POLICY LAB
CLAREMONT MCKENNA COLLEGE

RESEARCH BRIEF

An Analysis of State-Level Vote Access Changes and Turnout in the 2020 Election

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Executive Summary

Many states made unprecedented changes to vote access during the 2020 election in response to the COVID-19 pandemic. Past research on how vote access affects turnout has necessarily focused on individual state policy changes, such as the institution of voter identification laws or the gradual adoption of mail-in ballots. The 2020 election provides a unique opportunity to examine whether the multiple changes across a variety of states related to vote access contributed to the highest national turnout since 1960. To begin to answer this question, the Policy Lab at Claremont McKenna College created a vote access score for each state based on their changes in 2020 and examined whether county-level turnout was affected. States scored between -1 (Indiana) and +16 (New Jersey), with the median state scoring 5. Using a variety of demographic control variables, we found that a 0.3% increase in turnout was associated with one-point on our access score. For the median state this meant 1.5% of the increase in county-level turnout was associated with state-level access changes. Moreover, we did not find that increases in turnout were associated with partisanship. These findings indicate that more open vote access policies have a positive effect on turnout, and that state-level access changes had a positive effect in Republican and Democratic counties alike.

Key Findings

- In our analysis of county-level turnout, increased access to voting was associated with an increase in turnout in the 2020 general election. The median increase in state-level access was associated with an increase of 1.5% in county-level turnout.
- We did not find a significant relationship between increases in voter turnout and the partisanship of a county. This suggests that a state's increasing access had similar positive effects on turnout in both Republican and Democratic counties.

Creating a Turnout Model to Evaluate Access Changes in 2020

Understanding the relationship between increased voting access rules and turnout in the 2020 general election required an accurate dataset of total votes cast and the total population eligible to vote by county. We determined to use counties as our units of observation, as in all states they are the primary administrative bodies responsible for the conduct of elections. We placed a premium on accuracy to minimize measurement errors that would cloud the degree to which various factors, such as vote access, partisanship, income, and race influenced overall turnout. Despite the commonality of county-level maps of turnout for presidential votes in 2020, finding the underlying data proved difficult, as there is no complete and accurate source for this information. After extensive research we constructed a very accurate county-level turnout statistic for the entire US, comprised of total votes cast divided by the citizen voting age population (CVAP):

$$\text{turnout} = \frac{\text{total votes cast}}{\text{citizen voting age population (CVAP)}}$$

The process we undertook to construct this turnout statistic is detailed below.

Constructing County-level Total Votes

County and state-level turnout is sometimes reported from the total votes for the highest office in a given election. For presidential elections this would be votes cast for president. Calculating turnout in this way does not account for ballots cast that did not record a vote for the highest office. Counties varied in their presidential voting rates, but ballots that did not record a vote for president accounted for 1.5% of the total national vote in 2016 and 1.1% in 2020.[1] Therefore, we sought total votes cast by county as our numerator for turnout. The closest approximation of a dataset of county-level total votes is the Election Assistance Commission's biannual Election Administration and Voting Survey (EAVS).[2] First conducted in 2004 as part of Congress's Help America Vote Act (HAVA), an attempt to improve elections administration after the contested results of the 2000 presidential election, EAVS polls all county elections administrators on data related to voter registration, vote methods, and election statistics.[3] Included in the 2020 EAVS dataset is a report of total votes cast by county for all states and territories.

