

Registration Innovation: The Impact of State Laws on Voter Registration and Turnout

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Abstract: This article considers the impact of four registration innovations – election day registration, online registration, the pre-registration of youth, and automatic voter registration – on individual registration and turnout in the United States between 1996-2016. It also considers how these registration innovations may work together by testing the impact of a series of combinations of registration regimes. The results demonstrate that election day registration has a small negative impact on registration, but a positive impact on turnout; online registration improves both registration and turnout; and that pre-registration has a positive impact on both the registration and turnout rates of youth voters. The results for automatic voter registration are inconclusive due to the small number of states that have adopted this innovation. This article concludes that innovations in the way that election administrators register voters has an important impact on an individual's likelihood of being registered to vote and turning out to the polls.

Keywords: Elections, Voter Registration, Voter Turnout, United States, Electoral Integrity, Election Administration

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Introduction

For many citizens, voter registration is the first, and arguably, most cumbersome step in the voting process. It often involves filling out forms, proving residence and/or identity, and submitting the paperwork before a closing date. In the United States, this process can look dramatically different depending on which state the voter lives in. Some states have strict closing dates for advance registration, while others allow registration on election day. Voters in some states can register online, while others must register in-person at a registration office or by mail. Some states allow 16- and 17-year olds to pre-register before they are eligible to vote, while others require a voter to be 18 before they can register. Most recently, some states have begun to automatically register voters through existing state databases.

In recent years, a number of national laws have been passed to help streamline registration and other administrative procedures in the United States. The National Voter Registration Act (1993), or 'motor voter' law, enabled voters to register while getting a driver's license and restricted the reasons for which states could remove eligible voters from their registration lists. In 2002, the Help America Vote Act required states to implement state-wide centralized voting lists that are updated with information from other state agency databases. More recently, the Presidential Commission on Electoral Administration (2014) addressed a variety of election administration challenges, including the registration of voters (Shelley, 2013).

This focus on improving voter registration stems from an understanding that voter registration is crucial for both voters and election administrators. From the perspective of election management bodies (EMBs), accurate registration is vital to launch public information campaigns and effectively allocate valuable resources on election day. For voters, research has demonstrated that those who are already registered are most likely vote, in part, because they benefit from information and mobilization by election administrators and political parties, and may, over time, develop a habit of keeping their registration information up-to-date and going to vote (Erikson, 1981; Wolfinger, Highton, & Mullin, 2005).

This article considers the potential impact of four registration innovations on individual registration and turnout: election day registration, online registration, automatic voter registration and the pre-registration of youth. These four innovations represent the major types of changes to registration systems: increasing the length of time during which a voter can register, providing additional opportunities to register, and finally, changing the way that registration lists are accessed and updated. Additionally, it recognises that registration laws are not isolated, and therefore considers a variety of combinations of registration laws working together in unique registration regimes.

Using data from the Current Population Survey from the United States in the eleven election years since the enactment of the National Voter Registration Act (1996-2016), this article employs logistic regression analysis with state and year fixed effects to estimate the overall impact of these laws, and various combinations of these laws, on an individual's probability of being registered and turning out to vote.

It finds that that election day registration has a small negative impact on registration, but a positive impact on turnout; online registration improves both registration and turnout; and that pre-registration has a positive impact on both the registration and turnout rates of youth voters. The results for automatic voter registration remain inconclusive due to the small number of states

that have adopted this innovation. Nonetheless, these findings demonstrate the promise of improving voter turnout through registration innovations.

Voter Registration in the United States

In 2012, a Pew Centre report on registration suggested that about a quarter of eligible Americans were not registered to vote (The Pew Center on the States, 2012). The accuracy of voter registration records in the United States was also questioned: the same report estimated that about 1 in 8 registrations were invalid, meaning they no longer reflected current information. These invalid registrations could reflect a change in address that was not updated in the file, or a deceased voter. In another article, Ansolabehere and Hersh (2010) suggested that in 2010 the percentage of invalid registrations was close to 9%. While these figures are certainly shocking, one may ask: why does incomplete and inaccurate registration matter for American democracy?

From the perspective of election management, accurate voter registration before the election is important for allocating appropriate resources to polling places, in order to enhance voters' experiences, and potentially decrease wait times. Effective planning can avoid unnecessary frustration for voters and elections staff. Furthermore, registration prior to election day may enhance the security of the vote, discouraging voters from committing fraud by voting at multiple polling places.

