How Social Ties Mobilize and Polarize: Social Network Determinants of Election Outcomes

Keywords: population-scale social networks, social segregation, voter turnout, right-wing voting, political polarization

Extended Abstract

Political behaviour research has a long tradition of looking at voters through an attribute-based lens, understanding people as simply a vessel for carrying a combination of socio-demographic features. For instance, it is common to predict which people will turn up to vote on an election day given their education level, age, and income [1, 2]. Similarly, much of the literature explains the rise of polarization and right-wing voting as purely a matter of being of lower education, older age, and lower socioeconomic status [3]. Yet such explanations, while influential, overlook the fact that individuals are embedded in social networks. To fully understand electoral behavior, we need to move beyond individual attributes and examine how social structures condition political participation and preferences. This study takes up that challenge by addressing the question of how social segregation of social networks and the spatial dispersion of social ties shape electoral outcomes.

We combine population-scale social network data from the Netherlands [4, 5] with electoral results, both sources aggregated to the neighborhood level [6], to estimate the relationship between network characteristics and two key outcomes: voter turnout (Figure 1A) and political polarization (Figure 1B). Segregation is operationalized using Newman's assortativity across multiple dimensions (income percentiles, level of educational attainment, migration background – Figure 1C-D), while spatial dispersion is captured through distance-weighted entropy of socially connected neighborhoods. These measures are integrated into a baseline model that controls for demographics (household composition, age, education), economic conditions (income inequality, unemployment, social benefits), and prior turnout. We evaluate multiple model architectures, including OLS regression, Lasso regularization, random forest, XGBoost, and LightGBM, to test the robustness of our findings.

The results demonstrate that segregated networks matter for electoral mobilization and polarization, while spatial dispersion of contacts does not exert a significant independent effect. Specifically, neighborhoods with more homogeneous networks by education show reduced collective engagement, consistent with lower exposure to informational spillovers. In contrast, income-based homogeneity is associated with higher turnout, possibly reflecting heightened awareness of inequality. Segregation by migration background increases both turnout and alignment with parties emphasizing migration issues, contributing to ideological convergence on the right, an especially salient dynamic in the 2023 elections in the Netherlands. Yet despite these substantive associations, incorporating network predictors provides only marginal gains in predictive accuracy over baseline models, underscoring both the limitations of existing data and the difficulty of capturing meso-level mechanisms in electoral behavior.

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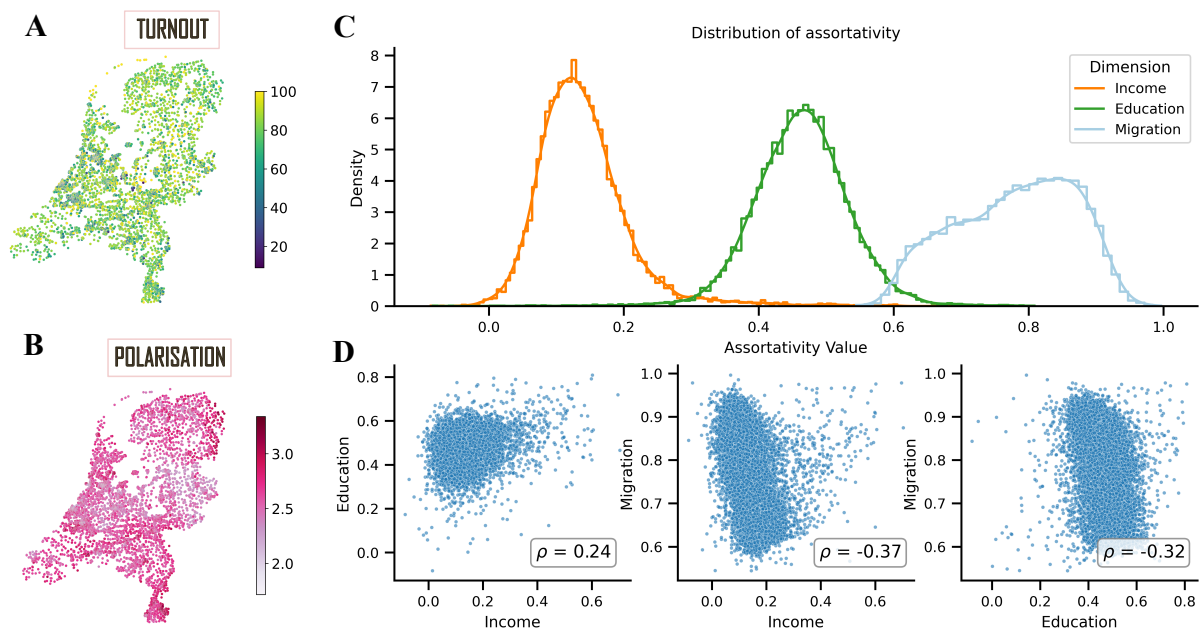
Figure 1: **Elements of the research design.** (A) Spatial distribution of voter turnout; (B) Spatial distribution of political polarization; (C) Distribution of Newman's assortativity by income, education, and migration background in the population-scale social network; (D) Pairwise correlations among segregation dimensions.