VOTER TURNOUT AND TUBERCULOSIS ENDEMIC IN UKRAINE

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Abstract

In this paper, I am looking into the effect a tuberculosis (TB) endemic in Ukraine has on voter turnout in general elections. I look at a 10-year span that included 4 elections and analyze the effects TB has on turnout in each of the 24 administrative and electoral regions of Ukraine. In my model, I employ an OLS regression analysis with a robust standard error and cluster analysis checks. The findings suggest that TB has a negative impact on voter turnout and it is statistically significant when controlling for GDP, unemployment and corruption perception. The 2014 election year yields results that are not statistically significant which I attribute to the demographic shock following the Russian invasion in Ukraine. Excluding these elections reverts findings to statistical significance. In the paper, I explain the mechanisms which may cause TB to have such an effect on turnout and propose an additional institutional mechanism that can incentivize the neglect of TB by local authorities in Ukraine. Finally, I outline the possible extension of the research and discussion of the topic.

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TB - Tuberculosis
SMD - Single member district
IDP - Internally Displaced Person
CIS - Commonwealth of Independent States
FPTP - First-past-the-post

1 Introduction

Voting turnout has been considered one of the bedrocks and the main measures of political participation. This is, in essence, the main legitimizing mechanism of a democratic state. Since the mid 20th century, however, the political participation, including voting turnouts, has been in a steady decline in Western democracies. This alarming trend has been attributed to various factors, including generational difference, social and economic factors[1] among many others. This trend has been observed in most Western democracies, but what is even more distressing is that it has been especially pronounced in post-Communist and nascent democracies, as argued by many scholars, including Kostelka (2017)[2]. It is difficult to pinpoint the reason for this finding, as on the one hand - the countries that have joined the democratic world should be eager to utilize the newly-acquired rights and not suffer from democracy 'saturation', and on the other - these countries are characterized with almost a complete lack of democratic culture and history of voting. Regardless of which point is more prevalent - the interest in understanding how and why Eastern Europeans vote is quite high. The same goes for understanding what obstacles they face when they

[1]Gallego, Aina. "Where else does turnout decline come from? Education, age, generation and period effects in three European countries." Scandinavian Political Studies 32.1 (2009): 23-44.

[2]Kostelka, Filip. "Does democratic consolidation lead to a decline in voter turnout? Global evidence since 1939." The American Political Science Review 111.4 (2017): 653.

do not vote.

Post-USSR countries have adopted a variety of electoral systems after the end of Soviet occupation. Ukraine has been one of the most unstable countries in this regard, changing the system almost every time an election was about to happen. Currently, Ukraine has a mixed electoral system for Parliamentary elections, where the seats in the Parliament are equally distributed between PR and SMD districts. It has been well established, that lower turnouts are more common in single-member district electoral systems, as compared to proportionate representation systems[3]. Perhaps this variety of electoral mechanisms qualifies Ukraine more than any other country in the region to serve as a study subject of political participation and political behavior.

Speaking more broadly, despite its relative isolation from supra-national organizations on the continent, like the EU or the CIS (Commonwealth of Independent States), Ukraine still shares the same trends in political participation as the rest of the continent. However, as a country with an under-developed political culture, legacy of the Soviet Union, the question of political engagement by ordinary citizens is ever more pressing in Ukraine, than, say, Switzerland. Typically, less than half of eligible youth voters do actually vote [4], among the approximately 6 millions of Ukrainians living outside the country, only 1% [5] of them has voted in the most recent elections. Ukrainians, both the official bodies and NGOs/civil activists, promote the

[3]Selb, Peter. "A Deeper Look at the Proportionality—Turnout Nexus." Comparative Political Studies, vol. 42, no. 4, Apr. 2009, pp. 527–548, doi:10.1177/0010414008327427.