We analyzed how county, state, and EAVS data varied to determine which was the most accurate.[4] As the EAVS is a survey, the numbers are as reliable as the responses given by state and county officials. By and large, EAVS was more accurate for total votes cast in counties, as certain states only officially report out total votes for particular races. For example, Virginia only officially reports the total votes cast in the presidential election, but reports the total votes cast in the election on the EAVS. We could not verify Pennsylvania, Mississippi, and Kansas' county-level total votes cast, as these states do not report county-level vote statistics. To fill in the gaps for these states, we used vote counts from the elections data company Aristotle.[5] Their website provides counts of registered voters and ballots cast at a county level for all states. Aristotle's voter registration counts also allow the option to leave in voters who may have left the rolls since the 2020 general election, to ensure a complete vote count. In later comparing these numbers to

the 2020 EAVS, they proved to be quite accurate and within a narrow margin for each county. In certain cases, EAVS county data was missing or clearly inaccurate, and where state and county data was not available the Aristotle data allow us to fill these in. The final dataset of total votes cast by county shows a slightly higher national total than EAVS or the US Elections Project, but we believe it to be more accurate (see table 1). Like the state-level trend, counties experienced an average increase of 6% in turnout between 2016 and 2020, and only 4% of counties experienced a drop in turnout (see fig. 1).

Table 1: Comparing 2020 County-Level Total Votes

	2020 Total US Votes Cast	**Difference from US Elections Project**
EAVS	159,947,379	+ 0.13%
Authors' dataset	160,135,747	+ 0.25%
US Elections Project	159,738,337*	N/A

* Estimated.

Source: Compiled from Election Administration and Voting Survey (EAVS), Secretaries of State and State Elections Administrations, and United States Elections Project (http://www.electproject.org).

Constructing County-Level Eligible Voters

There are different turnout denominators that vary widely in their definitions of the total population of voters. Counties and states report turnout using registered voters as their denominator, which introduces many distortions and inaccuracies into turnout. States and counties vary widely in their processes for maintaining current voter rolls. All states are required to comply with the National Voter Registration Act of 1993 (NVRA), which sets national standards for purging or "caging" voter rolls to remove inactive or ineligible voters. States may determine voters to be "active" or "inactive" based on the frequency of their voting, and can only remove inactive registrants for specific reasons defined in the NVRA. Despite these laws, states vary in their interpretation of this process and how fastidiously they purge inactive voters from their rolls.[6] Consequently, there is a great deal of variance between states in the number of total voters removed each election. The US Elections Assistance Commission reported that in 2016 Indiana removed the highest percentage at 22.4% of its registered voters, whereas New Mexico removed only 0.2%.[7] In 2020, Indiana remained the highest at 22.1% and Idaho was the lowest at 2%.[8]

Other problems with using registered voters as a turnout denominator relate to variations in how states register voters. For example, North Dakota has no voter registration requirement;

voters are only required to provide proof of residency when voting. Wyoming, which has same-day voter registration, does not count same-day registrants who voted provisionally and later provided proof of eligibility as being registered on election day. Therefore, some Wyoming counties are officially reported as having more than 100% turnout.[9] Lastly, using registered voters as a turnout denominator will not account for differential registration bias.[10] This bias occurs if interest in an election drives increases in both turnout and new registrations. An increased number of previously eligible but unregistered voters choosing to register and vote in an election year dilutes the turnout statistic. Instead of new registrations demonstrating increased voter interest, it actually diminishes the appearance of voter participation in the turnout statistic. For example, if 20% of the total turnout in a given election consisted of new registrants, this would drive down turnout by 12.5%.

