

# The Impact of Voter Education on Voter Confidence: Evidence from the 2020 U.S. Presidential Election

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## Abstract

In this paper, we assess whether voters who live in states where state election officials (EOs) invested in voter education have higher levels of confidence in vote counting. We argue voter education bolsters confidence by improving voter experiences and enhancing election transparency. Drawing from various election administration data sources measuring state election official investment in voter education during the 2020 U.S. Presidential election, we find that where EOs devoted more resources to communicating with voters, voters were more confident in vote counts at the individual, local, state level and national level. Importantly, voters otherwise predisposed to question ballot counting living in these states - those highly skeptical about election integrity and who supported then-president Donald Trump in his reelection bid - also demonstrated greater confidence than their counterparts in states where EOs were less active in voter education. Our study is the first to establish a positive relationship between voter education and voter confidence. However, our findings also underscore the pervasive effects of partisanship and national narratives about stolen elections.

**Keywords:** voter education, voter confidence, social media, U.S. elections

Confidence in election outcomes are a critical component of a well functioning democracy. Trust in the process by which the public consents to be governed enhances confidence in other institutions of democratic governance and individuals' relationship to the political system (Rahn, Brehm and Carlson 1999; Price and Romantan 2004). If the public does not have confidence in the legitimacy of the process by which they elect their representatives, this threatens the foundation of a republican government (Atkeson, Alvarez and Hall 2015).

Voter confidence in elections hinges on how citizens interact with and experience the electoral system. These include the selection of winning or losing candidates (Sances and Stewart III 2015) and experiences while casting a ballot (Atkeson and Saunders 2007; Hall, Monson and Patterson 2009). However, there are no studies that consider whether voter confidence is reinforced through voter education from official election sources. This is a significant omission given the pivotal role election officials play as the most direct arbiters of American democracy and official sources of election information. Given the extent to which misinformation has disrupted the election information ecosystem, it is necessary to evaluate whether voter education can inoculate voters against declining confidence in the ballot counting process in the United States.

In this paper, we evaluate the relationship between voter education by state election officials (EOs) and voter confidence. Drawing from the 2020 Survey of the Performance of American Elections (SPAEE), we use four measures of voter confidence - that votes cast in the 2020 U.S. Presidential election were counted as intended at the personal, local, state and national level. We merge these individual-level data with a novel dataset of state EOs' voter education and outreach efforts that contains six measures of EO investment in voter education: social media activity on the state's official Facebook page between September 1 and November 3, 2020, whether a state pledged to promote the EO as a trusted source of election information through the #TrustedInfo2020 challenge, the proportion of federal funds states received from the CARES Act that were allocated for voter communications, the proportion of CARES Act funds states matched and allocated for voter communications, the proportion of jurisdictions in each state that received additional funding to run elections in 2020 through the Center for Teach and Civic Life's (CTCL) COVID-19 grants, and whether the state received a voter education grant from the Center of Election Innovation and Research (CEIR).

Empirically, we examine whether voters living in states where EOs devoted greater resources to voter communication through federal, state and private funding, and social media

engagement during the 2020 presidential election cycle have more confidence their own ballots were counted as intended, as well as ballots cast at the county, state, and national level, than voters living in states where EOs are less actively engaged in voter education. We also examine whether these efforts moderate the negative impact of previously established factors known to influence confidence: the "winner-loser effect" and beliefs about election and voter fraud (Sances and Stewart III 2015; Levy 2021).

Theoretically, we argue EOs who devote greater resources to educate voters and create transparency around election processes may have an electorate that is more confident in vote counting. We propose two key mechanisms through which this occurs. One, educating voters about how to vote streamlines the voting process and makes it easier for voters to cast a ballot that is counted (Merivaki and Suttmann-Lea 2022; Suttmann-Lea and Merivaki 2022). Given that positive voting experiences are related to higher voter confidence (Hall, Monson and Patterson 2009; Atkeson and Saunders 2007), we expect more robust voter education efforts will similarly translate into positive experiences that in turn boost confidence in vote accuracy. Second, we argue voter education about how to vote and other elements of election administration creates greater transparency about the electoral process more broadly. This cultivates an election ecosystem where voters are more likely to be exposed to information from official election sources, getting inoculated against characteristics that might predispose them to have less confidence or broader narratives about election misconduct (Kim and Lee 2012; Heufner, Tokaji and Foley 2007; Maholtra, Michelson and Valenzuela 2012).

We find there are distinct effects of voter education across measures and levels of confidence. Social media engagement by state EOs, when controlling for other voter education efforts, increases the likelihood voters are confident their own vote counted as intended, as well as votes in their county/city and state. We also find other state-level commitments to voter education, measured by the proportion of jurisdictions that received a CTCL COVID-19 grant, positively affected vote confidence at the state level. These effects mitigate some of the negative impact of exaggerated views about voter fraud, such as the belief that election officials change votes, as well as the loser effect among voters who voted for Trump in 2016.

Surprisingly, state funding through CEIR's voter education grants negatively impacted confidence in vote counting at the individual, county, and state level, but had a positive influence on confidence in vote counting across the country. State use of federal funds for voter education communications also had a negative effect on voter confidence in vote counting at the state

level. In our discussion, we address the limitations of these measurements, suggesting that greater nuance in how funds were used for voter education may offer a more precise picture of the impact of these funds as a measure of voter education.

Our most observable measure of voter education efforts by state EOs through their Facebook pages suggest a promising relationship between voter education and confidence in vote counting at multiple levels. Moreover, the impact of CTCL funds, which were used at the local level, highlight the important role that local efforts to inform voters may play in cultivating trust. Our research is the first to establish an empirical relationship between voter education and voter confidence. Our evidence suggests voter education from election officials can mitigate the deleterious effects of election denial rhetoric. Importantly, we do not suggest it necessarily *changes* voters' perceptions, but rather that it serves as a sort of vaccine against the factors that commonly dictate lower confidence, such as selecting a losing candidate, and the more pernicious elements of misinformation circulating in the election information ecosystem.

## Existing Research: Which Factors Shape Voter Confidence?

Voter confidence in election outcomes is linked to how citizens experience the electoral system. These experiences include selecting candidates who win or lose elections, voter experiences during the actual process of voting, and vote mode. Individuals who select winning candidates are more likely to have confidence in vote counting, and vice versa for individuals selecting losing candidates (Sances and Stewart III 2015). Cognitive biases generated by strongly held political identities or candidate preference can motivate individuals who select losing candidates to find an alternative narrative to support the selection of a losing candidate (Sances and Stewart III 2015). Specifically, loyalties to a candidate or a party can have such a strong effect on perceptions; election outcomes challenging these beliefs create the need to generate a narrative that comports with established loyalties and identifications (Bartels 2002; Bolsen, Druckman and Cook 2014) <sup>1</sup>.

The winner-loser effect persists even in voters with low levels of confidence *prior* to the

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<sup>1</sup>Research on the neural components of political beliefs shows that strong partisans whose beliefs were challenged on political issues had greater activity in the part of the brain associated with self-representation and disengagement from the external world. This comports with the theory that the cognitive dissonance associated with selecting a losing candidate threatens identity and motivates individuals to find alternative narratives to those presented in election outcomes (Kaplan, Gimbel and Harris 2016)

election. This was the case with Trump voters during the 2016 presidential election, when then-candidate Donald Trump suggested the election would be "rigged" if he did not win and raised questions about whether he would accept the outcome if he lost the election. However, even in the face of supporting a candidate who persistently cast doubts over the legitimacy of the electoral process, Trump supporters' confidence in the outcome of the election increased significantly from their pre-election perspective when the race was called in their candidate's favor. These effects were moderated, however, by political sophistication, with more informed Trump supporters showing a greater shift in their post-election confidence levels than less informed Trump supporters (Sinclair, Smith and Tucker 2018).

Of course, the scenario that played out during the 2016 election - a pre-election period where one major party candidate cast active doubts about the legitimacy of the election process who nevertheless won - was precisely the opposite of what occurred during the 2020 election. In 2020, then-president Donald Trump made consistently false claims about the potential for fraud and ballot manipulation in the months leading up to the election and went on to lose the election. This further dampened his supporters' confidence in the outcome of the election (Persily and Stewart III 2021). Rhetoric from the major party candidates during the 2016 and 2020 election are a powerful reminder that elite cues shape public confidence in election processes; during the 2016 election cues from the Clinton campaign about the integrity of the electoral process boosted her supporters' confidence and depressed Trump supporters' confidence during pre-election periods (Sinclair, Smith and Tucker 2018). While the winner's effect was enough to help Trump voters reverse their pre-election lack of confidence in the electoral process during the 2016, the same was not the case during the 2020 election.

Donald Trump's claims of a rigged election in 2020 were especially concerning given they centered around another important factor shaping voter confidence: perceptions of and experiences with election administration. Perceived problems in election administration, especially if these problems are highly advertised, exaggerated, or outright false, negatively affect voter confidence (Hale, Montjoy and Brown 2015; Berlinski et al. 2021). Voters who experience problems when casting a ballot are more likely to have questions about whether their vote was counted as intended. These may include having to wait in long lines, having one's registration status challenged and being asked to cast a provisional ballot, or casting a mail ballot that is rejected and has to go through the cure process (Atkeson and Saunders 2007; Hall, Monson and Patterson 2009).

Even absent perceived or actual problems during the voting process, different factors that shape the transparency of the vote process also influence voter confidence. Modes of voting where the processing of the ballot itself is less visible such as with electronic ballot technologies and mail voting tend to yield lower levels of voter confidence that one's ballot was counted as intended (Alvarez, Hall and Llewellyn 2008), although these attitudes are moderated by other election day voting experiences (Claasen et al. 2013). Mail voters in particular, because they do not witness the tabulation of their ballot and there is more time between the marking and counting of the ballot, are more susceptible to concerns that their vote was not counted as intended (Atkeson and Saunders 2007; Gronke 2014; Bryant 2020), although recent evidence suggests these effects may be limited to one election cycle (Clark 2021)

Finally, measures of voter confidence depend on the level of vote counting voters are being asked to consider. Established measures are constructed from survey questions that gauge respondents' perceptions of whether votes were counted as intended across a range of outcomes: "your vote," "votes in your county," votes in your state," and "votes in the nation." Individuals are more likely to believe their individual vote and votes cast "closer to home" were counted as intended. The further removed evaluations get from the individual, respondents are less confident in vote counting (Atkeson, Alvarez and Hall 2015). An explanation for this pattern is that people tend to have greater trust in local institutions over those that are more remote or further removed from them (Sances and Stewart III 2015; Mutz and Flemming 1999).