[4]According to analysis by Liga https://news.liga.net/politics/news/molodej-byla-aktivnee-na-vyborah-chem-v-2014-m—reyting

[5]According to the central election commission (CEC), only 55,000 Ukrainian citizens out of a total of 6 million living abroad actually voted

sense of 'civic duty' by encouraging citizens to vote through campaigns, viral content and 'town-hall' meetings, often times borrowing techniques used by the more developed western democracies[6]. The decreasing turnout in Ukraine poses an additional threat, as compared to the above-mentioned example of Switzerland. In contrast to Switzerland, or any other Western democracy, Ukraine has a strong oligarchic influence and a cumbersome electoral system. This means that an ever-diminishing number of people is needed to win a race in a typical Ukrainian single-member district. While 'democracy fatigue' can cause a citizen in a Western European country to lose effective representation, in Ukraine this can be used to hijack elections and cement the oligarchical and corrupt official's position. In this way, understanding the most effective ways to make people vote in Ukraine is not only a tool of improving democratic representation, generally speaking, but also a tool to fight oligarchy, making it more and more expensive for individual oligarchs to 'steal' elections.

Among the many factors influencing voter turnout, and one that hasn't been extensively analyzed, is health. Even more specifically, the certain conditions that are instrumental in understanding the well-being of a society, like TB, are largely overlooked in favor of economic or social explanations of varying turnouts and political behaviour. Various conditions have different effects on voting, but, generally, it is believed, that 'healthier' populations have higher turnout rates. Only in the US in the 2010 Midterm Election the 'disability gap' (the difference between the healthy population and people with disabilities) has 'cost' about 3 million votes that were

[6]e.g. the famous 'Dear young people, don't vote' video https://www.poglyad.tv/ne-golosuj-aktyvisty-stvoryly-video-iz-zaklykom-do-molodi/

not cast due to disenfranchising of the people with major health problems, as found by Schur et al (2013)[7]. Obviously, a much larger number of people were sidelined from participating in elections due to other health conditions that didn't enter the author's model as a 'disability'. Attention to healthcare, as a major political factor, has also been rekindled recently due to several modern developments. Most notably, there have been the outbreaks of diseases spurred almost uniquely by disinformation, as has been the case with the anti-vaccination trend in the US and Ukraine, among other countries; major disruptions in healthcare due to natural disasters and climate change.

I find the indicators of 'health' used in the literature to be rather unconvincing or an oversimplification. Unifying all the possible indicators of health we would want to have might be unfeasible and relying on self-reported health has problems in terms of validity of responses and context - 'excellent health' may mean something entirely different in Sweden and in Belarus, for example. In order to overcome this obstacle and gauge the actual 'health', at least in one of its quantifiable manifestations, I am solely focusing on the rates of increase or decrease of cases of one disease - tuberculosis (TB). There are several reasons to take TB as a litmus paper test for the overall health indicator.

- First, TB is fully preventable and curable, meaning - that it is largely up to the authorities and individuals to eradicate it and there are few or no exogenous factors that cause the disease spread.

[7]Schur, Lisa, and Meera Adya. "Sidelined or Mainstreamed? Political Participation and Attitudes of People with Disabilities in the United States." Social Science Quarterly 94.3 (2013): 811-839.

- Second, TB has been almost eradicated in the late '80s in Ukraine, reaching its nadir in 1990 [8]. This means that the renewed endemic[9] can't be blamed on the historic pre-disposition or trajectory of the TB proliferation.

- Next, TB containment is a national health program priority [10] for Ukraine and the state's willingness and capacity to tackle any nation-wide health problem should be exemplified by this program's success, therefore, TB containment is used as a proxy to overall national health improvement effort.

- Finally, TB is endemic to Ukraine. This means that the disease has been present in a particular region over a long period of time. This enables me to analyze its relation with turnout across an extended period of time and capture multiple elections during which TB persisted.