The US Census offers a more accurate alternative in voting age population (VAP), which simply excludes all people under 18 years of age. However, this denominator has its own distortion in diluting turnout in states that have higher populations of non-citizens. For example, California's 2020 VAP includes 15% non-citizens and Texas' includes 12.6% non-citizens. A better alternative is the US Census' estimation of citizen voting age population (CVAP), which excluded non-citizens. This estimate is calculated from the Census' annual American Community Survey (ACS), which introduces its own interpretive challenges. The most accurate denominator would represent the total population of a county that was eligible to vote on election day. Michael McDonald, a professor at the University of Florida, has helped to popularize using voting eligible population (VEP) as the most accurate turnout denominator. To arrive at the actual total population of voters eligible to vote in an election, McDonald uses US Census estimates of voting age population and subtracts non-citizens and estimates people ineligible to vote under their respective state laws.[11] He posts estimates of state-level VEP on his US Elections Project website for federal elections since 2000, which are widely used by journalists and academics to calculate state-level and national turnout. While this would be the preferred denominator for county-level turnout, McDonald's methods for calculating state-level VEP are not adaptable for the county-level. In order to estimate it at the county-level we would need data for both non-citizen populations and ineligible felon populations. We do not yet have a source for county-level data on ineligible felon populations, which vary based on state laws.[12] The national average for ineligible felons as a percentage of VAP is 1.1%, with Georgia the highest at 4%. However, given the very low propensity of felons to vote, we believe not excluding ineligible felons does not meaningfully distort turnout.[13] Therefore, the next best alternative is county-level CVAP, which is estimated from the Census' American Community Survey (ACS).[14] Another advantage of the ACS is it allows us to include county-level controls such as age, race, income, and education.

There are two main challenges with using the ACS data. First, the Census does not collect enough samples to provide reliable 1-year estimates for geographic areas less than a population of 65,000, which would exclude 74% of counties in 2020. To mitigate this problem, we used the ACS's 5-year estimates, which have estimates for geographic areas of less than 65,000. However, whereas the decennial census is a record of the population at one point in time, the 5-year ACS is estimated from an aggregation of 1-year samples. For example, the 5-year ACS for 2020 does not mean it is an estimate of the population in 2020, but rather an estimate based on an aggregation of five one-year samples between 2016 to 2020.[15] Due to the above

limitations, the 2020 ACS 5-year estimate of VAP is 1.96% smaller than the 2020 decennial census. We believe CVAP to be the only means of excluding non-citizens from the denominator and including county-level demographic controls, and therefore is the best option for creating a turnout statistic and analyzing its relationship to vote access. Therefore, while imperfect, we selected CVAP as the most accurate county-level denominator for turnout available.

Access and Turnout Model

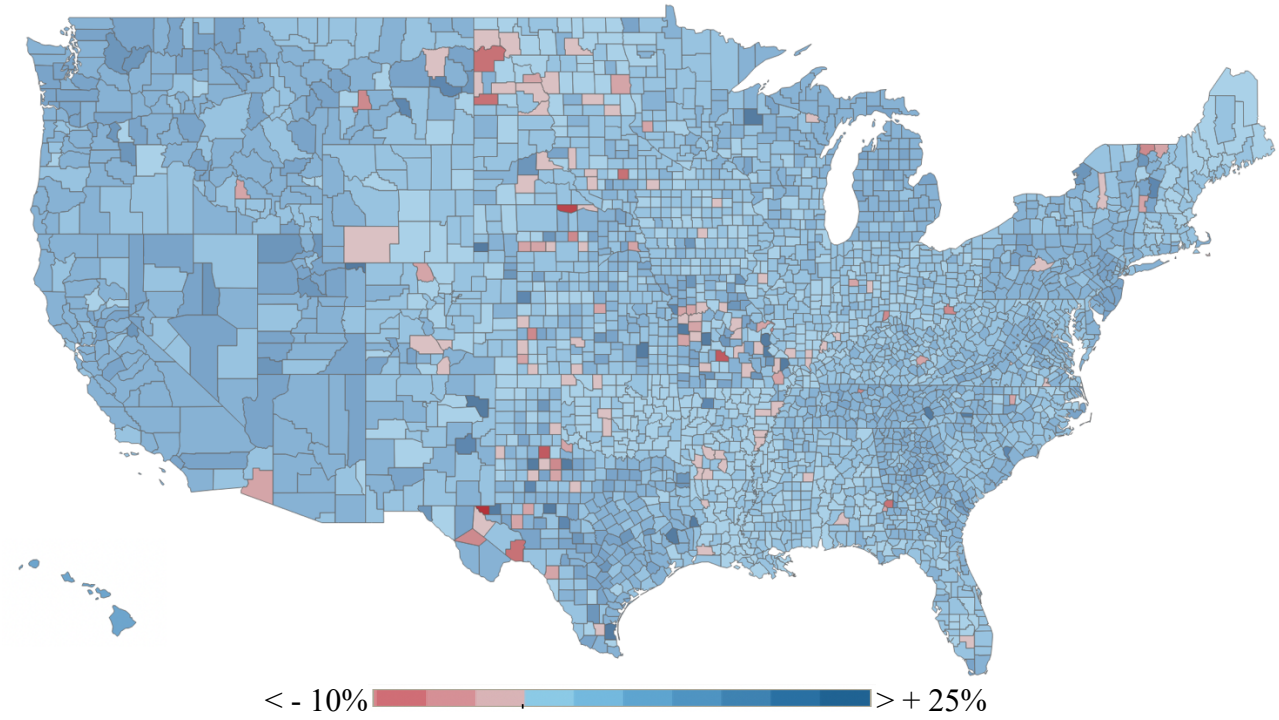
With a complete dataset of county-level turnout we then moved on to operationalize a measure of changes to vote access in the 2020 election. States' election administration changes due to the COVID-19 pandemic varied considerably. In analyzing which factors were most closely associated with changes to vote access, partisanship is the most dominant.[16] Pre-pandemic, a handful of states had laws that defined authority and powers for access changes during an election emergency, but these had little relation to changes made to vote access. A few states had universal vote-by-mail (VBM), which left them with little need to alter the conduct of their elections during a pandemic. Overall, partisanship was most highly correlated with a state's degree of vote access change, with Democrat-controlled states tending to make the most changes. Partisanship, as measured by 2020 partisan voter index (PVI), and changes to access in 2020 have a highly significant correlation coefficient of 0.416.