Additionally, patterns of confidence in vote counting across different levels of counting are more pronounced among individuals predisposed to question the electoral process. Evidence from 2020 election show the largest decrease in vote confidence before and after the election was among voters who supported Trump. These voters believed exaggerated claims about voter fraud - double voting, voter impersonation, vote stealing, non-citizens voting, vote tallies changed - and expressed the lowest confidence that votes nationwide were counted as intended.<sup>2</sup> This illustrates how pernicious election denial can be and that is may be difficult to overcome given the multiple reports from academics, election reporters, federal agencies, and election officials themselves that the 2020 election was secure and accurate.

The decentralization of election administration in the United States means the overall voter

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<sup>2</sup>Bright Line Watch, "A Democratic Stress Test - The 2020 Election and Its Aftermath." Available at: <http://brightlinewatch.org/a-democratic-stress-test-the-2020-election-and-its-aftermathbright-line-watch-november-2020-survey/>.

experience will differ from state to state and even jurisdiction to jurisdiction with regard to voting technology, experiences with poll workers, and voters' general relationship with election administrators, creating different election ecosystems of voter experience (Heufner, Tokaji and Foley 2007). Ultimately, a combination of these factors and the broader political environment during a given election cycle will shape the confidence voters take away from the polls about the fairness of the election process (Claasen et al. 2013). Missing from this evidence is whether active efforts to educate and inform voters about how to vote and the process of elections plays a role in voter confidence in ballot counting and election outcomes.

## How Voter Education Shapes Voter Confidence

In this section, we develop our theoretical expectations for how voter education from EOs can improve overall confidence about vote accuracy, and inoculate voters against some of the factors that negatively impact it. Previous research suggests voter education has the potential to boost voter confidence by connecting voters more directly to election officials, but does not empirically test this assumption. For example, in their paper examining the local election administrative factors affecting confidence, Atkeson and Saunders (2007) argue that "voter education, through public service announcements, would assist in connecting voters to their [election official] and consequently increase vote turnout"(659). Similarly Alvarez, Hall and Llewellyn (2008) suggest the negative impact of new electronic voting technology on voter confidence may be ameliorated by election officials conducting "education campaigns focusing on the operation, security, and accuracy of the electronic precinct voting technologies"(762). These claims, however, have not been theoretically developed or directly tested using observed measures of voter education efforts by election officials.

Attitudes have both an affective component and an object component towards which an affect is aimed. Standard measures of voter confidence capture have "both a specific affective component (confidence) and a specific object component (whether a voter's vote) [or all votes] was [were] counted correctly)"(Atkeson, Alvarez and Hall 2015, p. 209). Selecting a losing candidate (Sances and Stewart III 2015), having negative voting experiences (Hall, Monson and Patterson 2009), or perceiving problems about election administration (Hale, Montjoy and Brown 2015) may activate a negative affect when asked about confidence in election outcomes.

We argue that voter education from EOs can improve overall confidence, and moderate

factors known to negatively impact voter confidence through a combination of creating more positive voter affect through their voting experiences and cultivating transparency about the process of administering elections. EOs are typically tasked with informing voters about various election processes - how to register to vote, how to request and return an absentee/mail ballot, how to find their polling location. They do this through various communication mediums, such as sending mailings to voters, placing ads in local newspapers, posting on social media, they increase the transparency of their office (Suttmann-Lea and Merivaki Forthcoming). Because of their position as official sources of election information, we suggest EOs are uniquely positioned to support voters most reticent to having confidence in election outcomes by creating a more transparent election ecosystem as a trusted source of election information.

First, we theorize voter education from EOs improves voter confidence because it creates a more streamlined experience for voters. Previous research on voter education and outreach from EOs demonstrates these activities influence voter behavior by lowering the costs of participation and making the voting process easier to understand and navigate (Merivaki and Suttmann-Lea 2022; Mann and Bryant 2020). Positive voting experiences, such as short lines at the polls, interacting with a helpful poll worker, and having one's mail ballot accepted, yield higher levels of voter confidence.

However, an important intermediary factor is voters' exposure to the needed information to navigate the voting process in the first place. Once they've determined they are eligible, for example, a voter has to register. To return a mail ballot and have it counted, a voter has to request it in time, complete it correctly and return it in time to be counted. To cast a vote in person, a voter has to bring any required documentation, otherwise they will have to vote provisionally. Given that physical polling locations can change, voters also need to know where their polling location is. Voters who are able to learn how to register, request, and cast a ballot without any issues like having their registration status questioned, being asked to cast a provisional ballot, or have their ballot questioned for mistakes if they are mail voters may be more apt to view the electoral process more favorably. This argument is bolstered by evidence that voter education from EOs through newspaper advertisements, outreach to community groups, and sharing registration information on social media increases the rates of successful registration (Merivaki and Suttmann-Lea 2022). Similarly, rates of mail ballot acceptance and voters' likelihood of casting a ballot by mail that is counted also increases where EOs are more active in promoting information about how to vote by mail (Merivaki and Suttmann-Lea 2021b;



[Suttman-Lea and Merivaki 2022](#)).

In short, evidence that information from EOs increases success in different aspects of the voting experience like registration and mail voting indicate there may be a pathway between voter education, positive voting experiences, and confidence in vote counting ([Suttman-Lea and Merivaki 2022](#); [Mann and Bryant 2020](#)). We argue that ensuring voters have the information needed to navigate the various steps of the voting process is an important factor that ultimately shapes voters' evaluations of the fairness of election outcomes because it increases the chances that they will have positive experiences when casting a ballot.

Information about navigating the actual steps of the voting process is a key component of voter education that can help lower costs and streamline the voting process, but many EOs are also engaged in educating voters about the general process of conducting elections. Content analysis of a sample of election officials from the 2020 presidential election show that many take to social media to share information about pre-election technology checks, audits, and the process of counting and certifying ballots ([Suttman-Lea and Merivaki Forthcoming](#)).

Combined, we suggest efforts to both educate voters about how to vote and the broader electoral process can build greater transparency about administering elections that also positively influence voter confidence. While experiences, perceptions, or elite cues that make the process of administering elections more confusing stand to heighten voter skepticism about the fairness of election outcomes, EOs may be able to cultivate an information ecosystem that can mitigate the impact of these factors by having a consistent presence as an official source of election information through their communications with voters.

One of the mechanisms that may facilitate transparency and in turn confidence, especially among those otherwise more likely to lack confidence in election outcomes is source credibility. Messages from official sources can influence public responses and voter behavior because of their perceived credibility ([Herberlein and Baumgartner 2015](#)). In general, individuals tend to place higher levels of trust in local institutions that are "closer to home" as opposed to those further removed from their every day lives ([Mutz and Flemming 1999](#)), a pattern reflected in public opinion data showing that people are more trusting of their local election officials than other elected officials ([Adona and Gronke 2018](#)).

Field experiments examining the impact of messaging from different sources on various aspects of voter behavior demonstrate state and local election officials enjoy high levels of source credibility among voters. For example, [Maholtra, Michelson and Valenzuela \(2012\)](#) show how

messages from voter registrars increase voter turnout among registered voters. [Herrnson et al. \(2015\)](#) examine the effectiveness of messages informing UOCAVA voters about new voting methods, finding that voters were more responsive to messages that seemed to come from official state sources. They argue "a clear, concise message that has source credibility" is a key part of effective messaging for reaching voters about new voting technologies (p. 150). And although they do not test for the effectiveness of different sources, [Mann and Bryant \(2020\)](#) find that low-cost mailers sent from official state election agencies can encourage eligible but unregistered voters to register and increase voter turnout.

An important contextual factor to consider for the 2020 Presidential election in regards to source credibility is the coordinated efforts by federal agencies, such as the Department of Homeland Security, the Cybersecurity and Infrastructure Security Agency and the U.S. Election Assistance Commission, the National Association of Secretaries of States, state election directors, and local EOs to send the message to voters that their state and local election officials are the most trusted sources for information.<sup>3</sup> Election officials were touted as the ones voters should look to for election related information. State EOs particularly showed broad commitment to clearly communicating to voters that they are the most credible source information, increasing access to voting by lowering the informational costs of voting, as well as assuring voters that elections are run safely and accurately. In 2020, at least 24 state EOs took the #TrustedInfo2020 pledge, which entailed incorporating the hashtag into all social media communications, as well as drawing from toolkits provided by the National Association of Secretaries of State for best communication practices.

## Hypotheses

Overall, in states where the state election official heavily invested in voter education in 2020, we expect voters will be more likely to have confidence in vote accuracy. Although we cannot directly measure or test the mechanisms through which voter education makes the process of voting easier and more transparent, we incorporate multiple measures of investments in communications to represent the broader ecosystem of voter education to capture a robust and dynamic picture of voter education efforts. Our underlying argument is that states with a more

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<sup>3</sup>National Association of Secretaries of State, #TrustedInfo2020. Available at: <https://www.nass.org/initiatives/trustedinfo>.

robust system of voter education will have voters that are, on average, more confident in the ballot counting process.