I expect the increase in levels of TB cases to be associated with a decrease in turnout rates. I believe this relationship to work in two ways. First, the increased levels of TB would indicate a poorer overall health in the district, which is generally believed to depress turnout, as I have mentioned previously. I test this assumption empirically. The second mechanism, that I touch on tangentially in this paper, relates to the institutional setting of the Ukrainian electoral system and the current nature of Ukraine's democracy. Being partially an SMD system and a hybrid regime [11] - I

[8] In 2015 WHO reported that there were 32 cases of TB per 100 000 people in Ukraine in 1990, the lowest in the last 30 years

[9] https://www.iamat.org/country/ukraine/risk/tuberculosis

[10] World Health Organization REVIEW OF THE NATIONAL TUBERCULOSIS PROGRAMME IN UKRAINE,10–22 OCTOBER 2010

[11] Economist Intelligence Unit (2011). Democracy Index 2017. London: EIU.

expect the incumbents to strive for lower turnouts, as it would mean that they would have to gain the support of a smaller number of voters in absolute numbers to win. Hence, this will pose some ethical implications, that I discuss in the paper, regarding the actual effort to tackle healthcare problems and the institutional incentives to do so for the elected officials.

My main hypothesis is stated as follows:

- **Hypothesis** Increased levels of TB disease spread in Ukraine's electoral districts would be associated with a decrease in turnout rates in national elections in those districts.

2 Literature Review

I believe my paper to be located in the largely unexplored area of voting behaviour literature. To be more specific, it is in the intersection of the micro-level analysis of individual propensities of voters to vote, as a factor of their health condition - be it self-reported, or corroborated by medical data, on the one hand, and the macro level analysis of turnout variability as gauged by population-wide factors.

While there has been a general acknowledgement in the academia that poorer health leads to lower political participation on an individual and generalized levels[1][2], some studies have uncovered paradoxical findings. One of the examples here is the finding suggesting that people with asthma and certain cancers are actually more likely to vote than the average citizen[3]. However, I have seen virtually no studies done on testing the same implications for people affected with TB and the first step to do that for me is to look at the macro-level data of districts in Ukraine in regards to the turnout exhibited by their eligible voters and levels of TB of the same district.

A macro-level approach of testing whether there is an effect among the general

[1]Blakely, T A et al. "Socioeconomic inequality in voting participation and self-rated health" American journal of public health vol. 91,1 (2001): 99-104.

[2]Mattila, Söderlund, Wass, and Rapeli. "Healthy Voting: The Effect of Self-reported Health on Turnout in 30 Countries." Electoral Studies 32.4 (2013): 886-91. Web.

[3]Sarah E. Gollust, Wendy M. Rahn; The Bodies Politic: Chronic Health Conditions and Voter Turnout in the 2008 Election. J Health Polit Policy Law 1 December 2015; 40 (6): 1115–1155. doi: https://doi.org/10.1215/03616878-3424450

population, not individuals with certain health conditions, was undertaken by various scholars, most notably by Hobolt, Tilley and Banducci (2013)[4], which found that governmental performance and electoral accountability in the UK is as pronounced in healthcare, as it is in the economy. It is a somewhat surprising finding, as one would expect the economy to reign supreme in the salience of voter's sentiment towards the elected officials. Should the officials realize this - they would surely prioritize healthcare more, which is something I elaborate more on further in the paper and, generally, doubt it actually happening in Ukraine.

I begin with looking at a macro-level influence TB may have on political participation. To a certain degree, there will be a direct link between the two - people affected are experiencing the 'disability gap' and don't vote. Additionally, the causal mechanism between political action and health is not always that direct, as discussed in Albright, Hood, Ma and Levinson (2016) paper[5]. In the study, the authors have concluded that smokers have a higher level of political mistrust leading them to participate less in political activities. One shouldn't expect smoking to be a direct and a physical obstacle to voting, therefore, there is something different that changes the political behavior of these people. I believe the same can be applied to people with TB, even if they are fully capable physically to vote.