For many American voters, registration is the first step that must be taken in order to be eligible to vote on election day. Consequently, how easy it is to register may play a role in whether they decide to vote at all. According to a rational choice, or Downsian, model of voting, voters decide whether or not to vote, in part, based on the projected time or cognitive costs of voting (Downs, 1957). The registration process can be time-consuming, and requires knowledge of the appropriate offices to contact, the documents necessary to prove identification or residence, and the deadlines by which one must register in order to be eligible to vote. As such, voter registration can have an important role to play in the calculus of voting. If registration presents a burden for voters, they may choose to forgo voting altogether.

This potential burden on voters is at least part of the reason why election administrators and legislators may choose to implement innovations to make the process easier on voters and increase the likelihood that they will be accurately registered. These innovations have been largely focused on three major types of changes (see Figure 1). Some innovations focus on the length of the period during which voters can register. This includes two major innovations, the first is a total elimination of closing dates with election day registration, and the second is pushing the registration deadline closer to the election date. Other innovations focus on providing more opportunities for voters to register. These include the 'motor-voter' laws that allow voters to register at state motor vehicle offices, the pre-registration of youth, online registration and registration campaigns targeted at specific groups of voters. Finally, election administrators in the United States have attempted to improve their registration system through list management. To improve the accuracy of their registration lists, some states have implemented more centralized systems of registration throughout the state, or share information with other government agencies and departments. These types of innovations may also include changing how often they purge their lists of inactive voters. Some purging requirements were included in the 'motor voter' law of 1993. Innovations concerning list management can even include online registration, as it makes it easier for citizens themselves to update their registration information.

[Figure 1 here]

Voter registration also has important effects on turnout rates. In some states, if voters are not registered before election day, they do not even have the option of voting. But even if voters can register on election day, as is the case for an increasing number of states, they forgo some of the benefits of registration. In particular, registrants are usually provided with some information about the voting process and reminders in the mail by election administrators and/or political parties, which decreases some of the information costs of voting. Wolfinger et al. (2005) tested the impact of a number of actions an election administrator may take to help those who are registered know how to vote, including whether being sent sample ballots or information about polling locations affected turnout rates. They found that mailed information boosted turnout rates by between 0.6 and 1.2 percentage points (depending on whether sample ballots or polling place information were sent), especially among less-educated and younger voters.¹

Hypotheses

This article explores the impact of common registration innovations on registration accuracy and turnout. How effective are legal reforms at producing the intended effects of better registration coverage and higher voter turnout? Previous research on other legal innovations that are aimed at reducing some of the costs of voting have demonstrated that legal changes do not always have large or even positive effects on voter turnout. For example, Burden et al (2014) demonstrate that early voting opportunities can actually have a negative impact on voter turnout. This line of research is vital to ensure that new registration laws are having the intended effect of improving registration and turnout.

This article considers four major registration innovations that have been implemented by various states over the past ten years: election day registration, online registration, the pre-registration of young voters, and automatic voter registration. These four innovations cover some of the major challenges that registration laws are meant to address, namely closing dates, expansion of registration opportunities and list management.

Most of the previous studies on election laws consider turnout as the main dependent variable. However, if we expect that turnout is improved through better registration, it is important to empirically examine the impact of registration laws on this first step of the voting process, that is, voter registration itself. Research that only uses voter turnout as a dependent variable cannot speak to the potential implications of new registration laws for registration accuracy. This knowledge is crucial for the proper allocation of resources by election management bodies. This article therefore considers the impact of registration laws on two related outcomes: registration and voter turnout.

Election Day Registration (EDR)

Let us first examine the impact of election day registration, an innovation that has already been the focus of a great deal of empirical research. As more and more states adopt election day

¹ Primo et al. (2007) reassess the findings reported by Wolfinger et al. (2005) in light of an alternative method to accounting for clustered data. One set of results reported by Wolfinger and colleagues that remains significant even after adopting clustered standard errors as Primo and colleagues advise is that turnout is higher among registrants who are between the ages of 18 and 24, do not live with their parents, and are mailed a sample ballot in advance of an election.

registration, it is possible that any initial relationship found between election day registration and turnout may have been the product of other factors unique to early adopters of this innovation, such as the political climate in which this registration law was adopted.

Election day registration, as the name suggests, allows voters to register at the polls on election day. This means that they can bypass the sometimes-difficult advance registration procedures and, in a few cases, avoid some oversight by federal authorities (Hanmer 2009). Furthermore, citizens who initially had chosen not to register are able to change their minds closer to election day, when parties and the media may mobilize them.