The measures we consider capture both the *priorities* states place on voter education as measured through funding investments, as well as the *consistency* with which they engage voters through an observed measure of actual voter education activity. First, we consider investments in voter education from federal, state, as well as private sources as a measure of the priority placed on voter education. States are not required to seek out additional funding for elections from the federal government, have wide latitude in how they implement federal-level requirements for voter education, and also vary in their state-level commitments to voter education (Merivaki and Suttman-Lea 2021a). Importantly, states have discretion on how to use funds allocated for voter education, making determinations on how to allocate funds for in-person or remote outreach, such as hosting community events (in-person) or sending direct mail to voters (remote), boosting their social media communications, and/or posting advertisements on TV or radio/(Merivaki and Suttman-Lea 2022). Our *first hypothesis* (**H1**) is that voters in states that dedicate a higher proportion of resources - federal, state and/or private - to communicate with voters will express more confidence in vote counting compared to voters in states dedicating lower proportions of resources to communications.

Information about the monetary resources devoted to voter education does not give us measures of actual voter education efforts. As such, we also consider an observed measure, specifically focusing on how consistently EOs communicate with voters about election processes. Given that more robust communications, especially engagement on social media, can have positive effects on other voter behaviors like registration, (Merivaki and Suttman-Lea 2022) and casting a mail ballot that counts (Suttman-Lea and Merivaki 2022), our *second hypothesis* (textbfH2) is that voters in states whose state EO more regularly communicates on social media with voters will be more likely to express confidence in vote accuracy compared to voters in states with state EOs engaged in less regular communication.

We also examine whether voter education can mitigate the impact of some of the known factors negatively influencing voter confidence, specifically focusing on the winner-loser effect (Sances and Stewart III 2015) and perceptions of voter fraud, such as vote stealing (Levy 2021; Enders et al. 2021). The winner effect can persist even in the face of supporting a candidate that sows doubt about the integrity of the electoral process, as was the case during the 2016 presidential election. However, this was not the case during the 2020 election when many

Republicans and Trump supporters experienced both the disappointment of an electoral loss and supporting a candidate who sowed doubt and spread falsehoods about the integrity of ballot counting.

We do not think voter education on its own can undo strongly held prior beliefs about issues with vote counting, especially given that the damage of exposure to false information about elections cannot be reversed by mere exposure to factual information ([Berlinski et al. 2021](#)). But states where EOs commit resources and efforts to ensure voters have the information needed to vote and to cultivate transparency about the electoral process may have information ecosystems that insulate voters otherwise more predisposed to have lower levels of confidence, inoculating them from the effects of these predispositions and election misinformation. Thus, our *third hypothesis* (**H3**) is that voters who usually express low voter confidence, such as those selecting losing candidates and those more likely to believe vote stealing is an issue, will express higher voter confidence if they live in states where there is a robust commitment to voter education than their counterparts in states with lower commitments to voter education.

One important nuance to these expectations is that we do not anticipate these likelihoods to remain consistent when voters are asked about confidence in ballot counting at different levels. Consistent with existing literature, and evidence from the 2020 election, we expect the impact of voter education on confidence to diminish when voters are asked to reflect on confidence in ballot counting more removed from their direct experience, in line with previous research demonstrating that voters are more confident in ballot counting "close to home" relative to those cast at state and especially national levels of elections ([Atkeson, Alvarez and Hall 2015](#); [Sances and Stewart III 2015](#)).

## Research Design and Data Description

We draw from the Survey of the Performance of American Elections (SPAE survey), as it is the only comprehensive survey of attitudes towards the administration of elections in the United States and it focuses on voters who were registered to vote when the survey was administered. SPAE includes a series of questions about trust in state and local EOs, attitudes about voter fraud, and measures attitudes about vote accuracy at four levels: personal vote accuracy, vote

accuracy at the local and state levels, and vote accuracy at the national level.<sup>4</sup>

We use four voter confidence measures as our dependent variables. We condense the four item responses - from very confident to not at all confident - into a binary measure, where 0 reflects no confidence and 1 reflects confidence. Our first dependent variable is confidence that a **voter's vote** was counted, our second is confidence that votes in the voter's **county or city** were counted as intended, our third is confidence that votes in the voter's **state** were counted as intended, and our fourth is confidence that votes **nationwide** were counted as intended.

In table 1, the pattern in 2020 confirms trends from previous elections. Voter confidence declines when moving away from the voter's evaluation of their personal vote being counted. Comparing personal voter confidence to nationwide confidence, the decline is the sharpest (-30.8%). This suggests any potential positive impact of local and state-level election administration and/or voter education factors dissipate and national factors, such as rhetoric about elections being stolen, or election processes not being secure, dominate.

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<sup>4</sup>Another benefit of the SPAE survey is that its state-by-state sample size is equal (N=200 per state), with battleground states being oversampled (N=1,000). Compared to other national surveys, this sampling strategy allows researchers to draw meaningful comparisons across the states and efficiently study subsamples of interest from all states, including those with traditionally low rates of inclusion in national surveys.

Table 1: Vote Confidence in SPAE 2020

	<b>My vote</b>	<b>My county/city</b>	<b>My state</b>	<b>Nationwide</b>
Confident	91%	86.27%	79.49%	60.24%
Not Confident	9.25%	13.73%	20.51%	39.76%

Measuring voter education is a challenging task considering there is no uniform definition of the activity, and no ongoing requirements for election officials to report their activities in a systematic way. According to the U.S. Election Assistance Commission (EAC), the purpose of voter education is to communicate with voters through different mediums about the voting process. These include maintaining an election website, using social media, sending mailers, posting advertisements in newspapers, TV and radio, and sharing press releases in local media. However, there is no centralized database of voter education efforts beyond states' broad commitments to educate voters after the passage of the Help America Vote Act of 2002 (Merivaki and Suttman-Lea 2021a). There are also significant limitations in accessing data on actual voter education activities implemented by state and local EOs, such as whether a state posts ads in newspapers, or whether a state utilized TV and Radio as part of its voter education campaigns in 2020. Tracking voter education efforts at the activity level for all states and localities is, therefore, not possible.

To overcome this methodological challenge, we operationalize voter education as a product of resource investment for communications and consistency in messaging. We measure this investment with six indicators: funds received through federal, state, and private funding, and activity of state EOs on social media. For federal funding, we utilize reports submitted by the states to the EAC outlining how they spent funds received through the Coronavirus Aid, Relief, and Economic Security Act (CARES) grant program. The CARES Act of 2020 allocated \$400 million in emergency funds to the states to "prevent, prepare for, and respond to the coronavirus for the 2020 federal election cycle."<sup>5</sup> States had discretion in how the funds were utilized, with many allocating resources for COVID-19 safety, such as personal protective equipment (PPE), protective barriers to separate voters and poll workers hand sanitizer, ballot marking pends, among others (Coll 2022). We use states' reports to track the proportion of

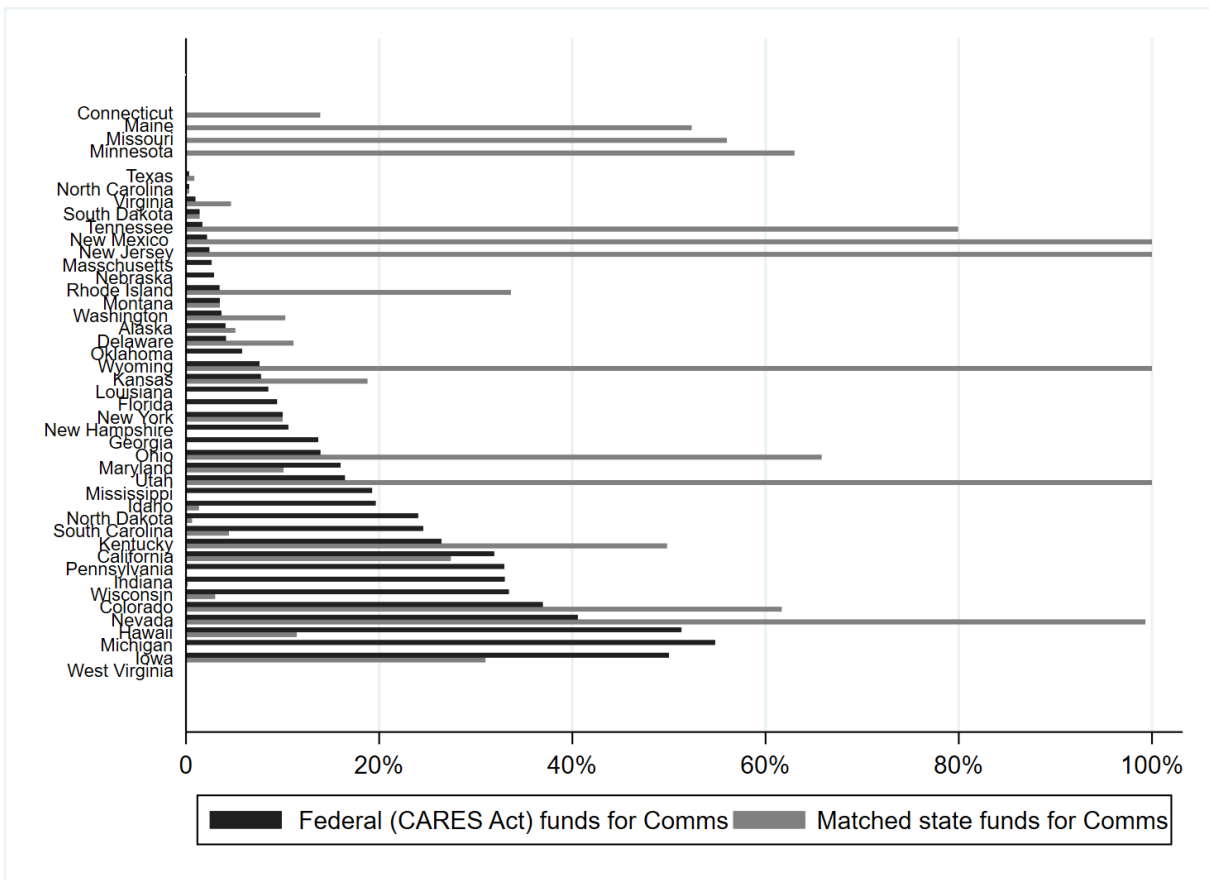
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<sup>5</sup>U.S. Election Assistance Commission, 2020 CARES Act Grants. Available at: <https://www.eac.gov/payments-and-grants/2020-cares-act-grants>.

funds allocated to communications, one of the cost categories included in the CARES Act financial reports.