Finally, instrumental to my concluding discussion of the implications of the find-

[4]Hobolt, Sara, James Tilley, and Susan Banducci. "Clarity of Responsibility: How Government Cohesion Conditions Performance Voting." European Journal of Political Research 52.2 (2013): 164-87. Web.

[5]Albright, Karen, Nancy Hood, Ming Ma, and Arnold H. Levinson. "Smoking and (Not) Voting: The Negative Relationship Between a Health-Risk Behavior and Political Participation in Colorado." Nicotine and Tobacco Research 18.3 (2016): 371-76. Web.

ings is the literature on enfranchising low-health populations. Evidence shows, that making voting more accessible typically means that previously disenfranchised voters are going to cast the ballots. These are, most usually, people who have particular social, healthcare, geographical or economic obstacles that prevented them from voting. In a study by Fujiwara (2015)[6] the author looks into how the enfranchisement of poorer groups of the population in Brazil (through more accessible voting) has had a serious policy and budgeting implications, reversed the trend of healthcare financing and increasing turnout. This suggests, that making voting more accessible, or improving the health of the population in regions that are characterized by low turnouts, can dramatically shift the status quo in terms of policies demanded from the elected officials. Given that Brazil also has a first-past-the-post electoral system (for the Senate) this finding is especially important for the case of Ukraine.

My input in the existing literature lays in 2 dimensions. First, in using macro-level tuberculosis cases spread as a proxy and a substitute for self-reported health in order to operationalize 'health' in a given district. And second - in analyzing the possible institutional obstacles and incentives for a hybrid regime with an SMD electoral system in effectively tackling such a wide-spanning issue.

[6]Fujiwara, Thomas. "Voting Technology, Political Responsiveness, and Infant Health: Evidence From Brazil." Econometrica 83.2 (2015): 423-64. Web.

3 Data

The bulk of the data needed for my analysis was available through several official Ukrainian state agencies, most notably, the Ministry of Health and the Ukrstat - State Statistics Committee of Ukraine, which is responsible for '*collection and dissemination of statistics in Ukraine*'. I have extracted and translated the data provided by the agencies on TB, unemployment per capita and GDP per capita. The data on my other control variable, corruption index, was provided by Transparency International Ukraine, which I have reached out to.

I was keen on including the 2019 Presidential election in my analysis to have it span almost 10 years of elections and TB spread dynamics. Given that some of the data haven't been collected on 2019, I have tried to use projections or kept the effects fixed for a period of time since the last recorded value. For the 2019 GDP I have used the official Ukraine Cabinet of Ministers forecast[1], the TB and unemployment data for 2019 is used from the previous year. I realize the shortcomings of such an approach, however excluding the 2019 election from the analysis altogether still leaves the findings statistically significant.

Finally, the number of observations in my analysis is largely driven by Ukraine's

[1]The Decree of the Cabinet of Ministers of Ukraine dated December 20, 2017, No. 1089 CHANGES included in the State Strategy for Regional Development for the period up to 2020

administrative division. Ukraine consists of 24 regions and the autonomous republic of Crimea. I have excluded Crimea, annexed by Russia in 2014, from my analysis due to lack of the official data on my variables of interest since the above-mentioned date.

4 Design

In this analysis, I am using an OLS regression over 4 general elections in Ukraine. My main variable of interest is the turnout for each of the 24 regions of Ukraine and the main independent variable is the number of cases of TB per 100 000 people in that given district. I control for regional GDP, unemployment rates and for corruption perception.

Among some of the main variables used to predict voter turnout are education, age and economic status, however, I expect them to be similarly distributed across every region of Ukraine and not being instrumental in explaining the expected variance.

I use a robust standard error regression to correct for possible violation of the assumption of constant variances and finally, I use a clustered regression analysis to correct for possible non-independence of observations.

