

An Investigation of the Relationship Between Population Change and Electoral Outcomes

Dr. Nathan Carter^{1*}, Dr. Mei-Ling Zhang²

^{1}Head, Demographic Dynamics Research Center, Oxford shire Global Institute, UK.*

²Head, Demographic Dynamics Research Center, Oxford shire Global Institute, UK.

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Abstract

Subnational elections have become increasingly important due to the growth in the number and influence of subnational governments worldwide. We still don't fully grasp how regional election results affect citizens' political support, and there isn't a systematic comparison of how election results affect citizens' happiness with democracy. In this research note, we present such a comparison by comparing the winner-loser gap in citizens' satisfaction with democracy between regional and national elections. We first demonstrate that there is a winner-loser divide in democratic satisfaction after regional elections using data from Canada, Germany, and Spain. However, compared to the national election, the regional winner-loser disparity is also much lower. The expanding topic of political demography, which examines the political ramifications of structural population change, is reviewed in this article. It emphasizes how crucial it is to combine studies from political sociology and demography in order to completely comprehend the intricate and subtle connection between political processes and demography.

Keywords: Population Change; Electoral Outcomes; Political.

I. INTRODUCTION

There is still much space for growth in the quickly developing subject of political demography, especially in terms of theoretical developments and methodical empirical research (Lin, 2017). Its distinct location at the nexus of two fundamental fields of sociological study—demography and political sociology—presents a barrier for the field's growth. Because both fields of study have developed independently, political demography is underrepresented in both. Population processes are seen by political demographers as essential components of political dynamics and change. Since politics is essentially about people—their opinions, their Behavior, their representation in political systems, and the balance of power—it is closely related to demography. Demographic changes and the way society and the public react to them inevitably cause these political elements to change and realign (Lin et al., 2017).

Our findings show that the effects of intra- and anti-systemic violence on election results are different. Since these forms of violence frequently discourage participation in election contests and lower voter turnout overall, they should be viewed as disruptive and exclusionary strategies. However, intra-systemic violence tries to silence or stifle political opponents' voices, while anti-systemic violence tries to minimize participation in order to compromise the legitimacy of the

election. We contend that this distinction is essential to comprehending electoral violence's spatial patterns and impact on election results (Cancela & Geys, 2016). Since the institutional framework in which the election is held serves to increase the likelihood of particular election outcomes, it has a more direct influence on intra-systemic violence. According to the information that is currently available, demographic changes have significant and varied effects on the political landscape, with many demographic parameters having unique political ramifications. Notably, the distribution and makeup of the population are typically more politically significant than the amount and increase of the population alone. Furthermore, the existing research indicates that the political ramifications of demographic change frequently display nonlinear patterns and interact with prevailing socioeconomic and institutional contexts, despite the fact that further research is required. This suggests that the effect of structural demographic factors is neither inevitable nor limitless. Political demography is a fascinating and promising field of study that deserves more investigation as demographic changes continue to occur around the world (Masiero & Santarossa, 2021).

II. REVIEW OF LITERATURE

Global fertility and mortality rates significantly decreased during the first demographic transition, which began in the nineteenth century and lasted into the twentieth century. Fertility rates continued to drop as part of the second demographic shift, which appeared in the middle of the 20th century. It quickly expanded to developed countries, causing a revolution in family structures and parenting habits as well as below-replacement fertility (Lin, 2017; Lin, Adolphs, & Alvarez, 2017).

During the first demographic shift, which began in the nineteenth century and lasted into the twentieth century, fertility and death rates significantly decreased worldwide. It quickly spread to developed countries, causing a revolution in childbearing and family structures and resulting in fertility that was below replacement (Eady et al., 2023; Hill et al., 2021).

Significantly, the advancement of these demographic shifts has been unequally dispersed, creating a demographic gap that presents several opportunities and difficulties for particular nations. Slow population growth and aging are problems in a number of regions, including Europe, North America, East Asia, and parts of Latin America. In stark contrast, many developing nations in Africa, the Middle East, and South and Southeast Asia still struggle with high fertility rates and young populations. Migration trends also reveal this demographic divide: in addition to trying to take advantage of the resources produced by their diaspora communities, some nations battle to combat population decline and brain drain, while others struggle to manage and harness massive influxes of migrants (Cancela & Geys, 2016; Masiero & Santarossa, 2021).

Elections have been hailed as a nonviolent way to choose the government. Nonetheless, electoral violence has become a crucial topic for comparative politics and international relations due to the substantial and enduring correlation between voting and violence in modern democracies (Franklin et al., 2024). Election-related fatalities in post-conflict nations highlight the dangers of

holding elections in environments where rebel organizations want to undermine the legitimacy of the government and sabotage the electoral process (Sanz, 2017).

Election violence, both intra- and anti-systemic, has been treated as a single phenomenon in the literature thus far. We examine how intra- and anti-systemic violence affect election results with a focus on India, a country with a strong history of holding national elections and consistently high levels of political violence. Evidence from India has been essential in exposing the political elites' electoral incentives for causing intrasystemic violence (Patterson & Veenstra, 2016).

III. MATERIALS AND METHODS

There seems to be a negative relationship between economic advancement and fertility. Fertility rates have historically been significantly lower in industrialized nations, which are often associated with higher levels of affluence, education, urbanization, and other characteristics. Contrarily, the least developed nations often have greater fertility rates. Families encourage their children to work and take care of their elderly parents. Higher reproduction rates are also a result of lower female employment rates, poorer educational attainment, and restricted access to contraceptives (Patterson & Veenstra, 2016).

