election Results, candidate information, and voter statistics from https://www.eld.gov.sg/homepage.html
- Regional Classification: Manual processing to classify constituencies into regions based on Urban Redevelopment Authority (URA) planning areas from https://www.ura.gov.sg/Corporate

METHODOLOGY & TOOLS

Our analytical approach combines:
- Python for data preprocessing and statistical analysis
- R & ggplot2 for advanced visualization
- Quarto for reproducible research documentation
- Specialized libraries including tidyverse and plotly
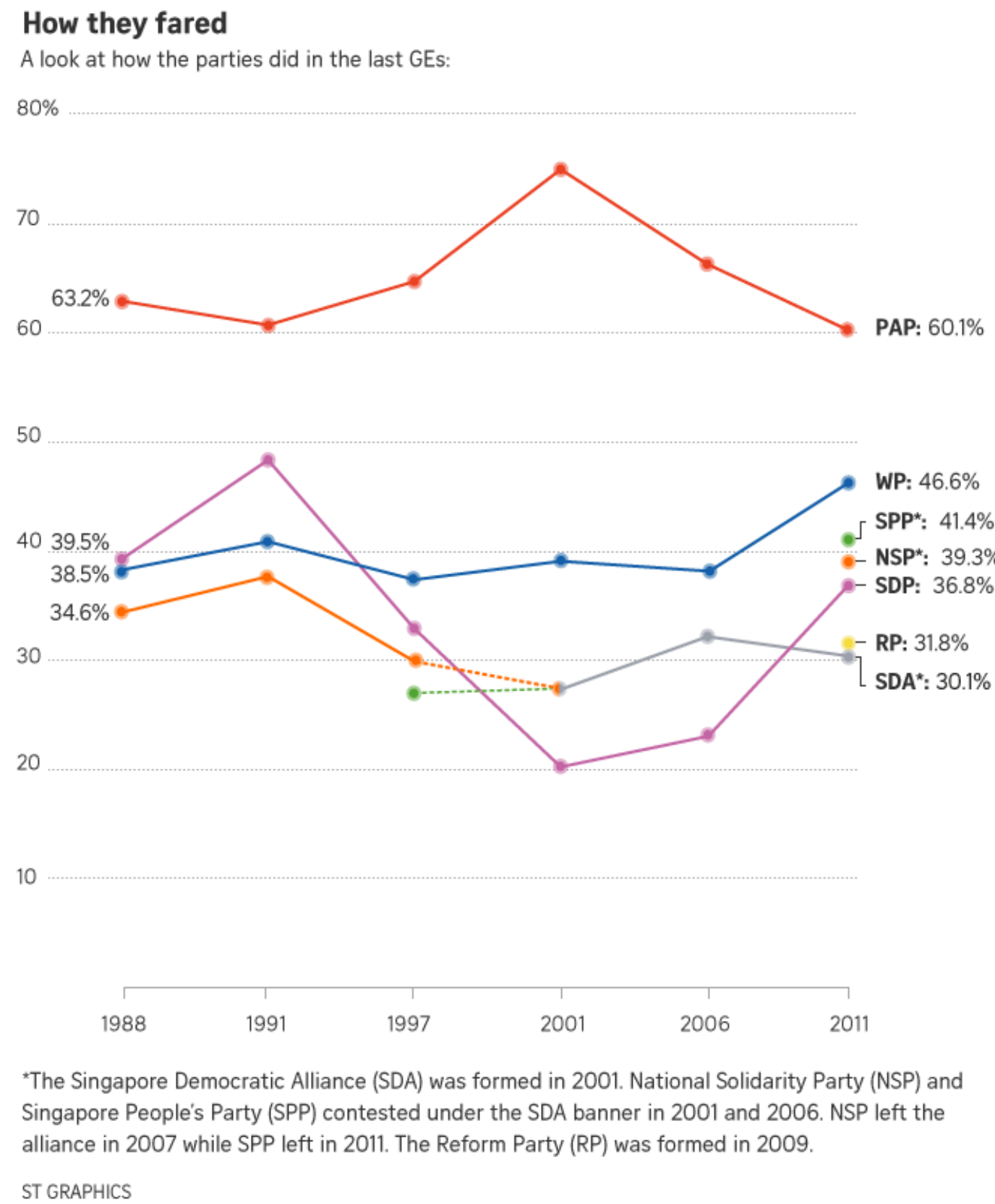
ORIGINAL VISUALIZATION