Dependent variable

- Voter turnout by region in %

Independent variable

- Tuberculosis cases per region per 100 000 people

Control variables

- GDP per capita per region

- Unemployment rate per 100 000 people
- Corruption index

5 Results

5.0.1 Regression Results

Regression results are presented in Table 5.1. They indicate that the increase in tuberculosis reported cases is associated with a decrease in voter turnout in the same district. The coefficient is statistically significant and this supports the posited hypothesis. Interestingly, the control variables did not register statistical significance in the model in their effect on turnout. However, the direction was negative, which may be surprising, albeit not enough to reject the null hypothesis. The total number of observations is 96 - this is the estimation per each of the 24 districts of Ukraine across the 4 national elections.

Table 5.1: Regression Results

	Turnout
TB	-0.136*
	(-2.24)
GDP	-0.0000354
	(-0.38)
Unemployment	-0.398
	(-0.77)
Corruption	-0.0206
	(-0.05)
Constant	74.11***
	(6.23)
Observations	96

t statistics in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

5.0.2 Robust Standard Errors

In order to assuage the possibility of violating the assumption of constant variances due to possible deflation of standard errors, I use a robust standard error regression analysis. The main results remain statistically significant and are reported in Table 5.2.

Table 5.2: Robust Standard Errors Results

	Turnout
TB	-0.136*
	(-2.05)
Unemployment	-0.398
	(-0.88)
GDP	-0.0000354
	(-0.39)
Corruption	-0.0206
	(-0.06)
Constant	74.11***
	(6.43)
Observations	96

t statistics in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Figure 5.1 shows the same coefficients plotted across the years when elections were held. The vertical axis shows turnout rates, while the horizontal ones - the spread of TB. Green dots indicate each of the 24 electoral districts. Visual examination easily spots an outlying year, 2014, which has been mentioned previously and will be discussed in more details further.

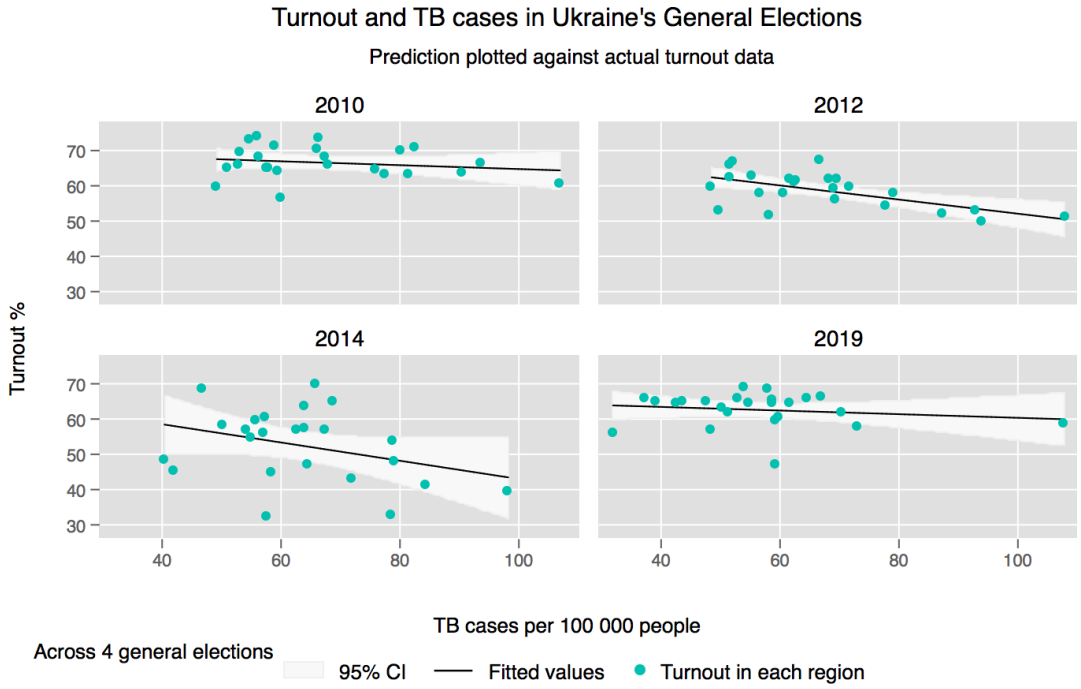

Figure 5.1: "Plotted effect of TB on turnout"

