Can Exit Polls Predict Elections?
Evaluating MRP for State-Level Vote Share Estimation

Joelle Gross

University of Pennsylvania
MSE in Data Science
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Overview

Motivation and Background

- Exit polls provide real-time insight on election night
- Only poll where we can ask verified vote choice before results
- Limited state coverage and sample biases exist
- Goal: Use MRP to extend exit poll insights nationwide to gain early estimates of vote share in general presidential election

MRP: A Proven Tool

- Combines multilevel regression and poststratification
- Widely used for small-area estimation in political science (Gelman et al., 2013)
- Proven to infer state-level opinion from national surveys (Park et al., 2004)

Data Sources

- General State & National-level Exit polls (2008–2024): NBC News, Roper Center
- Census ACS 5-Year PUMS: Demographics by state
- MIT Election Lab: Official state-level returns

Modeling Approach

Stage 1: Multilevel Regression

Predict how different demographic groups are likely to vote based on exit poll data and prior election results.

Stage 2: Poststratification

Combine those predictions with U.S. Census population data to estimate overall vote share in each state, especially those with no exit poll data available.
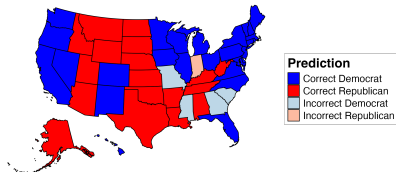
Evaluation Metrics

- Mean Absolute Error (MAE)
- Root Mean Squared Error (RMSE)
- Proportion of explained variance (R^2)
- Correct prediction of winner
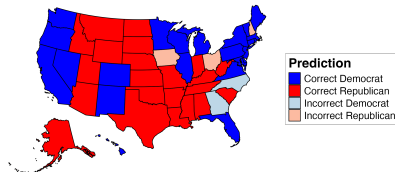
Performance Over Time

- Strongest years: 2016 and 2024
- MAE: 0.033 in 2016, 0.046 in 2024
- $R^2 > 0.80$ in best years
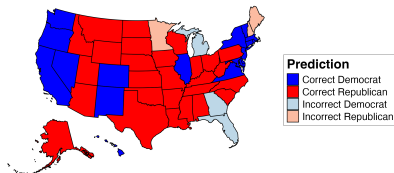- Even without exit polls, MRP performs well

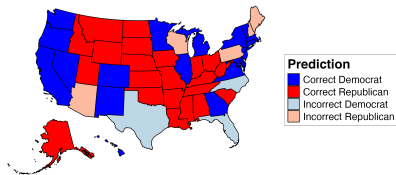**Predicted 2008 Winner**

Predicted 2012 Winner

Predicted 2016 Winner

Predicted Winners According to Exit Polls (2/2)

Predicted 2020 Winner

Prediction
- Correct Democrat
- Correct Republican
- Incorrect Democrat
- Incorrect Republican

Predicted 2024 Winner

Prediction
- Correct Democrat
- Correct Republican
- Incorrect Democrat
- Incorrect Republican
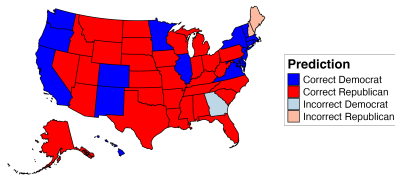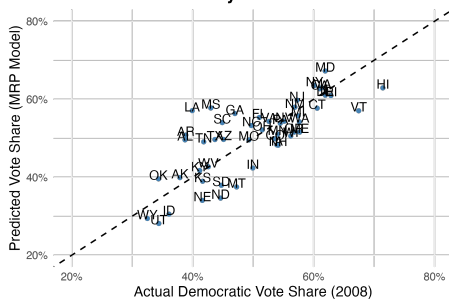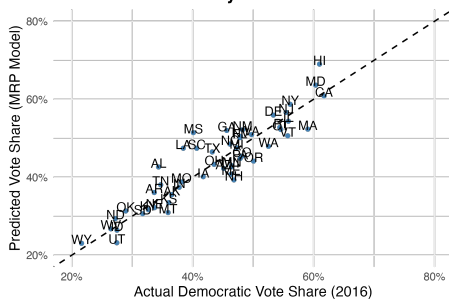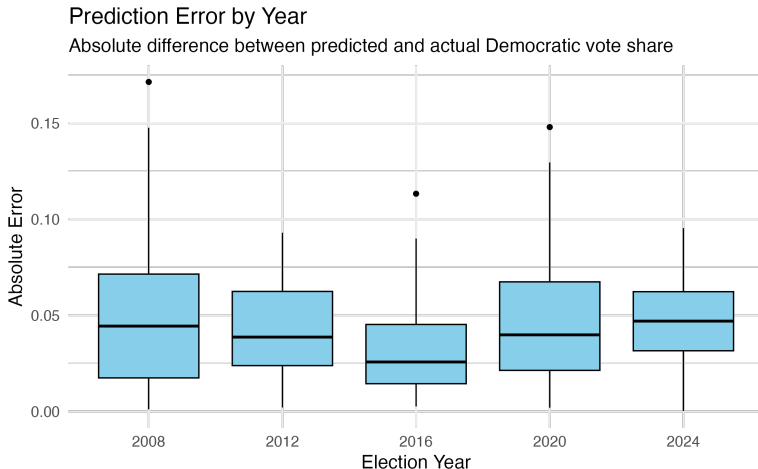
Predicted Vote Share vs. Actual