The CARES Act also allowed for, but did not mandate, states to provide matching funds for any of the cost categories - voting processes, staffing, security and training, and communications. We measure the proportion of matched funds allocated to communications as a secondary measure of voter education, theorizing that additional funding for communications indicates a stronger investment for voter education in 2020. Whereas most states reporting matching CARES Act funds, not all states matched funds for communications specifically (Figure 1). Some states did not report an itemized breakdown of these funds, and some noted that the funds were sub-granted to localities, without further reporting on how the localities used the funds.

Figure 1: Investment in Voter Education Across the States, Allocation of 2020 CARES Act Grants to Communications, Federal and State matched funds



Not all states reported the specific uses of communications money in their CARES act

end of year reports, but a review of the qualitative responses in reports suggest this is one appropriate measure of a states' investment to voter education. In Georgia's report, for example, communication funds were used for "a voter education program to help voters understand how to request and return their absentee ballots." Others, like Colorado, mentioned money allocated for communications was used to "combat and prevent foreign misinformation and disinformation from misleading voters in Colorado." They also noted that they "engaged in disseminating accurate information regarding voting as well, monitoring and combating foreign misinformation and disinformation."<sup>6</sup> All states received CARES funds, except for Arizona, who reported not using any of the CARES Act funds because the state legislature never appropriated their use. The measure ranges from 0, which means the state reported allocating no federal funds for communications, to over 50% of the funds spent on communications.

State and localities were also eligible to apply for private funding in 2020. The most generous sources came through the Zuckenber foundation, which committed \$250 million to the Center for Tech and Civil Life (CTCL) and \$50 million to the Center for Election Innovation and Research (CEIR). Both are nonprofit, nonpartisan organizations whose core mission is to assist state and local election administrators to ensure that election are run in an equitable, safe and secure manner.<sup>7</sup>

CEIR administered \$50 million to state EOs exclusively for voter education, to "provide voters information about voting options, polling places and hours, and how to successfully cast their ballot during this year's general election."<sup>8</sup> This funding was available for state EOs to utilize on any mode of voter outreach. CEIR reported that states allocated funds on remote voter education and outreach, such as direct mail, postcards, traditional media, such as newspaper, TV and Radio ads, text messages and voter hotlines, and social media communications. A total of 22 states plus Washington D.C. received a CEIR grant in 2020. Unfortunately, a detailed breakdown of which voter education activities is not reported, and neither is the final grant amount for some states. Thus, we include a binary measure of whether or not a state received a CEIR Voter Education Grant in 2020.

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<sup>6</sup>Financial progress reports for CARES act recipients can be found here: <https://www.eac.gov/payments-and-grants/2020-cares-act-grants>."

<sup>7</sup>CTCL CEIR Press Release, September 1, 2020. Available at: <https://www.documentcloud.org/documents/7070695-CTCL-CEIR-Press-Release-9-1-20-FINAL.html>.

<sup>8</sup>CEIR 2020 Voter Education Grant Program: <https://electioninnovation.org/research/ceir-2020-voter-education-grant-program/>.



The CTCL administered over \$350 million to over 2,500 local jurisdictions, and local EOs used these funds for staffing, equipment, security and voter education/communications. The CTCL shared testimonies from local EOs who noted funds were explicitly used to build robust voter education campaigns.<sup>9</sup> Although CTCL grants were not exclusively used for voter education purposes and our emphasis is on the impact of state EO voter education efforts on voter confidence, we include it as a proxy for voter education commitments by local EOs, aggregated at the state level. The CTCL does not provide a detailed spending breakdown by category at the local level, and so we are unable to directly measure the financial investment of local EOs in each state on voter education.<sup>10</sup> For this reason, we measure the proportion of localities within each state that received a CTCL COVID-19 grant.

We argue the more localities receiving a CTCL grant in 2020 within each state represents an additional measure of commitment to voter education and possible exposure to information about the election process. Localities across 46 states received a CTCL grant in 2020, with as few as one county receiving the grant in a state (Lancaster county, Nebraska) to over 80% of local jurisdictions in others (Maryland, 80%; North Dakota, 81%, South Carolina, 93%). In select states, all local jurisdictions received funds (Alaska and Rhode Island).<sup>11</sup>

These measures capture efforts to increase the flow of information from EOs to voters through funding, but do not directly account for any observed voter education efforts. One systematic way to capture these efforts involves is through content shared by EOs on social media (Suttmann-Lea and Merivaki Forthcoming). The use of social media for voter education is strongly encouraged by federal agencies and state and local EOs, who incorporate social media into their broader voter education campaigns.<sup>12</sup> Evidence from Florida shows when local EOs informed voters about election processes, such as registering to vote and using online voter registration, the rates of successfully completed new registrations, and usage of online voter registration increased (Merivaki and Suttmann-Lea 2022). Moreover, this research finds voter education on social media is a robust measure of voter education, once accounting for

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<sup>9</sup>Center for Tech and Civic Life, "Election Officials Made Democracy Happen." Available at: <https://www.techandcivillife.org/wp-content/uploads/2021/11/Election-Officials-Made-Democracy-Happen-in-2020.pdf>.

<sup>10</sup>The CTCL does not report how many jurisdictions applied for a grant.

<sup>11</sup>COVID-19 Response Grants, available at: <https://www.techandcivillife.org/our-work/election-officials/grants/>.

<sup>12</sup>Elections Center White Paper. "Voter Education is changing with the times and that's good for democracy." Available at: <https://www.electioncenter.org/white-paper-voter-education-is-changing-with-the-times-and-thats-good-for-democracy.html>.

other modes of voter education, such as remote outreach (mailers), print media and TV and radio ads, which are also included in states' and localities' voter education toolbox.<sup>13</sup> Finally, nearly all states in our data have an official state Facebook account with the exception of Florida, Massachusetts, and Montana. This, and the fact that Facebook is the most widely used social media platform by local EOs, (Suttman-Lea 2022), indicates this is an appropriate observed measure of voter education activity absent a more precise measure.<sup>14</sup>

The International Foundation of Electoral Systems (IFES) and the Center for Teach and Civic Life (CTCL), who track best voter education practices and provide communications training to EOs recommends that EOs post 1-2 times a day to increase the likelihood that content shared on Facebook is viewed by followers.<sup>15</sup> We collected all posts shared between September 1 and November 3, 2020 from all official state election Facebook pages that were active in 2020, and created a binary variable measuring whether or not a state EO's official Facebook account posted at least once a day between this timeframe (63 days).

An ideal measure would be the actual topics discussed by EOs on Facebook, but as of now these data are not available across all the states. This variable therefore, captures efforts to educate voters on social media as a measure of states' commitments to consistent voter education. The implication is that consistent post sharing increases the likelihood of voter exposure to election information, especially if the content shared is picked up by state and local media outlets or reflects other voter education efforts offline. Testimonies from EOs themselves and reporting on voter education efforts on social media provide sufficient evidence to confirm that social media is a powerful voter education tool and one that officials believe enhances trust in elections.<sup>16</sup>

Our second measure of observed voter education activity captures a state EO's commitment to build trusted communication networks. In late 2019 the National Association of Secretaries of State (NASS) released a campaign called #TrustedInfo2020. The campaign mission was to "ensure voters are getting accurate election information and cut down on the misinformation

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<sup>13</sup>All states operate and maintain a state election website, which is why we do not include a the existence of a website in our analysis.

<sup>14</sup>One limitation for our analysis that in Indiana, the new Secretary of State deleted the previous officeholder's account and created a new one, and so we were unable to collect posts shared in Indiana in 2020.

<sup>15</sup><https://www.techandcivicle.org/wp-content/uploads/2020/05/Participant-Guide-Social-Media-for-Voter-Engagement-.pdf>.

<sup>16</sup>Pam Fessler for the Elections Group. "Telling Our Story: An Elections Communications Guide." Available at: <https://www.electionsgroup.com/telling-our-story-guide>.

and disinformation that can surround elections. TrustedInfo2020 aims to highlight state and local EOs as the credible, verified sources for election information."<sup>17</sup> At least 23 state EOs took the pledge to incorporate the #TrustedInfo2020 message into their communication efforts. According to the media communication toolkit shared by NASS to member states, the baseline communication strategy was to include the #TrustedInfo2020 hashtag when sharing information on social media. States announced their commitment to using this strategy by sharing a video on social media, and including the #TrustedInfo2020 hashtag.<sup>18</sup> We measure this effort by including a binary variable of whether a took the NASS #TrustedInfo2020 pledge.

Table 2: State EO Voter Education Outreach: Social media, Traditional & Remote

State	#TrustedInfo2020 Pledge	1 post/day (Total FB Posts)	Received CEIR Grant
Alabama	Y	Y (86)	N
Alaska	Y	N (23)	N
Arizona	N	Y (88)	Y
Arkansas	N	N (63)	N
California	N	Y (208)	N
Colorado	Y	Y (74)	N
Connecticut	Y	Y (232)	Y
Delaware	N	Y (191)	N
Florida	N	No Facebook Page	Y
Georgia	N	N (37)	Y
Hawaii	N	N (48)	N
Idaho	Y	N (22)	N
Illinois	N	N (28)	Y
Indiana	N	2020 Page Deleted	N
Iowa	Y	Y (233)	Y
Kansas	N	Y (78)	N
Kentucky	N	Y (67)	Y
Louisiana	N	Y (115)	N

<sup>17</sup>National Association of Secretaries of State, #TrustedInfo2020 toolkit. Available at: <https://www.electioncenter.org/NASS-2020/TrustedInfo2020-Partner-Toolkit.pdf>.

<sup>18</sup>Arizona Secretary of State taking the #TrustedInfo2020 pledge on Twitter on August 3, 2020: <https://twitter.com/NASSorg/status/1290329850671235075>.