5.0.3 Cluster analysis

In order to correct for non-independence of observations, a cluster analysis must be used. The results of clustering by Ukraine's electoral region are reported in the Table 5.3. After clustering - the relation between TB and turnout ceases to be statistically significant and the null hypothesis can't be rejected.

Table 5.3: Clustering Results

	Turnout
TB	-0.136
	(-2.03)
Unemployment	-0.398
	(-0.74)
GDP	-0.0000354
	(-0.40)
Corruption	-0.0206
	(-0.07)
Constant	74.11***
	(6.39)
Observations	96

t statistics in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

As mentioned previously, 2014 is an abnormal year for Ukraine. The 2014 elections we're an extraordinary elections taken after the ousting of the President V. Yanukovitch and the Euromaidan revolution. The 2014 elections skew my results for two main reasons, in my opinion. First, the typical pro-Russian parties were disbanded or outlawed, like the Communist party, and a vast majority of voters were left

without their primary choice on the ballot box. Second, this is the year of Russia's invasion into Eastern Ukraine. 1.2 million people were forced to flee their homes and officially register as internally displaced persons[1]. Such a huge demographic shock has certainly impacted the normal distribution of the population in the country. Practically speaking, the more mobile, healthy and politically active people have fled, while the others remained or couldn't relocate. I think it is safe to say, that the people with poorer health were more likely to remain in the occupied territories and this would mean that some significant proportion of TB patients in 2014 are suddenly cut from Ukrainian elections.

Excluding this year from the analysis reverts the findings to be statistically significant with the cluster analysis, as shown in Table 5.4.

I also believe that there is a different way to account for this demographic shift and keep the statistical significance of the findings even for the 2014 election year. In order to do that, excluding the Russia-invaded districts from the analysis, as well as tracking where the IDPs fled to (on a district level) would be necessary. This would require additional research and data, which I do not do in this paper.

[1]https://www.unhcr.org/news/press/2018/9/5b97bccd4/unhcr-notes-ukraine-supreme-court-ruling-pension-rights-internally-displaced.html

Table 5.4: Clustering Results, excl 2014

	Turnout
TB	-0.131**
	(-3.75)
Unemployment	0.323
	(0.81)
GDP	0.000115
	(1.45)
Corruption	-0.760**
	(-2.93)
Constant	85.41***
	(11.71)
Observations	72

t statistics in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

5.0.4 SMD and disenfranchising of poor-health voters

One of the more speculative points that I wanted to raise in this paper is that in the SMD system the incumbents would benefit from lower turnouts and, hence, more disenfranchised population. They will bear the immediate blame for poor health conditions in the regions if people go to the polling stations. I would want to expand

the analysis beyond the single presidential election and 3 parliamentary that I currently have, but the preliminary results, as seen in Table 5.5, can be indicative. TB disincentivizes people from voting more during parliamentary elections and with all else being equal (including that people care about electing their representative in the Parliament as much as they care about Presidents) it is plausible to assume that incumbents in the SMD districts may be actively or passively (by not helping alleviate the problem) working against enfranchising the TB afflicted population to vote. By either making voting more accessible to these people or improving their health to a point where they overcome the 'disability' or the 'health gap' the incumbents would effectively be voting themselves out of the office or shifting the status quo (in terms of competitiveness, policy demands, budgeting implications) in a significant manner.

Expanding the number of observations would greatly help support or dismiss this claim in the future.