Figure 1: Previous visualization of election data

Figure 1: Previous visualization approach

The original visualization presented several challenges: limited visual hierarchy, minimal interactive capabilities, basic color schemes lacking accessibility, and dense information presentation.
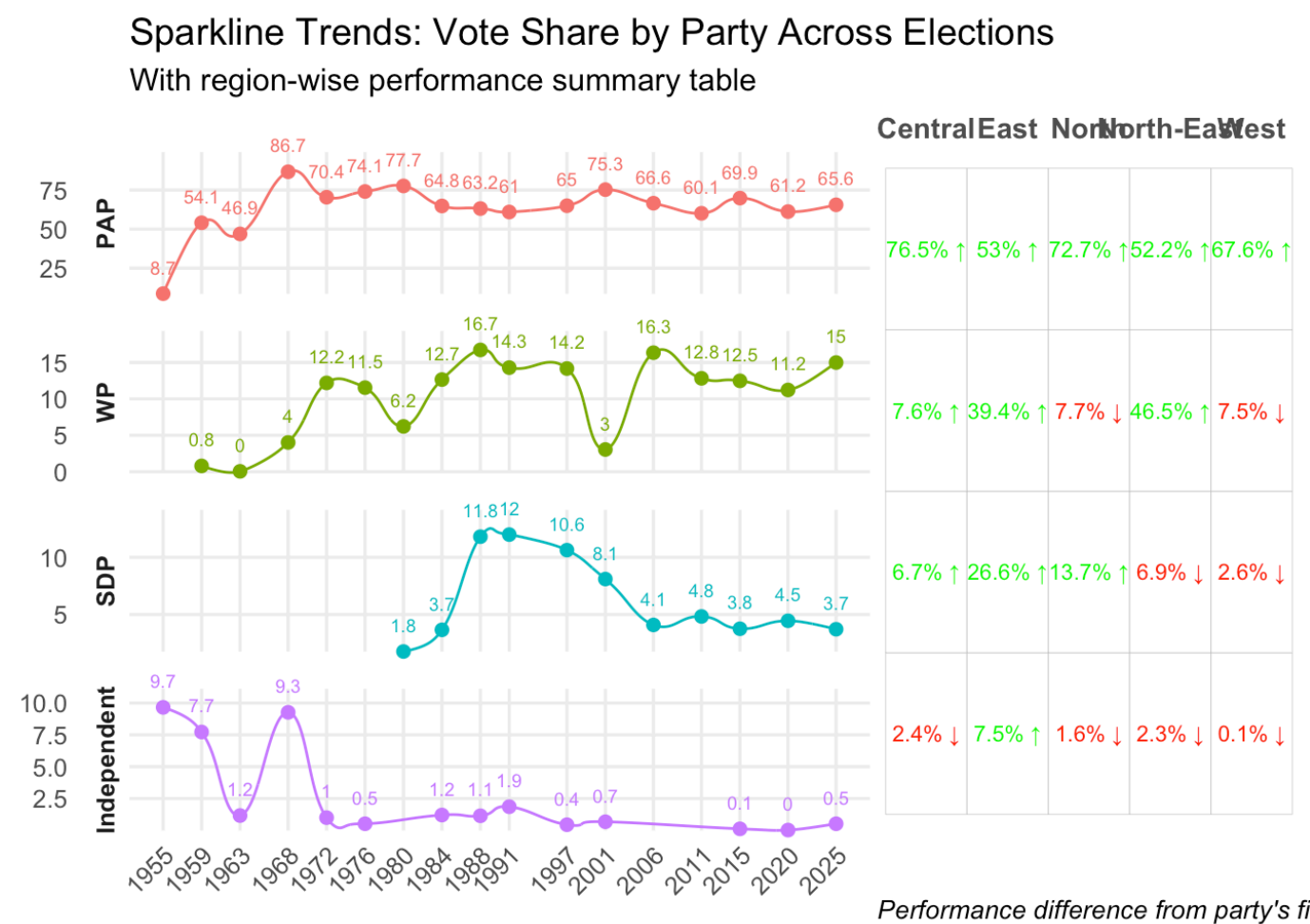
ENHANCED VISUALIZATION

Figure 2: Enhanced visualization with better insights

Figure 2: Enhanced visualization with modern principles

Key Improvements

Our redesigned visualization addresses previous limitations:
- Accurate Percentage Representation: Vote share percentages now correctly add up to 100%, eliminating mathematical inconsistencies in the original visualization
- Clear Trend Indicators: Implementation of up/down trend tickers (↗ ↘) providing immediate visual cues for electoral performance changes across election cycles
- Interactive Data Exploration: Enhanced hover tooltips and filtering options for deeper data analysis
- Improved Visual Hierarchy: Clear sectioning with progressive information disclosure
- Accessibility-First Design: Color-blind friendly palettes with high contrast ratios
- Regional Classification: Constituencies grouped by URA planning regions for meaningful geographic analysis

RESEARCH IMPACT

> ℹ Editorial Board Proposal
>
> Our enhanced visualization offers significant advantages:
> Accessibility & Inclusion - Makes complex electoral data comprehensible to diverse audiences - Implements universal design principles - Reduces barriers to civic engagement
> Analytical Depth - Enables identification of subtle voting patterns
> - Facilitates comparative analysis across constituencies - Supports evidence-based political discourse
> Engagement & Education - Increases reader interaction and comprehension - Supports multimedia storytelling approaches - Enhances public understanding of democratic processes
> Editorial Advantages - Streamlines complex data presentation workflows - Enables rapid adaptation for different story angles - Provides reusable templates for future coverage
> This toolkit represents a significant advancement in electoral data presentation.

KEY FINDINGS & INSIGHTS

Our analysis revealed several significant trends in Singapore's electoral landscape:

Voter Participation Trends
- Increasing Turnout: Steady rise in voter participation from 1988 to 2020
- Demographic Shifts: Notable changes in age group voting patterns
- Geographic Variations: Distinct voting behaviors across different constituencies

Electoral Competition Patterns
- Multi-party Evolution: Growth in opposition party participation
- Constituency Changes: Impact of electoral boundary modifications
- Candidate Diversity: Increasing representation across demographic groups