Maine	Y	N (55)	N
Maryland	Y	Y (200)	Y
Massachusetts	Y	No Facebook Page	Y
Michigan	Y	Y (223)	Y
Minnesota	Y	Y (73)	Y
Mississippi	N	Y (91)	N
Missouri	Y	Y (101)	Y
Montana	N	No Facebook Page	N
Nebraska	N	N (22)	N
Nevada	Y	N (5)	N
New Hampshire	N	Y (68)	N
New Jersey	Y	N (19)	Y
New Mexico	Y	Y (78)	Y
New York	Y	N (1)	Y
North Carolina	Y	Y (252)	Y
North Dakota	N	N (2)	N
Ohio	N	Y (162)	Y
Oklahoma	Y	Y (102)	N
Oregon	N	N (17)	N
Pennsylvania	Y	Y (247)	Y
Rhode Island	Y	N (47)	Y
South Carolina	N	Y (46)	Y
South Dakota	Y	N (59)	N
Tennessee	Y	Y (230)	Y
Texas	Y	N (52)	N
Utah	N	N (28)	N
Vermont	Y	Y (73)	Y
Virginia	N	Y (110)	N
Washington	N	Y (50)	Y
West Virginia	Y	Y (181)	N
Wisconsin	N	Y (100)	N

Table 2 shows there is notable variation in states' social media communication strategy and activity, and investment in voter education. About 28 states shared Facebook content more than 63 times, which is the minimum number of posts per day between September 1 and November 3 (63 days). Arkansas barely reached this threshold, and it is clear that some states were highly active, posting at least 2 times a day (California, Connecticut, Delaware, Iowa, Maryland, North Carolina, Massachusetts, Pennsylvania, Tennessee and West Virginia). There does not seem to be a strong relationship between taking the #TrustedInfo2020 pledge and the frequency of sharing on social media (Facebook) between September 1 and November 3, 2020. Some states, like Delaware and Louisiana exceeded the minimum of posting once a day (191 and 115 posts respectively), yet they did not adopt the NASS communication strategy. On the other hand, Alaska, Idaho and Maine took the pledge, but posted below the minimum threshold (23, 22 and 55). This behavior highlights differences in communication strategies across the states in what messages EOs share with voters on social media.

We include a series of attitudinal variables about the voter experience and voter fraud from the 2020 SPAE survey. First, we control for voters' perceptions about how committed their state and local EOs were to conducting fair and accurate elections (1= very/somewhat committed, 0= not too/not at all committed). We control for attitudes about how frequently a voter thinks voter and election fraud occurs, using six separate fraud concerns: double voting, vote stealing, voter impersonation, non-citizens voting, absentee fraud and manipulation of vote tallies by EOs. These measures range from 0 (not frequent) to 2 (frequent) with 1 reflecting uncertainty about the occurrence of fraud.

We further control for voting method, early in-person and mail voting, with in-person voting on Election Day as the reference category. We also include a binary variable for whether the respondent is a first time voter. The survey did not ask respondents about who they voted for in 2020, but it did ask about candidate choice in 2016. We control for whether a voter reported voting for Trump and Clinton, with all other candidates as the base category. Finally, we include socio-demographic control variables, such as age, education, race and ethnicity, party identification and ideology.

## Analysis and Findings

We run four logistic regressions with robust standard errors, clustering by state, using population weights (registered voter state weight), starting with personal vote confidence (M1), followed by county vote confidence (M2), statewide vote confidence (M3) and nationwide vote confidence (M4). Overall, our findings confirm voters are more confident in states demonstrating a robust commitment to voter education, and that this relationship is heavily conditioned by the national electoral context. We first compare the predictors for vote confidence at the personal level - My Vote (M1) Model - and the local-level - Votes in my County/City (M2) Model- where we expected to observe the strongest impact of voter education.

Figure 2 shows our observed measure of voter education - social media activity on Facebook by the state EO - increases the likelihood a voter feels confident their own vote and votes in their local jurisdiction were counted as intended in 2020, all else equal.<sup>19</sup> This finding validates communication guides recommending posting at least once a day as an effective way to communicate with voters.<sup>20</sup> It also holds after controlling for the state's broader investment in voter education through spending on communications, and engaging in remote outreach and paid media.

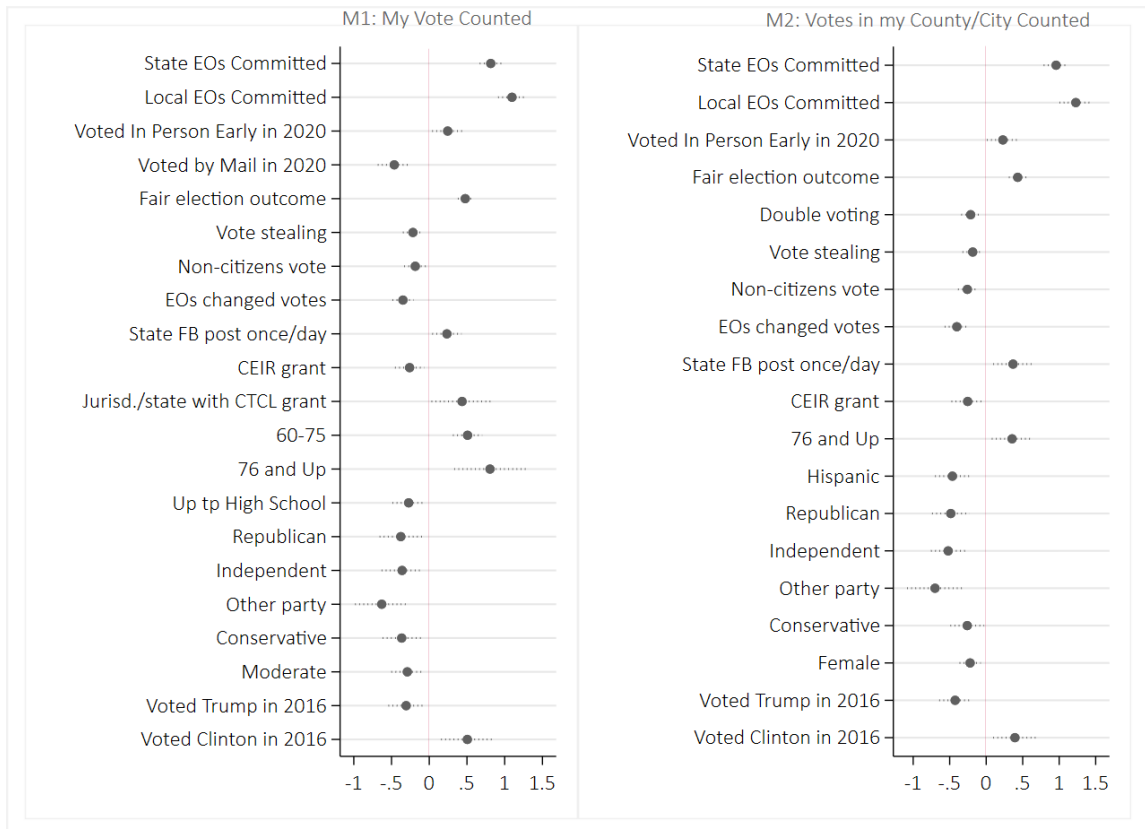
We also find interesting dynamics with respect to private funding in elections and voter confidence. In states that received a voter education grant from CEIR, voter confidence at the personal and local-level *decreased*, all else equal. This is counter-intuitive, considering these funds were explicitly used for voter education purposes. Regarding voter confidence at the personal level, however, our findings show that the higher the proportion of local jurisdictions that received a CTCL COVID-19 grant, the higher the likelihood of being confident that one's vote counted. These two findings raise important questions as to the mechanism through which local-level election administration factors, such as how localities utilized the CTCL and CEIR funds, affect evaluations of vote confidence at the personal level and the local level.

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<sup>19</sup>We plot coefficients of the statistically significant variables in our in-text figures. Full model outputs can be found in the Appendix.

<sup>20</sup>IFES. Social Media Strategies for Election Management Bodies. Available at: [https://www.ifes.org/sites/default/files/ifes\\_social\\_media\\_strategies\\_for\\_election\\_management\\_bodies\\_august2021.pdf](https://www.ifes.org/sites/default/files/ifes_social_media_strategies_for_election_management_bodies_august2021.pdf).

Figure 2: Likelihood of Confidence in Vote Accuracy: My Vote vs Votes in my County



The strongest impact for voters feeling confident about their own vote being counted as intended and votes in their locality were evaluations of how committed their local EOs were to running safe and accurate elections. In both models - M1 and M2 in Figure 2 - attitudes about local election administrators were found to have a stronger impact on vote confidence than attitudes about state EOs. It is significant that perceptions about both types of EOs were positively related to vote confidence at the personal and local levels. This finding offers more support to the argument that local-level factors heavily shape voter experiences, and have an impact on personal and local voter confidence. Furthermore, the consistency in attitudes about commitment to fair and accurate elections and voter confidence finding are substantively significant; they suggest voters' reception to information shared by their state EOs and their local EOs and their interactions with both shape voters' assessments about the electoral process.

