



Voting turnout and population health status in the OECD countries: the role of healthcare systems

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ABSTRACT

Despite ample evidence on individual-level relationship between voting behaviors and health conditions, the country-level bidirectional association between political participation and health outcome remain uncertain. We used simultaneous equation methods to explore the bidirectional connection between self-reported health status and voting turnout among 36 OECD countries. The results confirmed that health condition promotes voting turnout and a higher voting rate also stimulates health status, even at the country level. Our approach could provide a framework for understanding a recursive interrelationship between the aggregated health and political indicators, highlighting the roles of country-level institutional and cultural determinants.

Key words: bidirectional relationship, OECD countries, self-rated health, voting turnout

Introduction

A review of the literature reveals that the relationship between health and voting turnout could be bidirectional although neither is yet fully understood (Mattila, *et. al.*, 2013). Voting appears to be a significant predictor of health conditions, only if regarded as an unconventional political participation or social capital indicator (Sundquist & Yang, 2007). On the other hand, health conditions or self-rated health is found to be a significant factor that determines voting behaviors in many studies, mostly in developed countries (Denny & Doyle, 2007). However, most of these studies have focused on the individual-level or constituency-level association within a country between voting activities and health condition,

highlighting the effects of sociodemographic factors of the individuals such as age, gender, ethnicity, and so forth (Bazargan, Kang, & Bazargan, 1991).

Although the literature supports that a country's political traditions and policies have been associated with systematic patterns in population health over time (Navarro, *et. al.*, 2006), few studies have directly examined the bi-directional association between population health status and voting turnouts at the country level. However, the resource and mobilization models of voting participation emphasizing the roles of economic resources and social mobilization linked to better health are not only applicable at the individual level but could also be extended to the country level to explore the interplay of country-specific health and political indicators. Moreover, despite the bidirectional nature of the relationship between

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health and voting turnout as an instrumental variable of political participation, there has been no consensus in the literature on which direction is more plausible or dominant.

Methods

The current study provides some preliminary evidence on the country-level bidirectional relationship between health and voting using empirical data from the OECD's 2016 Your Better Life Index (www.oecdbetterlifeindex.org). Although these data rely only on aggregated country-level indicators and thus are sensitive to within-country distribution of multidimensional well-being, no data is currently available to produce high-quality, internationally comparable country-specific statistics to understand what drives economic, social and political forces for all OECD countries. We used simultaneous equation methods to obtain evidence of the bidirectional connection between the two country-level indicators in the data, meaning that self-reported health condition promotes voting turnout and, in its turn, a higher voting rate stimulates self-rated health status. We anticipate that our approach may provide a broader framework for understanding a recursive interrelationship between the aggregated health status and the degree of political participation in the countries and help fill the gap in the literature with empirical evidence from the OECD countries.

Results

<Table 1> shows the estimate results from multivariate regression models. The model (1) - the simultaneous equation model - indicates that the bidirectional association between voting turnout and health evaluations among the OECD countries is statistically significant and positive in both directions when controlling a different side direction. The model reveals that a one percent increase in health evaluation raises voting turnouts by 0.3 percent, which is consistent with previous studies employing individual-level analyses (Denny and Doyle 2007; Mattila, *et. al.* 2013; Navarro, *et. al.* 2006; Sundquist and Yang 2007). The other direction is also statistically significant, showing that a one percent increase in voting turnouts raises the self-reported health status in a country by 0.4 percent. This result also corresponds to some literature focusing on individual-level association, but the voter turnout was never a significant predictor of health evaluations

