**Name**: Voter Participation

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

**Data Sources(s):**

|  |  |  |
| --- | --- | --- |
| **Data** | **Link** | **Description** |
| 2020 Presidential Precinct Data | <http://www.electproject.org/home/precinct_data> | The Election Project is a non-profit organization which creates statewide election precinct shapefiles with election results. As of December 7, 2021 the organization has published the results of the 2020 presidential election for 46 states. The team used this dataset as the main source for the Voter Participation numerator (number of votes) variable. |
| The New York Time’s “An Extremely Detailed Map of the 2020 Election” Data | <https://github.com/TheUpshot/presidential-precinct-map-2020> | The New York Times worked together with both non-profit and academic entities to create a map showing the results of the 2020 election. The team used this dataset as the secondary source for the Voter Participation numerator (number of votes) variable for the states not found in the 2020 Presidential Precinct Data. |
| 2018 Census 5-Digit ZIP Code Tabulation Area (ZCTA5) Shape Files | <https://catalog.data.gov/dataset/tiger-line-shapefile-2018-2010-nation-u-s-2010-census-5-digit-zip-code-tabulation-area-zcta5-na> | The US Census Bureau created the 2018 ZIP Code Tabulation Areas (ZCTAs) boundaries shapefiles. The team used this dataset to crosswalk the precinct boundaries to the ZCTAs boundaries. |
| 2010 Census Block Level Population Data | <https://www2.census.gov/geo/tiger>  /TIGER2010BLKPOPHU/  https://www.census.gov/geographies/mapping-files/time-series/geo/tiger-line-file.2010.html | The US Census Bureau created the 2010 block-level census population counts shapefile. The team used this dataset to crosswalk the precinct boundaries to the ZCTAs boundaries by using population weighting to attribute the presidential votes. |
| 2019 Census ZCTAs Level 18 + Population Data | <https://data.census.gov/cedsci/table?g=0100000US%>  248600000&tid=ACSST5Y2019.S0101 | The US Census created the projected 2019 ZCTAs level population count stratified by age and sex. The team used this dataset to supply the Voter Participation denominator (voting population) |

**Data Source(s)**:

* Name:
  + Presidential Precinct Data
  + The New York Time’s “ An Extremely Detailed Map of the 2020 Election” Data
  + Census 5-Digit ZIP Code Tabulation Area (ZCTA5) Shape Files
  + Census Block Level Population Data
  + 18 + population level data for ZCTAS
* Link to Source:
  + <http://www.electproject.org/home/precinct_data>
  + <https://github.com/TheUpshot/presidential-precinct-map-2020>
  + <https://catalog.data.gov/dataset/tiger-line-shapefile-2018-2010-nation-u-s-2010-census-5-digit-zip-code-tabulation-area-zcta5-na>
  + <https://www2.census.gov/geo/tiger/TIGER2010BLKPOPHU/?C=S;O=A>
  + <https://data.census.gov/cedsci/table?q=over%2018&g=0100000US%248600000&y=2019&tid=ACSST5Y2019.S0101>

**Year(s):** 2020

**Source Geographic Level**: Precinct level

**Stratification**: Not available

**Selection Rationale:** Voting has been found to be associated with higher mental wellness. 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]](#footnote-2) Voter participation levels in a community are one measure of civic engagement.

**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]](#footnote-4) 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]](#footnote-5)
  + [*Equity*] Black populations have faced voter suppression efforts throughout history,[[4]](#footnote-6) and less voting access drives health disparities.[[5]](#footnote-7) This emphasizes the importance of considering this measure for Black populations.
  + [*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 published after every major election by the United States Election Project[[6]](#footnote-9), which is a non-profit which creates statewide electronic precinct maps by obtaining precinct level election data from counties.
  + [*Scientific Soundness*] The 2020 precinct election data produced by the United States Election Project has been carefully sourced and validated by researchers around the country. All decisions on boundary splitting and merging to align voting district boundaries are carefully documented for each state.[[7]](#footnote-10)
* **Limitations**:
  + [*Feasibility*] Precinct election results are difficult to obtain because the quality of data varies widely across states. Some states, such as California, publish their results in an election format but many only publish PDFs of precinct maps. If the United States Election Project stops publishing election data, it will be extremely time-consuming to collect and assemble a useable dataset. There are alternative data sources, such as the New York Times, which has published precinct level data for 2016 and 2020 presidential elections. Furthermore, there is typically a one-to-two-year lag on data so this should be taken into consideration for data refreshes.
  + [*Scientific Soundness*] Some early, absentee, and questions votes are not reported at the precinct level so typically they are distributed by candidate to precinct based on their share of the precinct-level reported vote.

Nearly half of all voters (46%) voted by absentee or mail-in ballot in 2020 because of the COVID-19 pandemic.[[8]](#footnote-11) So, some estimates of voter participation in communities will be skewed. Furthermore, the data needs to be cross walked from precinct boundary level to ZCTAS level. This method is done by population weighting by apportioning the votes proportionally to the voting age population in each boundary by using census block-level data.

**Calculation**:

**Crosswalk Process:**

Both the 2020 Presidential Precinct Data and The New York Time’s “An Extremely Detailed Map of the 2020 Election” Data are shapefiles with precinct level boundaries instead of ZCTAs. There is no easy way to crosswalk the precinct boundaries to ZCTAs, so the team implemented a population weighting method R script to attribute the votes proportionally to the population. First, the script cleans the 2020 Presidential Precinct Data and uses The New York Time’s “An Extremely Detailed Map of the 2020 Election” Data to fill in the missing states Kentucky, Mississippi, South Dakota, and West Virginia as of December 7, 2021. It is unknown when the states will be published in the 2020 Presidential Precinct Dataset. Secondly, the script finds the intersections between the 2018 Census 5-Digit ZIP Code Tabulation Area (ZCTA5) Shape Files and the 2020 Presidential Precinct Data and The New York Time’s “An Extremely Detailed Map of the 2020 Election” Data. Then, the 2010 Census Block Level Population Data centroids are added up inside each intersection and a data frame is generated which shows the percentage of population inside each intersection so the votes can be attributed buy proportions. For example, if a ZCTA overlaps with 30% of a precinct’s population, than 30% of the votes from that precinct will be attributed to the ZCTA.

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> [↑](#footnote-ref-2)
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> [↑](#footnote-ref-4)
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> [↑](#footnote-ref-5)
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> [↑](#footnote-ref-6)
5. Healthy Democracy Healthy People. (2021). *Health & Democracy Index*. <https://democracyindex.hdhp.us> [↑](#footnote-ref-7)
6. McDonald, M.P. (2021). *Precinct Boundary and Election Results Data*. United States Elections Project. Accessed Nov. 15, 2021. [↑](#footnote-ref-9)
7. Voting and Election Science Team. (2020). *2020 Precinct-Level Election Results*. Harvard Dataverse, V28. <https://doi.org/10.7910/DVN/K7760H> [↑](#footnote-ref-10)
8. Pew Research Center. (2020, November 20). *The Voting Experience in 2020*. <https://www.pewresearch.org/politics/2020/11/20/the-voting-experience-in-2020/> [↑](#footnote-ref-11)