There were a variety of means by which states attempted to expand access in response to the COVID-19 pandemic. We organized these measures into five categories: vote-by-mail, completing mail-in ballots, COVID-19 safety adjustments, drop boxes, and registration extensions (see table 2). We weighted each of the policy changes within each of these categories by assigning them a score relative to their likelihood to increase voting access.[17] One access change—reducing the number of polling places—we assigned a negative score to reflect a diminution of access. Using this framework and aggregating access scores, state vote access ranged between -1 in Indiana to 16 in New Jersey, with a mean score of 5.5.

Results and Discussion

We cannot distinguish the relative effects of most individual changes states made to access, as most states undertook a variety of interventions. However, we believe the sum of these access measures equates with the degree to which states altered vote access for the 2020 election. To test this hypothesis, we built a turnout model that includes state access changes and various demographic controls to see if there was a relationship between our measure of vote access and turnout (see fig. 4). In our results, a one-point increase in vote access score is associated with a 0.3% increase in turnout (see table 3 and fig. 3). For example, in a state with a near-median access score of 6, such as Pennsylvania, this equates to a 1.8% increase in turnout (see fig. 2). Interestingly, despite the fact that Democratic-controlled states tended to make more changes to vote access in 2020, there was not a significant relationship between voting for Democratic candidates for president and turnout at the county level.

Figure 1: Percentage difference in County-Level Turnout Between 2020 and 2016 Elections