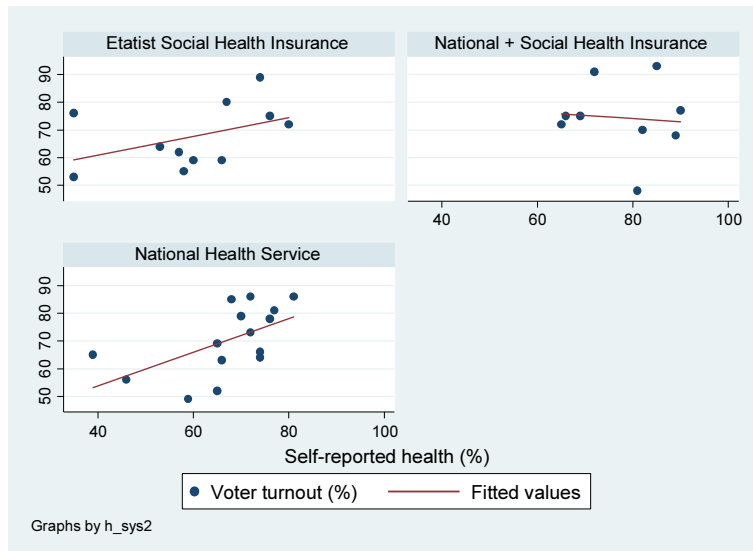
<Table 1> Model results

VARIABLES	(1) SEM model	(2) SEM model	(3) OLS
Self-reported health (%)	0.351* (0.185)		0.678** (0.244)
Employment rate (%)	-0.446* (0.265)		
Personal earnings (USD)	0.000221 (0.000181)		
Stakeholder engagement for developing regulations (Score)	-3.168 (2.259)		-4.279 (2.915)
Years in education (Year)	-58.95** (27.27)		-92.26** (39.95)
education year^2	1.721** (0.792)		2.738** (1.154)
National Health Service in Bohm's health system	5.204 (5.727)	-12.83** (6.145)	8.425 (7.917)
National Health + Social Health Insurance	3.869 (5.687)	-5.207 (5.294)	10.77 (6.731)
Etatist Social Health Insurance	6.442 (4.750)	-11.18** (4.569)	8.526 (6.573)
Voter turnout (%)		0.467** (0.219)	
Housing expenditure (%)		1.382*** (0.504)	-1.115 (0.920)
Life satisfaction (Score)		9.129*** (2.779)	-7.043 (6.320)
Feeling safe walking alone at night (%)		0.173 (0.172)	-0.160 (0.236)
Time devoted to leisure and personal care (Hour)		-1.176 (2.077)	7.121 (4.378)
Employees working very long hours (%)			0.673* (0.352)
Long-term unemployment rate (%)			-0.579 (0.857)
Constant	572.5** (238.0)	-40.78 (34.68)	768.8** (344.9)
Observations	36	36	36
R-squared	0.395	0.629	0.535
Adj. R-squared			0.261

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

at a country level when the covariance of voter turnouts and health self-evaluations were not considered as in this model.

The model (2) reports the result of ordinary least square (OLS) estimation as a way to compare and confirm the statistical robustness of the simultaneous equation model. The estimated coefficient of the self-rated health variable from the OLS model looks more significant and almost double in size compared to that from the simultaneous equation model (0.67 vs. 0.34). It can be argued that the OLS estimate may be over-estimated since it fails to incorporate a potential bi-directional interplay between the variables by controlling the covariance of voting turnout and self-reported



<Figure 1> Voter turnout vs. health status by health system

health conditions. Given that the simultaneous equation model should provide more precise estimates than an OLS model, it appears evident that bidirectional association between voting turnout and self-reported health conditions could be substantial at the country level among the OECD countries and should be considered in any future analysis and interpretation.

Conclusion

In summary, despite relatively sufficient evidence on individual-level relationship between voting behaviors and health conditions, improvement in the understanding of the country-level bidirectional association between voting turnout and health status is something that needs to be explored in future studies. This study is the first of its kind to report evidence of how health status and political participation are intertwined to each other at the country level, implying that the results from the one-directional model need to be interpreted with caution.

References

- Bazargan, M., T. S. Kang, and S. Bazargan. 1991. A multivariate Comparison of Elderly African Americans and Caucasians Voting Behavior: How Do Social, Health, Psychological, and Political Variables Effect Their Voting? *The International Journal of Aging and Human Development*. 32(3): 181-98.
- Denny, K. and O. Doyle. 2007. Analysing the Relationship between Voter Turnout and Health in Ireland. *Irish Medical Journal*. 100(8): suppl 56-58.
- Mattila, M., P. Söderlund, H. Wass, and L. Rapeli. 2013. Healthy Voting: The Effect of Self-reported Health on Turnout in 30 Countries. *Electoral Studies*. 32(4): 886-891.
- Navarro, V., C. Muntaner, C. Borrell, J. Benach, A. Quiroga, M. Rodriguez-Sanz, N. Verges, and M. Pasarin. 2006. Politics and Health Outcomes. *The Lancet*. 368(9540): 1033-1037.
- Sundquist, K. and M. Yang. 2007. Linking Social Capital and Self-rated Health: A Multilevel Analysis of 11,175 Men and Women in Sweden. *Health & Place*. 13(2): 324-334.

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