MRP Model Accuracy vs. 2008 Results

MRP Model Accuracy vs. 2016 Results

No difference between year + exit poll states
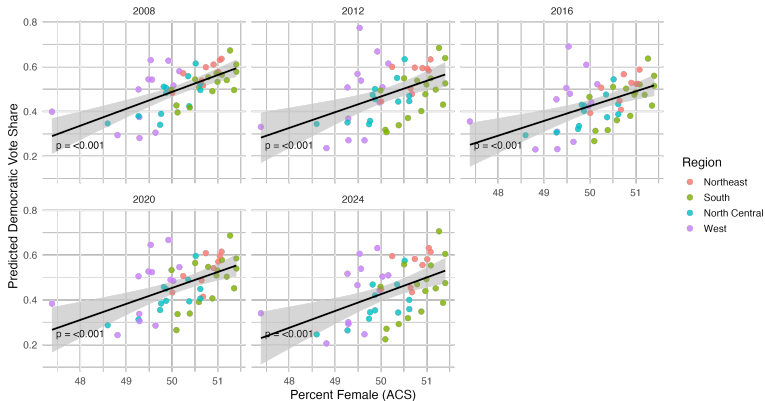

Prediction Error by Year

Absolute difference between predicted and actual Democratic vote share

Predicted Democratic Vote Share vs. % with College Degree
Shaded by Region • ACS 2022 5-Year Estimates
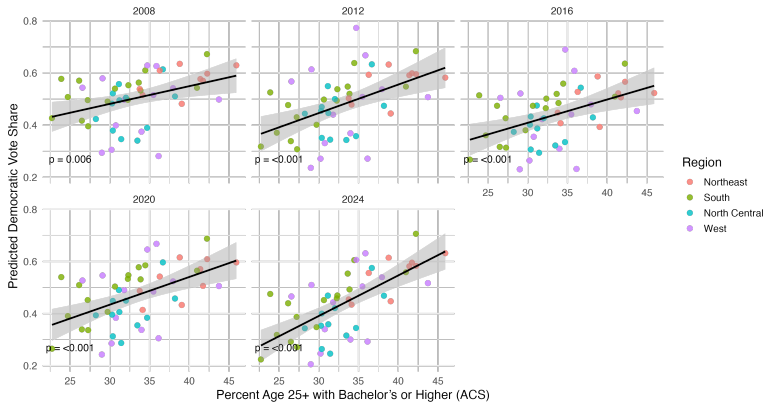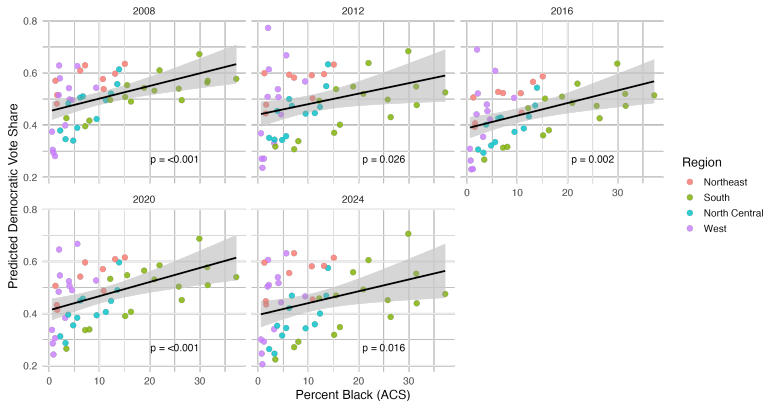
Predicted Democratic Vote Share vs. % Female Population
Shaded by Region • ACS 2022 5-Year Estimates

Predicted Democratic Vote Share vs. % Black Population
Shaded by Region · ACS 2022 5-Year Estimates

Conclusion

- MRP provides reliable state-level estimates
- Works even without in-state exit polls
- Possible tool for future election analysis and race calling

Exit Poll Dashboard (Bonus)

- Public-facing dashboard developed
- Interactive archive of historical exit poll data
- Vision: cross-tabs, trend tracking, and more
- Link here.

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