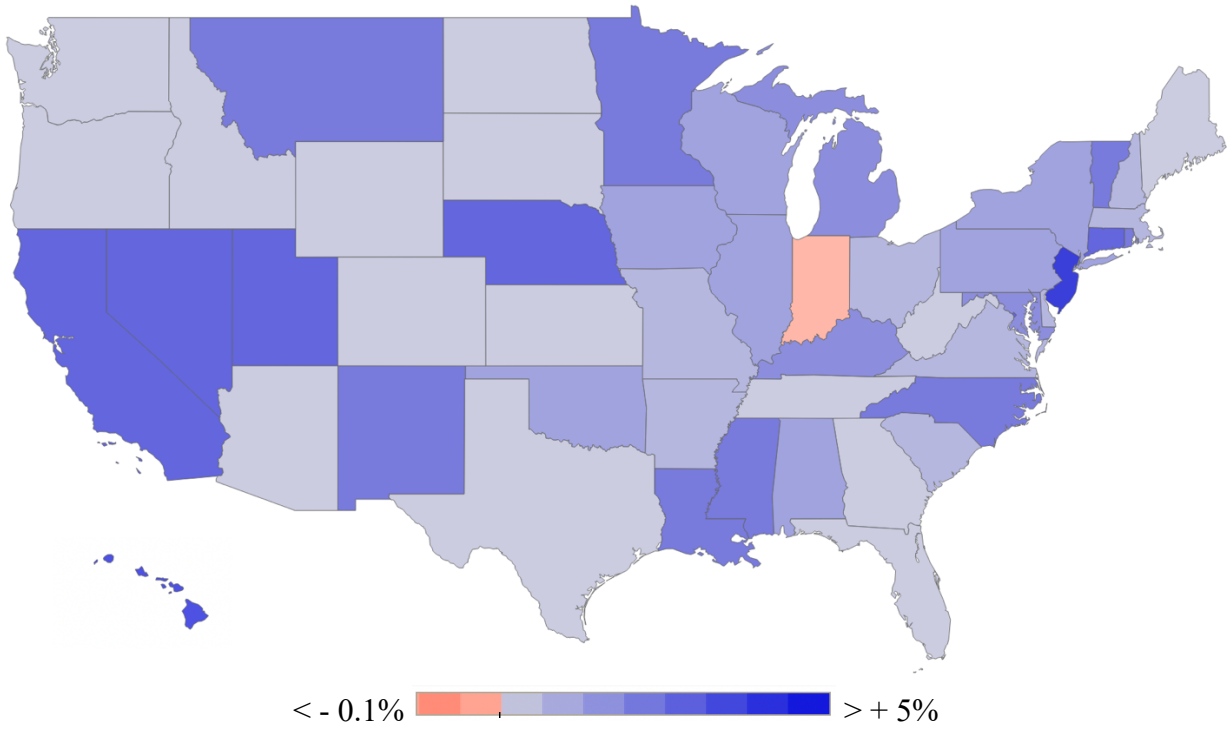
Source: Compiled from state and county elections authorities; 2020 and 2016 Election Administration and Voting Surveys; and the 2016 and 2020 US Census 5-year American Community Surveys.

Note: Turnout statistic calculated from the reported total ballots cast and the citizen voting age population (CVAP). Alaska reports votes by state house district, and so is excluded from a county-level turnout map.

Table 2: State-Level Vote Access Changes That Took Effect in 2020

Vote Access Categories and Changes	States Adopted	Access Scoring
Vote By Mail		
Voters automatically received a mail-in ballot	10	10
All registered voters received an absentee application	8	4
No excuse required for an absentee ballot	4	3
COVID-19 concerns were permitted as an excuse for an absentee ballot	9	2
Completing a Mail Ballot		
Ballot does not require a witness signature	6	2
Ballot is accepted if postmarked by election day and received more that 5 days from election day	3	3
Ballot is accepted if postmarked by election day and received within 5 days from election day	1	2
COVID-19 Polling Places Safety Adjustments		
Social distancing is enforced	24	1
Masks required for poll workers	17	1
Masks required for voters	6	1
Public surfaces are sanitized	13	1
PPE made available	3	1
Polling place locations increased	1	3
Polling place locations decreased	8	-1
Polling place locations moved	5	1
Drop Boxes		
Drop boxes instituted	4	4
Drop boxes expanded	5	2
Deadline Extensions		
Extended registration deadline with at least a month's notice	2	1
Extended ballot submission deadline with at least a month's notice	2	4

Figure 2: Estimated Effect of State-Level Vote Access Changes on County-Level Turnout, 2020



Source: Compiled from state and county elections authorities; 2020 and 2016 Election Administration and Voting Surveys; the 2016 and 2020 US Census 5-year American Community Surveys; and "Changes to election dates, procedures, and administration in response to the coronavirus (COVID-19) pandemic, 2020," Balletopedia.com.