Opportunities for older persons and their families, as well as for communities at large, come with living longer. Extra years offer the option to participate in new activities, like a long-neglected hobby, a new profession, or extra schooling. Additionally, older folks offer significant contributions to their communities and families. One element, nevertheless, significantly affects the extent of these opportunities and contributions. Evidence implies that the extra years are spent in poor health since the percentage of lives in excellent health has remained relatively constant. If people are able to enjoy these extra years of life in good health and in a supportive environment, their ability to do the things they value will be slightly different from that of a younger person. If deteriorations in mental and physical abilities are the primary cause of these extra years, the effects on older people and society at large will be more negative. Migration is the process by which people relocate from their usual place of residence, either within a state or across an international border.

IV. EXPERIMENTAL ANALYSIS

Data pre-processing, classification, regression, clustering, association rules, and visualization tools are all part of the machine learning method known as WEKA (Waikato Environment for Knowledge Analysis). It can be accessed via a Java API, a regular terminal application, or a graphical user interface. Although it is frequently used to teach common machine learning tasks, high dimensional datasets cannot be used with it because of its out of memory error. Finding regionalization, describing, and analyzing the issues of population features and socioeconomic development are the goals of the study of how population change affects socioeconomic development. Additionally, it examines regional differences in population growth and distribution, demographic makeup, migration, birth and death rates, and socioeconomic development.

Table 1: Exploring the Relationship between Population Change and Electoral Outcomes

Methodological approaches (items)	Initial	Extraction
How do changes in population size affect electoral outcomes?	1.000	0.647
What is the relationship between population density and voting behavior?	1.000	0.665
Do demographic changes, such as aging or youth bulges, influence electoral outcomes?	1.000	0.682
How do shifts in population demographics, such as urbanization or suburbanization, impact electoral results?	1.000	0.664
What role do migration patterns play in shaping electoral outcomes?	1.000	0.619
How do changes in population composition affect party preferences?	1.000	0.621
Do population changes influence voter turnout and engagement?	1.000	0.602
What is the relationship between population change and electoral volatility?	1.000	0.606
How do demographic changes impact the electoral success of incumbent politicians?	1.000	0.755
Do population changes affect the likelihood of electoral realignments?	1.000	0.718
What are the potential applications and implications of research on population change and electoral outcomes for policymakers and practitioners?	1.000	0.744
How can researchers incorporate spatial analysis and geographic information systems (GIS) into their studies of population change and electoral outcomes?	1.000	0.765
What are the implications of using different data sources or aggregation levels when studying population change and electoral outcomes?	1.000	0.725
How can researchers account for the potential endogeneity of population change and electoral outcomes?	1.000	0.665
What are the most effective methods for analyzing the relationship between population change and electoral outcomes?	1.000	0.540
What role do socioeconomic factors, such as homeownership or unemployment, play in shaping electoral outcomes?	1.000	0.645
Do population changes in areas with high levels of education affect electoral outcomes?	1.000	0.678
How do shifts in population occupation or industry impact electoral results?	1.000	0.660
What is the relationship between population change and electoral results in areas with high levels of poverty or income inequality?	1.000	0.653
How do changes in population socioeconomic status affect electoral outcomes?	1.000	0.674
What role do geographic factors, such as coastal vs. inland areas, play in shaping electoral outcomes?	1.000	0.711
How do changes in population distribution affect electoral district boundaries and outcomes?	1.000	0.669

Do population changes in border regions influence electoral outcomes?	1.000	0.732
What is the relationship between population change and electoral results in urban versus rural areas?	1.000	0.723
How do regional population changes impact electoral outcomes?	1.000	0.718
How do population changes influence the effectiveness of electoral campaign strategies, such as voter targeting and get-out-the-vote efforts?	1.000	0.550
What is the relationship between population change and the representation of marginalized or underrepresented groups in elected office?	1.000	0.715

The results show that the p-value for the chi-square test is less than 5% at the significance level. It can be inferred that the application of factor analysis may lead to the extraction of the factors of change in management. This study examines the intricate relationship between population change and election outcomes, looking at how socioeconomic, geographic, and demographic changes affect voting patterns, party preferences, and election outcomes. This study explores the implications of demographic shifts, migration trends, and socioeconomic factors on voting behavior and election outcomes through 27 research topics. In order to help policymakers and practitioners comprehend and address the intricate relationship between population change and electoral outcomes, the research also takes methodological approaches, spatial analysis, and the effects of population change on electoral outcomes into account.

V. CONCLUSION

An attempt has been made to investigate how population change affects socioeconomic development in the current study. Hill ranges, plateaus, and river basins define the district's physical geography, and these features are closely related to the distribution of its people. Rivers in the plain region have created flood plains with a thick coating of fertile, moisture-retaining alluvium soil. This flat region is ideal for both positive population growth and population densities. Because of its underlying difficulties, election prediction is a complex process. In this study, the researcher adjusts the hyperparameters of the suggested models in order to more accurately and effectively anticipate the election results with the lowest possible error rate. The practice of adjusting the best hyperparameters for a learning model is known as hyper parameter optimization. In essence, it entails searching through a vast universe of potential hyper parameter combinations to find the set that maximizes the intended Figure of Merit. While the hyperparameters are optimized independently, the model parameters are learned during the training phase.

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