Name: Voter Participation

Short Description: Percent of individuals who voted in the 2020 election.

Data Sources(s):

- Primary source for number of votes (numerator):
  - Name: United States Elections Project (USEP), 2020 Presidential Precinct Data
  - Link to Source: http://www.electproject.org/home/precinct_data(as of Dec. 7, 2021)
- Secondary source for number of votes (numerator):
  - Name: The New York Times (NYT), "An Extremely Detailed Map of the 2020 Election" Data
  - Link to Source: https://github.com/TheUpshot/presidential-precinct-map-2020
- Third source for number of votes (numerator):
  - Name: MIT Election Data and Science Lab (MEDSL) County Presidential Election Returns 2000-2020
  - Link to Source: https://dataverse.harvard.edu/dataset.xhtml?persistentId=doi:10.7910/DVN/VOQCHQ
- For crosswalk methods (see calculations section for more information)
  - Name: 2010 Census 5-Digit ZIP Code Tabulation Area (ZCTA5) Shape Files
  - Link to Source: https://catalog.data.gov/dataset/tiger-line-shapefile-2018-2010-nation-u-s-2010-census-5-digit-zip-code-tabulation-area-zcta5-na
- For crosswalk methods (see calculations section for more information)
  - Name: 2010 Census Block Level Population Data
  - Link to Source: https://www2.census.gov/geo/tiger/TIGER2010BLKPOPHU/
- Voting population (denominator)
  - Name: United States Census Bureau, American Community Survey (ACS), 2015-2019 Table DP05
    Variable DP05_0021: Estimate Sex and Age Total population 18 years and over
  - Link to Source: https://www.census.gov/programs-surveys/acs/data.html

Year(s): 2020 (primary source)

Source Geographic Level: Precinct level (primary source)

Stratification: Not available

Selection Rationale: Voting has been found to be associated with better mental health. Research shows that poor mental health leads to low voter turnout, especially when potential voters experience social isolation or stigma related to their mental health. Substance use – including smoking, drinking, and drug use – is also associated with lower voter turnout.[1] Voter participation levels in a community are one measure of civic engagement.

[1] Nelson, C., Sloan, J., & Chandra, A. (2019). *Examining Civic Engagement Links to Health: Findings from the Literature and Implications for a Culture of Health.* RAND Corporation. https://www.rand.org/content/dam/rand/pubs/research_reports/RR3100/RR3163/RAND_RR3163.pdf

Strengths and Limitations

- **Strengths**:
  - [*Importance*] Participation in voting reflects a community's sense of agency, empowerment, and collective belief that they can make an impact. A cycle between political disempowerment and poor health may develop based on the potential bidirectional relationship between voting and health.[2] Depression in particular seems to cause low voter turnout and experiencing depression as a child may predict low voter participation later in life while early civic engagement is associated with lower risk of depression.[3]
  - [*Equity*] This measure captures disparities experienced between population groups. Black populations have faced voter suppression efforts throughout history,[4] and less voting access drives health disparities.[5]
  - [*Relevance & Usability*] Low voter turnout may reflect discouragement, disenfranchisement, or poor mental health. Data on the percent of individuals who voted in the 2020 presidential election are easy to interpret.
  - [*Feasibility*] Data on voter participation are collected and published after every major election by the United States Elections Project[6] (USEP), which is the primary data source for this measure. The USEP is a non-profit that creates statewide electronic precinct maps by obtaining precinct level election data from counties. As of December 7, 2021, the organization has published the results of the 2020 presidential election for 46 states.
  - [*Scientific Soundness*] The 2020 precinct election data produced by the USEP has been carefully sourced and validated by researchers around the country. All decisions about boundary splitting and merging to align voting district boundaries are documented for each state.[7]
- **Limitations**:
  - [*Feasibility*] Precinct election results are difficult to obtain because the quality and format of data varies widely across states. If the USEP stops publishing election data, it will be extremely time-consuming to collect and assemble a

[2] Brown, C. L., Raza, D., & Pinto, A. D. (2020). Voting, health and interventions in healthcare settings: a scoping review. *Public Health Reviews*, *41*, Article 16. https://doi.org/10.1186/s40985-020-00133-6

[3] Nelson, C., Sloan, J., & Chandra, A. (2019). *Examining Civic Engagement Links to Health: Findings from the Literature and Implications for a Culture of Health*. RAND Corporation. https://www.rand.org/content/dam/rand/pubs/research_reports/RR3100/RR3163/RAND_RR3163.pdf

[4] Brown, A., Batt, J., & Kim, E.J. (2020). Beyond the 19th: A Brief History of the Voter Suppression of Black Americans. *Social Education, 84*(4), 204-208. https://www.socialstudies.org/sites/default/files/view-article-2020-08/se-840420208.pdf

[5] Healthy Democracy Healthy People. (2021). *Health & Democracy Index*. https://democracyindex.hdhp.us

[6] McDonald, M.P. (2021). *Precinct Boundary and Election Results Data*. United States Elections Project. Accessed Nov. 15, 2021.

[7] Voting and Election Science Team. (2020). *2020 Precinct-Level Election Results*. Harvard Dataverse, V28. https://doi.org/10.7910/DVN/K7760H

useable dataset. There are alternative data sources, such as the New York Times (NYT), which has published precinct level data for 2016 and 2020 presidential elections; however, the NYT data are less complete. Furthermore, there is typically a one-to-two-year lag on data, which should be taken into consideration for data refreshes.

- [*Scientific Soundness*] As of December 7, 2021, data had only been published for 46 states in the 2020 Presidential Precinct Dataset from the USEP. Therefore, we had to supplement results with additional datasets - the NYT "An Extremely Detailed Map of the 2020 Election" and the MIT "County Presidential Election Returns 2000-2020" data. Data from these sources may not always be directly comparable. Voting data is only available at the county level for one state (Kentucky).
- [*Scientific Soundness*] Voting data from USEP and NYT are available at the precinct level. The crosswalk process for the data from precinct boundaries to ZCTAs is not a one-to-one relationship. Therefore, we used census block level data to apportion the votes proportionally to the population. See the Calculation section below for more information.
- [*Scientific Soundness*] In cases when a vote's precinct was unknown (such as early and absentee votes in some states), the USEP created attribution guidelines based on other votes in the state.[8] Data in these cases may be less accurate.

Calculation:

$$Voter\ Participation = \frac{Number\ of\ votes}{Voting\ population\ (age\ 18\ and\ older)} \times 100\%$$

Crosswalk Process**:**

The USEP and NYT datasets are only available at the precinct level, therefore we implemented a crosswalk method to obtain counts of votes at the ZCTA level. We used a population weighting method to attribute the votes proportionally to ZCTAs based on census block populations and areas of overlap between census blocks, precincts, and ZCTAs. First, we identified geographic overlap between precinct and ZCTA boundaries using shapefiles. Next, we overlaid a census block shapefile linked to population data. Votes were then apportioned to ZCTAs based on the census block population at each intersection of precinct and ZCTA boundaries. For example, if 30% of a precinct's population falls within a ZCTA (based on census blocks or portions of census blocks that fall within the intersection of that precinct and ZCTA), then 30% of the votes from that precinct will be attributed to the ZCTA.

[8] Voting and Election Science Team. (2020). *2020 Precinct-Level Election Results*. Harvard Dataverse, V28. https://doi.org/10.7910/DVN/K7760H