Note: Turnout statistic calculated from the reported total ballots cast and the citizen voting age population (CVAP).

Table 3: Model of County-Level Turnout in 2020 General Election

Variable	Estimate
Constant	0.308*** (0.042)
State-Level Voting Access Score (per point)	0.003*** (0.001)
County % 2016 Vote for Democrat	0.047 (0.037)
County % Over Age 65	0.007*** (5.8E-04)
County % Poverty	- 0.003*** (8.8E-04)
County % Hispanic	- 0.0009*** (2.3E-04)
County % Black	< - 0.00008 (3.7E-04)
County % Asian	- 0.0058*** (8.3E-04)
County % Bachelor's Degree or More	0.0037*** (7.1E-04)
Average County Household Income (per $10K)	0.0218*** (.0043)
County 2020 Citizen Voting Age Population	< - 0.0001 (9.6E-09)

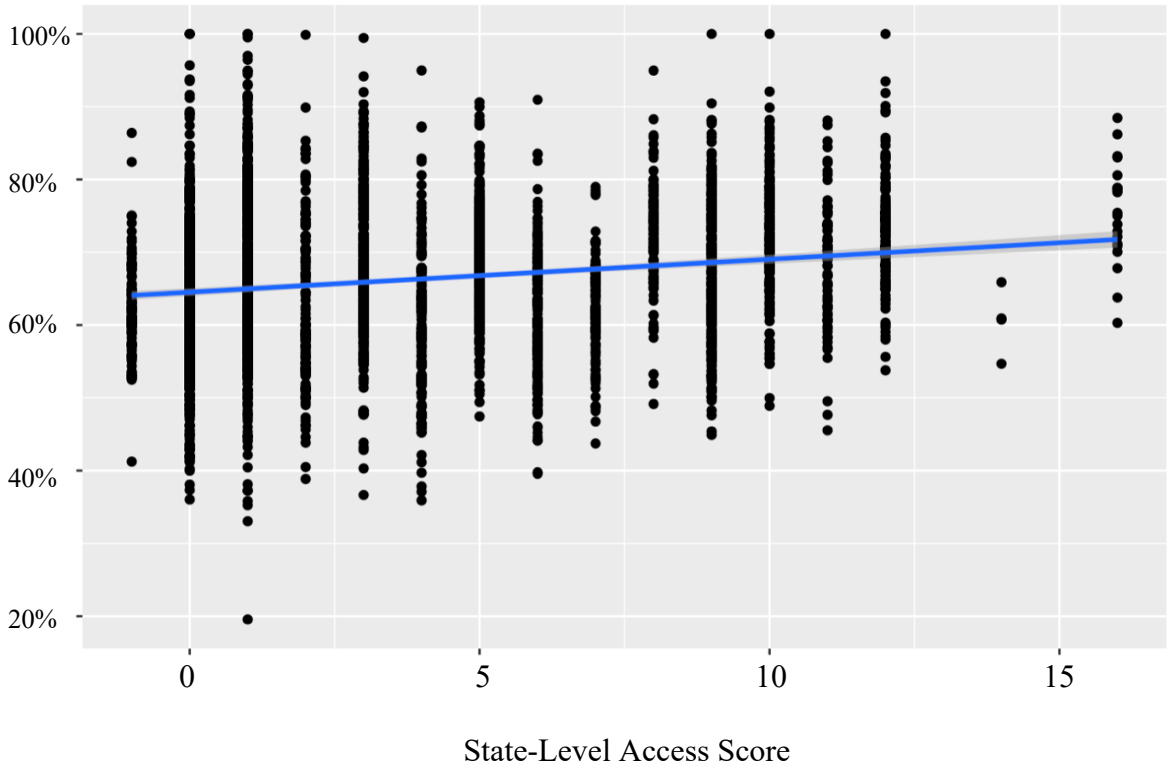
Observations: 3,152

Clustered standard errors.