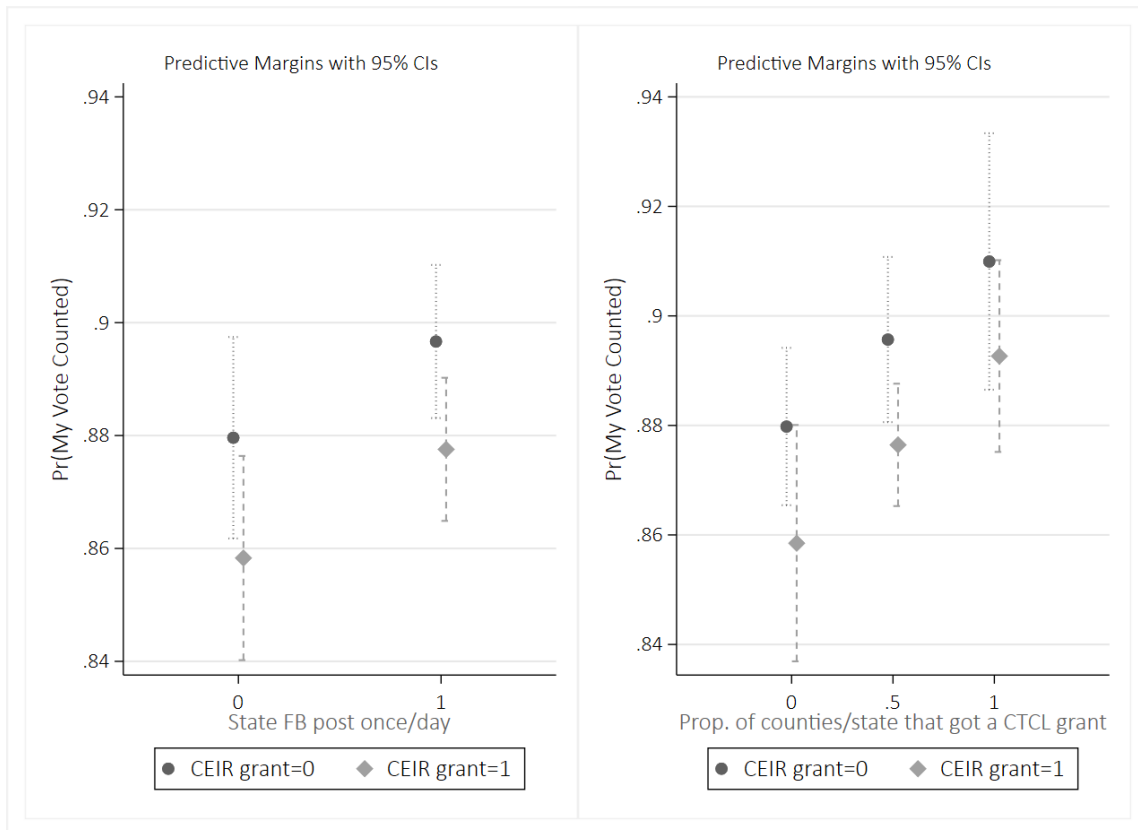
We now turn to the question of whether voter education commitments can moderate confidence in voters who might be otherwise predisposed to have less confidence in ballot counting at the individual level. To get a better insight of the dynamics across different voter education measures, especially the negative impact of CEIR funds on voter confidence, we present the marginal effects of state's EOs sharing information on Facebook at least once a day, and the proportion of jurisdictions who received a CTCL grant by state, depending on whether a state received a CEIR grant or not. We estimate these effects based on a hypothetical voter, who believes that voter fraud occurs regularly - that EOs changed votes - and voted for Trump in 2016. We use the latter criterion to assess the moderating effect of voter education on the "loser effect" ([Sances and Stewart III 2015](#)).

The overall effect of perceptions about the occurrence of voter fraud and vote choice in 2016 and vote confidence is negative, which is not surprising (Figure 2). However, for voters who lived in states where their state EO was sharing information on their official Facebook page at least once a day, the decrease in personal vote confidence as a result of being more likely to believe that EOs change votes or selecting a losing candidate was lower, all else equal. In effect, the gap in the predicted probability that a voter will express confidence that their vote counted as intended when comparing a voter in states whose state EO social media activity fell below standard threshold for engagements is wide. We find the same effects when it comes to local-level investment in election administration (CTCL grants). Figure 3, shows these two factors seem to moderate the negative impact of the CEIR funding on voter confidence at the



personal level.<sup>21</sup> This may indicate variation in how different funding sources are perceived by the public overall, especially among those voters who are highly skeptical about election integrity, such as our hypothetical voter. The effect of social media activity by a state EO on personal voter confidence is found to also moderate the negative impact of CEIR funds on voter confidence at the local level, and performs identically when we consider the effect on voters who believe that EOs change votes and voted for Trump in 2016.

Figure 3: My Vote Counted Model by Belief that EOs Change Votes & Voted for Trump in 2016



Our findings are substantively because they illustrate the possibility of effective voter education strategies for insulating even those voters more prone to have less confidence in ballot counting, something practitioners and civil society confirm anecdotally from experience.<sup>22</sup> They

<sup>21</sup>We run the analysis using the average spending per registered voter from the total amount a state received from CEIR, and our substantive findings across all models hold. We are not using this measure, however because in some states, the final grant amount has not been made public, and instead rely on the binary measure.

<sup>22</sup>Canter for Tech and Civic Life, Social Media Guide for Voter Engagement. Available at: <https://www.techandcivicle.org/wp-content/uploads/2020/05/Participant-Guide-Social-Media->

also underscore the importance of social media outreach, especially after accounting for other voter education/communication efforts, as we do in this analysis.

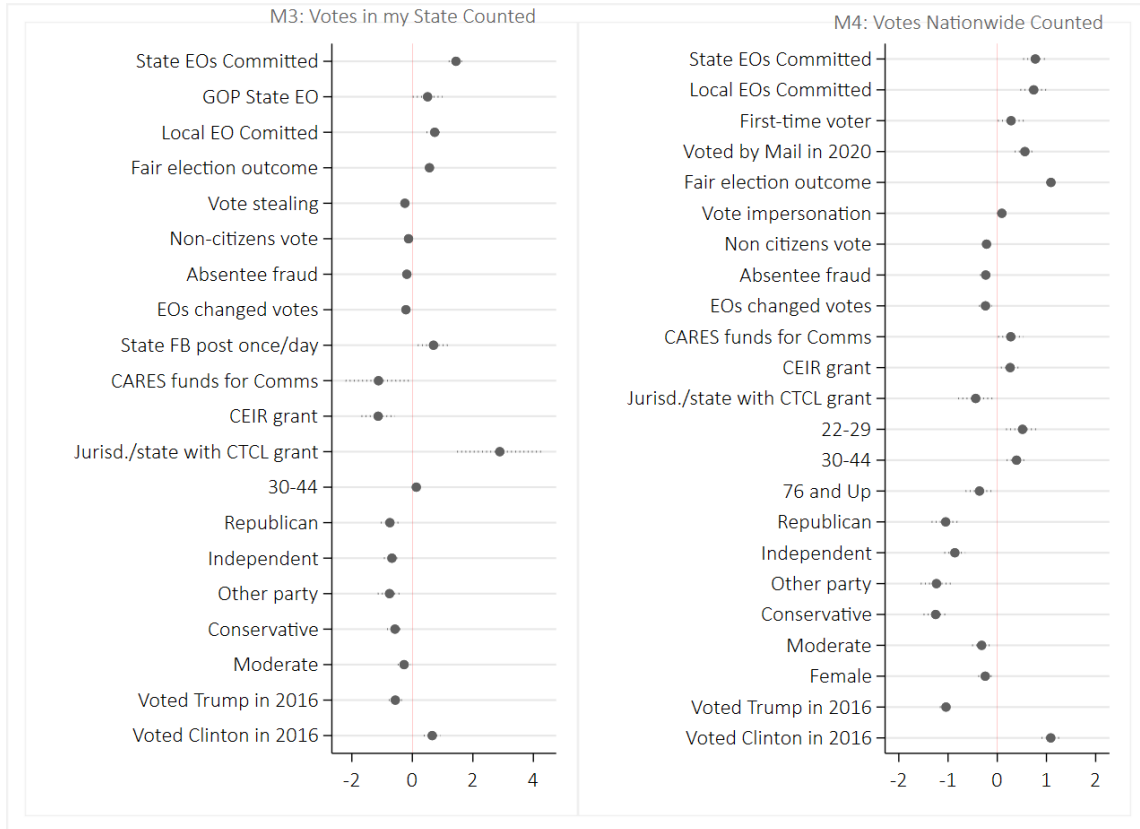
Moving beyond voters' personal and local-level assessments of vote confidence, we turn to confidence that votes in a voter's state were counted - Votes in my State (M2) - and votes nationwide were counted - Votes Nationwide (M4) - as intended. We find evidence that state-level investment in voter education affect voter confidence both at the state and national levels. However, there are nuances in effects between the type of investment, especially when it comes to funding source. We find similarities in how voter education affects voter confidence at the personal and statewide level, suggesting that similar contextual factors may shape voter attitudes at these levels even though the latter is further away from "home". This is in line with previous research suggesting messages coming from credible sources like state EOs, and those incorporating a reference group such as one's home state can shift voter behavior (Herrnson et al. 2015). When it comes to nationwide voter confidence, however, our findings suggest that the national context, such as discussions about election fairness, and partisanship, dominate voter attitudes.

Starting with confidence that votes statewide were counted (M3 in Figure 4), our findings show that social media activity by EOs positively impacts confidence that votes counted in a voter's state, all else equal. We also find a positive a strong effect of local-level investment in election administration (CTCL grants) on statewide voter confidence. As in Model 1, our analysis finds that statewide voter confidence also decreases if the voter resides in a state that received a voter education grant from CEIR. The relationship between the allocation of federal funding (CARES Act) on communications is also negative. This is also counter-intuitive and raises questions about the potential differential impact of the funding source on voter attitudes.

The role of the state EO in driving these attitudes, unlike what we found in the "My Vote" (M1) model, is noteworthy. Voters who said that their state EO was committed to running fair and accurate elections were more likely to express confidence that votes in their state were counted as intended. The stronger impact of the state EO relative to local EOs in this model is contextual, and indicates that voters may connect election outcomes in their state to their Chief Election Officer, in contrast to election outcomes in their locality, which they may connect more to their local EO. The impact of this indicator is not as strong in Model 4 - Votes Nationwide

- which seems consistent with the assessment that the electoral context at the national level dampens any positive effects of efforts by EOs to build confidence in elections.