Table 5.5: Parliamentary vs Presidential Elections

	Presidential Elections, 2019	Parliamentary Elections 2010-14
TB	-0.0979	-0.156*
	(-1.48)	(-2.48)
GDP	0.000142	-0.0000775
	(1.84)	(-0.67)
Unemployment	-0.391	-0.563
	(-0.95)	(-0.89)
Corruption	0	-5.380***
	(.)	(-5.23)
Constant	66.20***	213.1***
	(10.08)	(8.12)
Observations	24	72

t statistics in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

6 Conclusions

Electoral turnout is a paramount index of democracy. It is more important still in young democracies or hybrid regimes, like Ukraine. Among the many divisions that disenfranchise people in terms of their voting patterns is health. In this paper, I have looked at the data of tuberculosis affliction across 24 districts of Ukraine and 4 general elections held in the last 10 years in the country. The results of the analysis show that the districts that experience higher rates of TB cases simultaneously show lower turnout rates. This relation was found to be statistically significant. One election year in the analysis is an outlier - 2014 was characterized by a healthcare system breakdown and major demographic changes following the Russian invasion in Ukraine. Excluding this year from the analysis keeps the findings statistically significant. Robust standard error and cluster analysis substantiate the findings.

I explain the results of TB depressing turnouts via three main mechanisms. The first one is the direct disenfranchisement of 'poor health' population from voting - they do not vote precisely because they are affected by this health condition. The second mechanism works indirectly - the TB rates are a proxy to 'general health' and, as commonly understood in the literature, higher self-rated health leads to higher turnout rates and, finally, I speculate about the incentives of incumbents to actively tackle TB and encourage political participation in a single member district. Given

that TB is an all-encompassing political problem that spans multiple domains of executive and legislative powers, it is nearly impossible for an SMD representative to 'own' this issue and singlehandedly improve the situation without dispersing the resources they have, as well as the spoils they can potentially bring about. The incumbent will not be an issue owner, spend resources allocated to their district and enfranchise voters who have been dismissed previously. This can very easily cost the incumbent their seat, and they would much rather prefer localized spoils (open a school, sports venue or a medical ward) and mobilization of supporters in a district where fewer absolute numbers of voters are required to win the seat. Hence, in order to gain the seat, the neglect of TB can be used as an effective election strategy by the candidate.

6.1 Discussion

I find the area in the intersection of life sciences and political science to be ripe with interesting questions that we now have the data and methods to answer. When it comes to questions of health conditions and the impact on voting behavior, I would like to see the extension of the research into varying institutional settings (SMD vs PR) and see if the same approach that was used in this paper can be generalized to other countries, or other health conditions. In relation to the institutional setting of an election, it would be interesting to see whether we would observe incumbents switching parties or running as independents after their district has suffered an increase in TB rates. Ultimately, this can help us understand how to better incentivize citizens to participate in the democratic lives of their countries and the executives - to undertake

politically costly, but socially and ethically beneficial issues.

Bibliography

[1] Karen Albright et al. "Smoking and (Not) Voting: The Negative Relationship Between a Health-Risk Behavior and Political Participation in Colorado". In: *Nicotine and Tobacco Research* 18.3 (2016), pp. 371–76.

[2] Susan A Banducci and Jeffrey A Karp. "Electoral systems, efficacy, and voter turnout". In: *The comparative study of electoral systems* (2009), pp. 109–134.

[3] T. A. Blakely et al. "Socioeconomic inequality in voting participation and self-rated health American journal of public health vol. 91". In: 1 (2001), pp. 99–104.

[4] Barry C Burden et al. "How different forms of health matter to political participation". In: *The journal of politics* 79.1 (2017), pp. 166–178.

[5] Thomas Fujiwara. "Voting Technology, Political Responsiveness, and Infant Health: Evidence From Brazil". In: *Econometrica* 83.2 (2015), pp. 423–64.

