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Not all built the same? A comparative study of electoral systems and population health

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ABSTRACT

Much literature depicts a worldwide democratic advantage in population health. However, less research compares health outcomes in the different kinds of democracy or autocracy. In an examination of 179 countries as they existed between 1975 and 2012, advantages in life expectancy and infant health appear most reliably for democracies that include the principle of proportional representation in their electoral rules. Compared to closed autocracies, they had up to 12 or more years of life expectancy on average, 75% less infant mortality, and double the savings in overall mortality for most other age groups. Majoritarian democracies, in contrast, did not experience longitudinal improvements in health relative to closed autocracies. Instead their population health appeared to be on par with or even superseded by competitive autocracies in most models. Findings suggest that the principle of proportional representation may be good for health at the national level. Implications and limitations are discussed.

1. Introduction

Much literature asserts that citizens of democratic nations enjoy better health than those living under autocratic rule. Studies for example link democratic governance to longer life expectancy (Besley and Kudamatsu, 2006; Wigley and Akkoyunlu-Wigley, 2011a; Lin et al., 2012), lower mortality (Navia and Zweifel, 2003; Gerring et al., 2012; McGuire, 2013; Franco et al., 2004; Álvarez-Dardet and Franco-Giraldo, 2006), and lower rates of parasitic disease (Thornhill et al., 2009), patterns which have been remarkably reliable across studies (Muntaner et al., 2011).

Democracy alone does not guarantee the best health, however. Meanwhile many autocracies assume some democratic features, such as the legitimation of rule through elections in the post-communist era (Levitsky and Way, 2010). Moreover, variation in GDP accounts for a large share of cross-national differences in life expectancy (Patterson and Veenstra, 2016), which may suggest democracies are healthier simply because they are richer or that much of this difference is spurious. Questions remain as to which kinds of governing structures in particular support health the best and why that might be so.

To help illuminate potential linkages between political institutions and population health, this study compares national health statistics while specifying five different regime types – two autocratic and three democratic – according to their electoral rules. In so doing, the working presumption is that the ongoing obligations leaders have after they win office, rather than just the electoral process itself, may be what matters most for health.

1.1. How do electoral systems relate to population health?

Some of the most recognized arguments about the potential benefits of democratic elections for health come from Amartya Sen's paper (1994) on the global distribution of famines. In it he explains how elections keep leaders *accountable* to the decisions they make, in that they bear the brunt of poor policy choice in democracies especially. By making foolish decisions (or failing to endorse wise ones) that can impact many people, elected leaders risk decimating their supportive votes and consequentially losing their contracts during a forthcoming election. To avert that risk, the reasoning continues, these leaders will tend to promote policies that protect the health of citizens.

An alternative view is that some social groups, such as the poor working class, incur the most risk to health and yet in democracies can use their votes to compete for policies that will improve their circumstances. The reasoning follows that if democratic elections provide a venue for underprivileged groups to push for egalitarian social policy (Lipset, 1960), and yet if underprivilege (Link and Phelan, 1995, 2010) and inequality (Pickett and Wilkinson, 2015) are also negative determinants of health, then elections act to lift population health overall by incorporating feedback from those most at risk. The emphasis here is thus more equity in policy choice, rather than wise

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policies per se, while the political mechanism linking electoral democracy to population health is more the *representation* of a diversity of perspectives.

1.2. Types of electoral regime

Although this literature has offered other insightful explanations for the correspondence between regime type and health, the above two may be most useful for the purposes of this paper since they ostensibly correspond with different types of electoral democracy. Of these, the *majoritarian* system (also referred to as 'first past the post' and other names), is perhaps the easiest to grasp: the winner of a contest is the single candidate who amasses the most supporting votes, while the losers do not take office and cannot control policy. In this system, only one representative reports to each district, which makes them maximally accountable. Other electoral systems support *proportional representation*. These are designed so that the distribution of party affiliations among the winning candidates should mimic the distribution of preferences among the electorate. To represent a given constituency, votes are recalibrated and apportioned in such a way that runners-up still have the chance to win a seat, depending on how many residual votes supported them. Power therefore does not shift along partisan lines in quite as volatile manner in this type of system. For these reasons, proportional electoral rules are argued to prioritize broader congruence between the policy preferences of elected leaders and the preferences of the voting public, while majoritarian systems prioritize accountability with respect to past policy decisions (Powell, 2000). Some democracies adopt *mixed* systems that incorporate aspects of both majoritarian and proportional electoral rules.