Figure 4: Likelihood of Confidence in Vote Accuracy: Votes in my State vs Votes Nationwide



In Model 4, votes counted nationwide, the direction of the relationship flips when we move to confidence that votes nationwide were counted as intended, as Model 4 in Figure 4 shows. In states where EOs allocated more funds for communications from the CARES Act and on voter education through a CEIR grant, nationwide voter confidence increased, all else equal. Interestingly, the direction of the local-level investment on election administration through the CTCL COVID-19 grants was reversed in this model. This is completely distinct from what we find in the previous models, particularly in how CEIR voter education grants affected nationwide voter confidence. According to CEIR, most of the funds were used for paid media, although states also reported investing in mailings to voters informing them about changes in election procedures due to COVID-19.<sup>23</sup> It is possible, therefore, the negative relationship

<sup>23</sup>CEIR Voter Education Grant Program: <https://electioninnovation.org/research/ceir-2020-voter->

between federal and private funding and personal, local, and statewide voter confidence reflect nuances in how the funds were used in addition to how voters may perceive them.

It is also likely that the rhetoric about rampant voter fraud and the connection of the Republican party to allegations of stolen elections dominated voter attitudes about confidence in the accuracy of the vote nationwide. Supporters of Donald Trump are more likely to report that fraud occurred in 2020, and to express low confidence in the national vote count, compared to confidence that their vote and votes in their locality and state were counted as intended (Persily and Stewart III 2021).<sup>24</sup> We find that partisanship, having voted for Trump in 2016, and believing that fraud occurs frequently has the strongest impact on national voter confidence, relative to their impact on personal, local, and statewide voter confidence. Regardless of the negative effects of these factors, our analysis provides strong evidence as far as vote confidence at the national is concerned, investing resources in voter education mitigates the negative impact of belief that election officials change votes and the loser effect on voter confidence.

We flesh out the dynamics in how voter education affects voter confidence at the state and national level using our same hypothetical voter as an example: a voter who believes that EOs change votes and voter for Trump in 2016. As Figure 5 shows, if our hypothetical voter lives in a state whose EO shared content on Facebook at least once day, or where a higher proportion of localities received a CTCL-COVID-19 grant, the likelihood of being confident in vote accuracy at the state level is higher than than for the same hypothetical voter who lives in a state with less investment in voter education in 2020, as we measure it here. These factors also dampen the negative impact of the CEIR grant funds, especially in states with the highest proportion of local EOs receiving additional funds for election administration.

These findings suggest even among voters who support election integrity deniers, such as Donald J. Trump, or who believe that voter fraud is rampant, voter education can increase the likelihood of higher confidence in vote accuracy at the state level. As we show in Figure 6, the significance of voter education in inoculating such voters from these factors is noteworthy, considering that it is at the national level that we observe the strongest influence of partisanship, winner-loser effects and perceptions of voter fraud.

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education-grant-program/.

<sup>24</sup><http://brightlinewatch.org/a-democratic-stress-test-the-2020-election-and-its-aftermathbright-line-watch-november-2020-survey/>.

Figure 5: Votes in My State Counted Model by Belief that EOs Change Votes & Voted for Trump in 2016

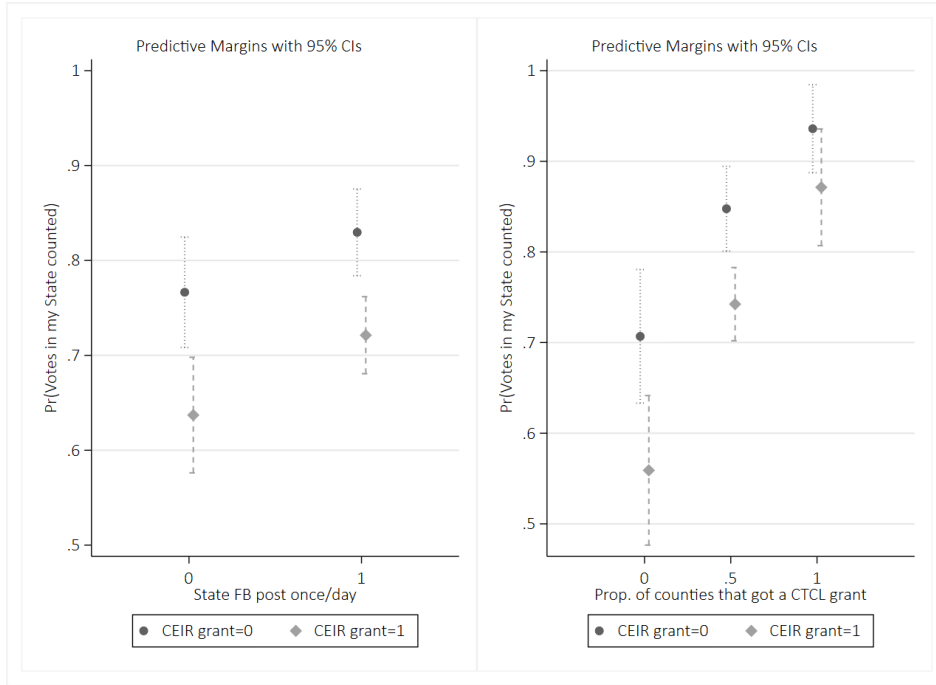
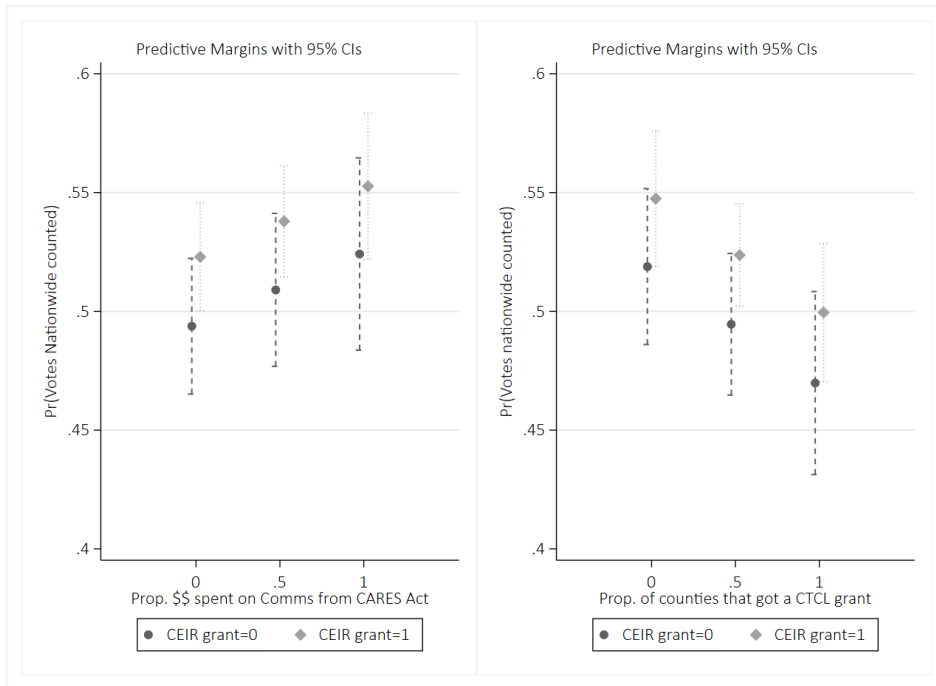


Figure 6: Votes Nationwide Counted Model by Belief that EOs Change Votes & Voted for Trump in 2016



## Discussion

In this paper, we assess an overlooked dimension of citizen experiences with the electoral process - the information ecosystem cultivated by the officials tasked with overseeing elections in their state. We argue voter education increases confidence in vote accuracy because it makes the process of voting easier, improves voting experiences, and enhances election transparency. It exposes voters to information about how elections work, helping them cast a ballot that will count, and makes voters aware about how EOs keep the election process safe and secure. We theorize that even for voters who may be more predisposed to have less confidence in ballot counting, living in a state with a strong commitment to voter education will insulate them from experiences and characteristics they have that negatively effect confidence.

Overall, we show that state election officials (EOs) who make robust investments in voter education can bolster confidence that one's individual vote and votes across one's state were counted as intended. Our most directly measure of voter education efforts - the activity of content sharing on a states' official Facebook election accounts - increases the likelihood that individuals in those states believe their ballot and ballots at the jurisdiction and state level were counted as intended, even for voters who would be less likely to have confidence at this level, such as voters who voted for Donald J. Trump in 2016 and who believe that voter fraud is very common.

Our measures of voter education also capture states' commitment to voter education through the proportion of resources allocated to voter communication. The effects of these measures suggest these efforts can also bolster confidence in vote counting, but this varies depending on the level of confidence. Private funds - CTCL COVID-19 grants and the CEIR Voter Education grants - impacted voter confidence in distinct ways: voters in states with greater proportion of localities that received a CTCL grant had higher personal and statewide voter confidence (Models 1 and 3), but lower confidence at the national level. In states that received a CEIR voter education grant, voters had consistently lower confidence at the personal, local and state level, but positive at the national level. Additionally, we find a positive impact of investment in communications through federal funds (CARES Act) only in attitudes about nationwide vote accuracy. When evaluating how these measures relate to voter confidence on voters who are the least likely to express confidence in vote counting - we find that the negative influence of these funds is mitigated by other voter education efforts, such as the EOs' social

media activity.

We contribute to existing studies of voter confidence in two ways. One, we establish that voter education explains perceptions about votes being counted as intended, one of the most important components of running free and fair elections. Second, we show voter education has the potential to inoculate voters against the deleterious effects of election denial, as propagated by political candidates, as well as unfounded concerns about rampant voter fraud. While we do not precisely measure or test our proposed causal mechanisms—that voter education makes the voting experiences easier, more positive, and transparent, thereby boosting confidence—our findings here are reflective of more precisely causally assessed findings through field experiments on the positive impact of outreach and information from election officials on voter behavior (Herrnson et al. 2015; Mann and Bryant 2020). They also reflect assumptions made - but not empirically tested - by previous scholars assessing the link between election administration and confidence in vote outcomes (Atkeson and Saunders 2007; Alvarez, Hall and Llewellyn 2008).