[6] Aina Gallego. "Where else does turnout decline come from? Education, age, generation and period effects in three European countries". In: *Scandinavian Political Studies* 32.1 (2009), pp. 23–44.

[7] Sarah E. Gollust and M. Wendy. "Rahn; The Bodies Politic: Chronic Health Conditions and Voter Turnout in the 2008 Election". In: *J Health Polit Policy Law* 1 (Dec. 2015), p. 40. DOI: https://doi.org/10.1215/03616878-3424450.

[8] Jake Haselswerdt. "Expanding Medicaid, Expanding the Electorate: The Affordable Care Act's Short-Term Impact on Political Participation". In: *Journal of health politics, policy and law* 42.4 (2017), pp. 667–695.

[9] Sara Hobolt, James Tilley, and Susan Banducci. "Clarity of Responsibility: How Government Cohesion Conditions Performance Voting". In: *European Journal of Political Research* 52.2 (2013), pp. 164–87.

[10] Tatiana Kostadinova. "Voter Turnout Dynamics in Post?Communist Europe". In: *European Journal of Political Research* 42.6 (2003), pp. 741–59.

[11] Tatiana Kostadinova and Timothy J Power. "Does democratization depress participation? Voter turnout in the Latin American and Eastern European transitional democracies". In: *Political Research Quarterly* 60.3 (2007), pp. 363–377.

[12] Filip Kostelka. "Does democratic consolidation lead to a decline in voter turnout? Global evidence since 1939". In: *The American Political Science Review* 111 (2017), p. 4.

[13] Mikko Mattila et al. "Sick leave from work and the voting booth? A register-based study on health and turnout". In: *Acta Politica* (2018), pp. 1–19.

[14] Sderlund Mattila. *Wass, and Rapeli. "Healthy Voting: The Effect of Self-reported Health on Turnout in 30 Countries." Electoral Studies 32.4 (2013): 886-91.* Web.

[15] Michael McFaul. "Ukraine imports democracy: External influences on the Orange Revolution". In: *International Security* 32.2 (2007), pp. 45–83.

[16] Christopher Ojeda and Julianna Pacheco. "Health and voting in young adulthood". In: *British Journal of Political Science* (2017), pp. 1–24.

[17] John O'Loughlin and James E Bell. "The political geography of civic engagement in Ukraine". In: *Post-Soviet Geography and Economics* 40.4 (1999), pp. 233–266.

[18] World Health Organization. *Prevention, control and care of tuberculosis in Ukraine*. Report, 2015.

[19] Julianna Pacheco and Jason Fletcher. "Incorporating health into studies of political behavior: Evidence for turnout and partisanship". In: *Political Research Quarterly* 68.1 (2015), pp. 104–116.

[20] Lisa Schur and Meera Adya. "Sidelined or Mainstreamed? Political Participation and Attitudes of People with Disabilities in the United States". In: *Social Science Quarterly* 94.3 (2013), pp. 811–839.

[21] Lisa Schur and Meera Adya. "Sidelined or Mainstreamed? Political Participation and Attitudes of People with Disabilities in the United States". In: *Social Science Quarterly* 94.3 (2013), pp. 811–839.

[22] Peter Selb. "Deeper Look at the Proportionality Turnout Nexus.Comparative Political Studies, vol. 42, no. 4, Apr. 2009". In: *p* 527 (). DOI: 10.1177/0010414008327427.

[23] Reijo Sund et al. “How voter turnout varies between different chronic conditions? A population-based register study”. In: *J Epidemiol Community Health* 71.5 (2017), pp. 475–479.

[24] R Urbatsch. “Influenza and Voter Turnout”. In: *Scandinavian Political Studies* 40.1 (2017), pp. 107–119.

[25] Stephen White and Ian McAllister. “Turnout and representation bias in post-communist Europe”. In: *Political Studies* 55.3 (2007), pp. 586–606.