Adjusted r-squared: 0.5533
F-statistic: 132.7 on 10 and 50 degrees of freedom, p-value: < 2.2e-16

Significance: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Figure 3: County-Level Turnout Clustered by State Vote Access Score in the 2020 Election



Source: Compiled from state and county elections authorities; 2020 and 2016 Election Administration and Voting Surveys; the 2016 and 2020 US Census 5-year American Community Surveys; and "Changes to election dates, procedures, and administration in response to the coronavirus (COVID-19) pandemic, 2020," Balletopedia.com.

Note: Turnout statistic calculated from the reported total ballots cast and the citizen voting age population (CVAP).

Figure 4: Multiple OLS Regression Model of Turnout and Access in the 2020 Election

To estimate the effect of state-level vote access changes on county-level turnout in the 2020 elections, we used the following turnout model:

$$T_{cs} = \beta_0 + \beta_1 A_s + \beta_2 R_{acs} + \beta_3 R_{bcs} + \beta_4 Eth_{hcs}$$
$$+\beta_5 Pov_{cs} + \beta_6 Inc_{cs} + \beta_7 Ed_{cs} + \beta_7 Sen_{cs} + \beta_7 Dem_{cs} + \epsilon$$

where T_{cs} is the 2020 turnout T in county c in state s, and A_s is the change in vote access that took effect in 2020. For partisanship, Dem_{cs} is the percent vote for the Democratic candidate for president in 2016. For demographic controls we used the percentages of the county-level citizen voting age population (CVAP) from the 5-year 2020 US Census American Community Survey. For race and ethnicity R_{acs} is the percent Asian population, R_{bcs} is the percent Black population, and Eth_{hcs} is the percent Hispanic population. For income Pov_{cs} is the percent of households at or below the poverty level, and Inc_{cs} is the median household income in dollars. For education, Ed_{cs} is the percentage of those who have obtained a Bachelor's degree or higher. For senior voters Sen_{cs} is the percentage of those 65 years of age or older. Lastly, Pop_{cs} is the citizen voting age population.

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ABOUT THE POLICY LAB

Based at Claremont McKenna College, the Policy Lab is a unique policy research and undergraduate teaching program that combines political science, economics, and practical application through a diverse array of policy research projects with real-world partners. We produce professional academic policy research in areas of vital public interest, such as government reform and civil justice. Our research partners include the Brookings Institution, the American Enterprise Institute, the Bipartisan Policy Center, the RAND Corporation, and others.

Working closely with our faculty, staff and external partners, Policy Lab students learn and apply essential skills for policy writing, analysis and creation, and contribute to professional policy research. Our students gain a firm foundation in how public policy is made in the United States, to prepare them for work in legislatures, think tanks, non-governmental organizations, or to pursue graduate education.

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Zachary Courser is co-director of CMC's Policy Lab and a visiting assistant professor of government at Claremont McKenna College. His research agenda focuses on government reform, Congress, and populism. He co-authored a report for the American Enterprise Institute on the need for reinstating congressional earmarking entitled "Restoring the power of the purse: Earmarks and re-empowering legislators to deliver local benefits" (AEI, 2021), and is a contributor and editor of the volume Parchment Barriers: Political Polarization and the Limits of Constitutional Order (University Press of Kansas, 2018), the result of a year-long, multi-disciplinary research project examining the dynamics of polarization through an examination of conflicts over the American constitutional order. He is currently leading a project with the Policy Lab Co-Director Eric Helland, in partnership with AEI, on how vote access influenced turnout in the 2020 election. He has experience working in Washington, DC, both on Capitol Hill and as the interim director of Claremont McKenna College's Washington Program. Before coming to CMC, he served as the Program Director and Fellow for a London-based think tank, and has taught at Washington and Lee University, Boston College, and Science Po Lyon.