Despite the substantive significance of these findings, the counter-intuitive findings in regards to the impact of funds explicitly allocated for voter education (CEIR funds) and the null impact of state-level investment in voter education (funds matched from CARES Act on communications), underscore the need to measure voter education at a more granular level. Aside from social media activity, there is no detailed breakdown of how all these funds translated into voter education activities, and filtered down to the local level. We have reports that states invested in communications, paid media, remote outreach, with a specific focus on informing voters about how to vote by mail. However, we do not have an accurate picture of what forms these efforts took, which could better explain how exactly they shaped voter confidence in 2020. Precise measures will also allow for a more accurate assessment of the local-level voter education, and how distinct these efforts are, or how guided they are, from efforts initiated at the state level.

Further research is needed to explore how voter education can restore a healthier information ecosystem, where voters' skepticism about the integrity of the election process is expressed in good faith, rather than driven by misinformation about the occurrence of fraud and rigged elections. One unanticipated finding was that states' voter education efforts through social media moderated the confidence in personal, local, and state vote counting for those who might otherwise be less likely to have confidence in election outcomes, like voters who supported President Donald Trump in 2016 and 2020, and who believe vote stealing and other fraudulent

behavior is a problem. We suspect voter education is functioning here not by *reversing* the perspectives of these individuals, but by creating an information ecosystem whereby they are more immune to the negative effects on confidence of these characteristics.

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## Appendix

Table A1: Model 1: My Vote

	<i>My Vote Counted Accurately</i>
<b>Attitudes and Vote Modes</b>	
State EO Committed	0.815*** (0.075)
LEO Committed	1.096*** (0.094)
First time voter	-0.344 (0.209)
Voted early in person	0.244* (0.105)
Voted by mail	-0.460*** (0.111)
Belief in fair outcome	0.477*** (0.050)
Belief in double voting	-0.096 (0.088)
Belief in vote stealing	-0.218** (0.068)
Belief in vote impersonation	-0.105 (0.076)
Belief in non-citizens voting	-0.186* (0.074)
Belief in absentee fraud	-0.035 (0.068)
Belief in vote tallies changed	-0.348*** (0.071)
<b>Voter Education Measures / EO Measures</b>	
Facebook Post 1 / day	0.236* (0.098)
#TrustedInfo2022 Pledge	-0.110 (0.103)
CARES Matched\$ for Communications	0.009 (0.096)
CARES Federal \$ for Communications	0.002 (0.155)
CEIR Funds Recipient	0.265** (0.100)
Proportion CTCL Jurisdictions	0.430* (0.207)
State CEO Party	0.005 (0.097)
State CEO Selection Method	0.066 (0.121)
<b>Demographics</b>	
Age 18-21	0.100 (0.295)
Age 22-29	-0.039 (0.132)
Age 30-44	-0.038 (0.086)
Age 60-75	0.508*** (0.099)

Age 76 and up	0.804** (0.242)
High school degree	-0.272* (0.108)
Some college	-0.125 (0.144)
College graduate	0.103 (0.189)
Black	-0.078 (0.162)
Hispanic / Latino	-0.405 (0.247)
Other race	-0.327 (0.203)
Female	0.129 (0.069)
<b>Political Characteristics</b>	
Trump 2016 Vote	-0.305* (0.120)
Clinton 2016 Vote	0.504** (0.178)
Republican	-0.377** (0.143)
Independent	-0.360* (0.138)
Other Party ID	-0.630*** (0.180)
Conservative leaning	-0.364 ** (0.129)
Moderate	- 0.291 ** (0.108)
Constant	2.238 (0.322)***

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*Note:*

\*p<0.05; \*\*p<0.01; \*\*\*p<0.001

Table A2: Model 1: County Vote

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*Votes in My County Counted Accurately*

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<b>Attitudes and Vote Modes</b>	
State EO Committed	0.958*** (0.086)
LEO Committed	1.228*** (0.114)
First time voter	-0.280 (0.197)
Voted early in person	0.229* (0.112)
Voted by mail	-0.076 (0.115)
Belief in fair outcome	0.431*** (0.061)
Belief in double voting	-0.212** (0.066)
Belief in vote stealing	-0.185* (0.072)
Belief in vote impersonation	-0.030 (0.083)
Belief in non-citizens voting	-0.258*** (0.066)
Belief in absentee fraud	-0.088 (0.070)
Belief in vote tallies changed	-0.402*** (0.085)
<b>Voter Education Measures</b>	
Facebook Post 1 / day	0.369** (0.139)
#TrustedInfo2022 Pledge	-0.097 (0.114)
CARES Matched\$ for Communications	0.219 (0.169)
CARES Federal \$ for Communications	0.204 (0.245)
CEIR Funds Recipient	0.258* (0.115)
Proportion CTCL Jurisdictions	0.586 (0.306)
State CEO Party	0.179 (0.131)
State CEO Selection Method	-0.028 (0.177)
<b>Demographics</b>	
Age 18-21	0.144 (0.225)
Age 22-29	-0.059 (0.166)
Age 30-44	-0.036 (0.096)
Age 60-75	0.105 (0.073)
Age 76 and up	0.354* (0.142)
High school degree	-0.100 (0.105)

Some college	-0.169 (0.122)
College graduate	0.040 (0.115)
Black	-0.237 (0.194)
Hispanic / Latino	-0.464*** (0.122)
Other race	-0.210 (0.127)
Female	-0.219* (0.074)
<b>Political Characteristics</b>	
Trump 2016 Vote	-0.424*** (0.111)
Clinton 2016 Vote	0.394* (0.151)
Republican	-0.486** (0.131)
Independent	-0.521*** (0.120)
Other Party ID	-0.702*** (0.195)
Conservative leaning	-0.259* (0.118)
Moderate	0.025 (0.113)
Constant	1.742*** (0.336)

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*Note:*

\*p<0.05; \*\*p<0.01; \*\*\*p<0.001

Table A3: Model 1: State Vote

*Votes in My State Counted Accurately***Attitudes and Vote Modes**

State EO Committed	1.441*** (0.121)
LEO Committed	0.740*** (0.138)
First time voter	-0.193 (0.132)
Voted early in person	0.062 (0.144)
Voted by mail	0.200 (0.135)
Belief in fair outcome	0.566*** (0.050)
Belief in double voting	-0.071 (0.055)
Belief in vote stealing	-0.246*** (0.054)
Belief in vote impersonation	-0.015 (0.063)
Belief in non-citizens voting	-0.125* (0.053)
Belief in absentee fraud	-0.182** (0.064)
Belief in vote tallies changed	-0.212*** (0.060)

**Voter Education Measures**

Facebook Post 1 / day	0.698** (0.265)
#TrustedInfo2022 Pledge	0.044 (0.233)
CARES Matched\$ for Communications	0.709 (0.373)
CARES Federal \$ for Communications	-1.122* (0.553)
CEIR Funds Recipient	-1.127*** (0.285)
Proportion CTCL Jurisdictions	2.890*** (0.717)
State CEO Party	0.507* (0.252)
State CEO Selection Method	0.556 (0.411)

**Demographics**

Age 18-21	0.413(0.231)
Age 22-29	0.208 (0.147)
Age 30-44	0.130* (0.058)
Age 60-75	0.021 (0.068)
Age 76 and up	-0.092 (0.134)
High school degree	0.133 (0.110)



Some college	0.085 (0.094)
College graduate	0.174 (0.095)
Black	0.102 (0.251)
Hispanic / Latino	-0.242 (0.168)
Other race	-0.194 (0.225)
Female	-0.089 (0.049)
<b>Political Characteristics</b>	
Trump 2016 Vote	-0.562*** (0.111)
Clinton 2016 Vote	0.658*** (0.142)
Republican	-0.742*** (0.151)
Independent	-0.675*** (0.134)
Other Party ID	-0.753*** (0.198)
Conservative leaning	-0.573*** (0.133)
Moderate	0.271 (0.107)*
Constant	-0.215 (0.459)

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*Note:*

\*p<0.05; \*\*p<0.01; \*\*\*p<0.001

Table A4: Model 1: Nation Vote

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*Votes Across the Nation Counted Accurately*

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<b>Attitudes and Vote Modes</b>	
State EO Committed	0.775*** (0.126)
LEO Committed	0.742*** (0.138)
First time voter	0.283* (0.136)
Voted early in person	0.076 (0.099)
Voted by mail	0.559*** (0.105)
Belief in fair outcome	1.092*** (0.049)
Belief in double voting	-0.092 (0.080)
Belief in vote stealing	-0.083*** (0.068)
Belief in vote impersonation	0.094* (0.048)
Belief in non-citizens voting	-0.218*** (0.043)
Belief in absentee fraud	-0.233*** (0.059)
Belief in vote tallies changed	-0.239*** (0.067)
<b>Voter Education Measures</b>	
Facebook Post 1 / day	-0.180 (0.098)
#TrustedInfo2022 Pledge	-0.046 (0.097)
CARES Matched\$ for Communications	-0.098 (0.185)
CARES Federal \$ for Communications	0.291* (0.125)
CEIR Funds Recipient	0.258** (0.093)
Proportion CTCL Jurisdictions	-0.418* (0.181)
State CEO Party	0.194 (0.103)
State CEO Selection Method	0.216 (0.124)
<b>Demographics</b>	
Age 18-21	0.100 (0.169)
Age 22-29	0.511** (0.171)
Age 30-44	0.392*** (0.102)
Age 60-75	-0.136 (0.097)
Age 76 and up	-0.361* (0.143)
High school degree	0.056 (0.111)

Some college	-0.172* (0.103)
College graduate –	0.032** (0.087)
Black	0.321* (0.165)
Hispanic / Latino	0.023 (0.171)
Other race	-0.303 (0.155)
Female	-0.243** (0.072)
<b>Political Characteristics</b>	
Trump 2016 Vote	-1.042*** (0.064)
Clinton 2016 Vote	1.087*** (0.095)
Republican	-1.047*** (0.146)
Independent	-0.860*** (0.109)
Other Party ID	-1.236*** (0.163)
Conservative leaning	-1.254*** (0.125)
Moderate	-0.317** (0.099)
Constant	-0.232 (0.225)

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*Note:*

\*p<0.05; \*\*p<0.01; \*\*\*p<0.001