Many authoritarian governments also hold elections, albeit to serve purposes other than to designate leadership. Discussed below as *competitive autocracies*, Levitsky and Way (2010) explain how in some countries a change of leadership is unlikely, but elections still pose a tangible threat to those in power. This is because governments in this kind of regime must either duly count and report votes from an election or face substantial pressure to do so. That being the case, incumbents violate generally accepted protocols to assure that the majority will vote in their favor, such as by monopolizing the media or suppressing private-sector support for the opposition, while still passing as democratic under the watch of other countries. The remaining countries serve as the reference category in this study. *Closed autocracies* do not hold meaningful elections and instead use physical force against their citizens, royal lineage, or other non-democratic means to stay in power. Those that declare public elections in which multiple parties compete do not oblige themselves to honor the outcome.

1.3. Testing the consequences of electoral regimes for health

Few studies examine the correspondence between electoral systems and population health while reaching beyond the conceptual dichotomy between democracy and autocracy. Studies using two different measures of the proportionality of electoral rules find that this variable predicts higher life expectancy and lower rates of infant mortality (Wigley and Akkoyunlu-Wigley, 2011b; Gassner et al., 2006). Comparing proportional and majoritarian democracies to autocracies, Justesen (2012) concludes that only the former type of democracy increases access to treatment for HIV/AIDS. Meanwhile competitive autocracies appear to have lower rates of infant mortality and higher rates of school enrolment compared to closed autocracies (Cassani, 2016).

Less clear is how resilient these patterns are to choice of samples and methods, or when comparing different subtypes of autocracy and democracy. Also unclear are the particular causal mechanisms linking electoral institutions to health. To address these gaps, the following study examines life expectancy, rates of infant mortality, and age-adjusted mortality in older age groups for a larger sample of countries and years while using a more diversified conception of electoral regimes. Some models additionally consider economic and policy outcomes that may be germane to health. The view that "wealthier is healthier" (Pritchett and Summers, 1996; also see Deaton, 2013, p. 34 regarding *logged* income and life expectancy) at the same time that some regimes may be more adept at growing income than others (Gerring et al., 2005; Knutsen, 2011, 2012) would suggest the latter might be a mediator. Other, much discussed claims are that democracies prevent famine more effectively (Sen, 1994) and that access to high-quality food might explain linkages between health and higher standards of living (McKeown et al., 1972), which may suggest a mediating role for food supply. These are admittedly controversial claims, but merit some consideration. Perhaps more straightforward claims come from the view that electoral rules affect a country's investments in public infrastructures and social safety nets (Persson and Tabellini, 2004, 2005). If variables like income inequality harm health (Pickett and Wilkinson, 2015) while investment in services helps, these could identify linkages between electoral regimes and population health. After exploring these different pathways through mediation analysis below, this study compares results from multilevel models that parse apart cross-sectional and longitudinal effects.

2. Methods

2.1. Population data

Analysis is based on annual data for 179 countries as they existed from 1975 through 2012. The Database of Political Institutions (Beck et al., 2001) was used to categorize electoral regimes. World Bank Indicators were appended to represent national vital statistics, economic prosperity, and national health expenditures. As a first step to address missing values, data from the United Nations National Accounts Database and the 1997 historical supplement to the United Nations Demographic Yearbook were assumed where available and where the World Bank Indicators were absent. The United Nations Population Division provided quinquennial, age-specific probabilities of mortality from any cause. Nutritional data were taken from the Food Balance Sheets of the United Nations Food and Agricultural Organization. The Standardized World Inequality Database (Solt, 2014) provided figures on income inequality. Latitude, which played a role in the multiple imputation, was taken from La Porta et al. (1999).

2.2. Variables

2.2.1. Electoral regime type

A five-part categorical variable is used to distinguish electoral regimes. A country qualifies as democratic only if it scores '7' on both of the variables *EIEC* and *LIEC* from the Database of Political Institutions, which measure the degree to which free and fair elections determine choice of leadership in the executive branch and legislature, respectively. Democracies with *majoritarian* electoral rules score '1' on the variable *PLURALTY* ('pluralism' being another name for the majoritarian system). Democracies with *proportional* electoral rules score '1' for the variable *PR*. Some countries meet both criteria and they are regarded as having *mixed* electoral systems. Often these are the 'mixed member' type of system as in Germany, in which one representative is chosen via the majoritarian method and another is chosen through a proportional logic. A *competitive autocracy* is any country scoring between '6' and '7' for either *EIEC* or *LIEC*, but not '7' for both. This is in the spirit of Levitsky and Way's (2010) construct of competitive authoritarianism, but is not the operational definition they use, so the current term is used instead. The remaining countries are regarded as *closed autocracies* and serve as the referent in statistical