ENDNOTES

[1] Calculated from the 2020 US Elections Project Election Administration and Voting Survey (EAVS), Secretaries of State and State Elections Administrations, and United States Elections Project.

[2] "Election Administration and Voting Survey (EAVS) Datasets, Codebooks, and Survey Instruments," US Elections Assistance Commission.

[3] "EAVS FAQs," US Elections Assistance Commission.

[4] Alaska only reports its vote totals by state house district, not by county. Our analysis of Alaska is therefore by state legislative district, not county.

[5] https://vlo2.voterlistsonline.com/user/logon.aspx

[6] The Supreme Court issued a 5 - 4 decision in *Husted v. A. Philip Randolph Institute,* 584 US __ (2018), affirming Ohio's procedure for removal as compliant with the NVRA. For more information see L. Paige Whitaker, "Supreme Court Rules Ohio Voter Roll Law Comports with National Voter Registration Act," Congressional Research Service, July 24, 2018.

[7] "The Elections Administration and Voting Survey, 2016 Comprehensive Report," US Elections Assistance Commission, p. 47.

[8] "Election Administration and Voting Survey (EAVS) Datasets, Codebooks, and Survey Instruments," US Elections Assistance Commission.

[9] "Voter turnout explained: Sheridan County sees more than 100% turnout. How?" *The Sheridan Press,* Dec. 5, 2020.

[10] Brendan Nyhan, et al, "Differential Registration Bias in Voter File Data: A Sensitivity Analysis Approach," *American Journal of Political Science*, vol. 61, no. 3, (July 2017), 744–760.

[11] Michael McDonald, "Overview of how the voting-eligible population (VEP) is constructed," US Elections Project.

[12] "Felon Voting Rights," National Conference of State Legislatures, June 28, 2021.

[13] Tilman Klumpp, et al, "The voting rights of ex-felons and election outcomes in the United States," *International Review of Law and Economics*, vol. 59 (2019), 40-56.

[14] As a matter of policy, the US Census does not ask about citizenship status during the decennial census, so the ACS survey is the only available county-level measure of CVAP.

[15] "Understanding and Using ACS Single- Year and Multiyear Estimates" in *Understanding and Using American Community Survey Data: What All Data Users Need to Know,* US Census Bureau, September 2020.

[16] Zachary Courser and Eric Helland, "State Election Emergencies Modifications During the 2020 General Election," working paper, Claremont McKenna College Policy Lab, May 2021.

[17] While creating these scores necessarily relies on estimation, we did rely as much as possible on scholarly research on the relative effects of vote access on turnout for policies like vote-by-mail, absentee and registration requirements, and others. See Thompson, Wu, Yoder, and Hall, "Universal vote-by mail has no impact on partisan turnout or vote share," *Proceedings of the National Academy of Sciences*, vol. 117, no. 25 (2020); Yoder, Handan-Nader, Meyers, Nowacki, Thompson, Wu, Yorgason, and Hall, "How did absentee voting affect the 2020 U.S. election?" *Science Advances,* vol. 7, iss. 52 (2021); Cantoni and Pons "Strict ID Laws Don't Stop Voters: Evidence from a U.S. Nationwide Panel, 2008–2018," *Quarterly Journal of Economics*, vol. 136, iss. 4 (2021); Karp and Banducci, "Absentee Voting, Mobilization, and Participation," *American Politics Research*, vol. 29, iss. 2 (2001); Brians and Grofman, "When registration barriers fall, who votes? An empirical test of a rational choice model," *Public Choice*, vol. 99, no. 1 (1999).