The earliest study of election day registration, by Wolfinger and Rosenstone (1978), used cross-sectional data on registration rates for the 1972 presidential election, alongside data on whether the states had election day registration or required pre-registration, and if so, when their closing dates were, and the opening hours of the registration offices. They found that less stringent registration laws increased turnout by about 9 percentage points. For election day registration specifically, the impact was about 6 percentage points. Later studies by Highton (1997), and Brians and Grofman (2001), found similar results. Many of these studies also found that election day registration was most beneficial to low-education voters, who may not have had the information or foresight to register before election day (Highton, 1997; Mitchell & Wlezien, 1995; Nagler, 1991). However, there remains some debate as to whether this finding holds in all cases, particularly as election day registration becomes more common (Brians & Grofman, 1999, 2001; Highton, 2004; Huang & Sheilds, 2000).

Re-examining the impact of election day registration a decade later, Green and Knee (2011) argued that Wolfinger and Rosenstone's results were largely a product of the methodological assumptions used in their analysis. They note that this analysis did not take into consideration the potential state-specific impacts on voter turnout, and failed to take into account the clustering of state observations. Using time-series data instead, they found that the impact of registration laws on turnout was not as large as Wolfinger and Rosenstone suggest. In their analysis, the impact of changing from 30-day advance registration to election day registration is strongest for presidential election years (the impact ceases to be statistically significant when midterm elections are included), but the impact on turnout is closer to 5 percentage points. In another methodologically rigorous re-examination of the relationship between registration and turnout, Ansolabehere and Konisky (2006) evaluated the impact of mandatory pre-election day registration laws in counties in Ohio and New York where advance registration had previously not been mandatory. They find that these laws did suppress turnout, but at a lower rate than anticipated: their estimates in this 'natural experiment' were closer to 3 to 5 percentage points of long-term turnout decline in the counties studied.

Based on these findings, the availability of election day registration should have a positive impact on an individual's propensity to register and turn out to vote. Voters who previously would not have registered have the opportunity to register on election day. Their information will be recorded for subsequent elections. Furthermore, they are less likely to experience problems with registration that might prevent them from voting, since they will be able to simply amend their registration information, or even register for the first time, on election day.

Online Registration

The second registration innovation tested in this article is online registration. Arizona was the first state to enact online voter registration in 2002, and since then, many states have

followed suit, moving parts or all of their registration process online. In the 2014 midterm election, 21 states offered online registration. Scholars have suggested that online registration could significantly improve the accuracy of the registration process, since registration over the internet will improve access and make registration more convenient for many voters, encouraging them to keep their registration status and information current (Barreto et al., 2010; Shaw, Ansolabehere, & Stewart, 2015). However, this hypothesis has not been subjected to empirical evaluation. Given these suggested positive impacts, the option of online registration should have a positive impact on whether a voter is registered and turns out to vote.

Automatic Voter Registration (AVR)

Automatic voter registration is a fairly new means by which states improve their registration records. Unlike other methods listed above, automatic registration requires little to no action on the part of the voter, but rather puts the impetus for voter registration on the state. In comparative terms, voter registration tends to be automatic in other advanced democracies; the United States and France are notable cases of voluntary voting rules. In a classic study of institutional effects on voting behavior, Powell (1986) estimates that turnout in America would be 14 points higher if a system of automatic registration was enacted in the states. Braconnier et al. (2017) present experimental evidence in France that reducing registration requirements increases interest in politics and participation in an election. Automatic voter registration, as the name suggests, automatically registers citizens who have submitted information to other state agencies (for example, the state department of motor vehicles), unless they choose to decline. It also facilitates the sharing of information across state departments in order to improve registration records. This innovation has been approved in ten states and the District of Columbia, and are being considered in the legislatures of a number of other states (Justice, 2017). However, for the 2016 general election, only six states had implemented automatic voter registration. Oregon, California, West Virginia, and Vermont adopted AVR through the normal legislative process; Connecticut and Georgia implemented AVR by means of inter-agency data sharing agreements.² Because the innovation is so new, little research has evaluated the impact of this model of registration. There is, as far as we know, one report assessing the effects of AVR in Oregon (Griffin et al. 2017). It is predicted to have a positive impact on overall registration in the state, since it removes the burden of registration from the citizen, and automatically completes this potentially difficult task for them.

Pre-Registration

Finally, this article considers pre-registration, which allows citizens younger than 18 to register to vote. The exact regulations surrounding these laws vary by state, but in general they allow 16 or 17 year-olds to register before they are eligible to vote. This is often done with the assistance of their schools or parents, potentially reducing some of the information costs of voting (Cherry, 2012; Holbein & Hillygus, 2015; McDonald & Thornburg, 2010). Once registered, these young voters will further benefit from reminders and updates from the state and political parties. Furthermore, it is possible that being registered early in life will develop a habit of keeping their registration up-to-date, as other research has demonstrated that voting is a habit, that once established, often continues through life (Fowler, 2006; Gerber, Green, & Shachar,

² The District of Columbia adopted automatic voter registration in February of 2017. Since the 2016 elections AVR has also been adopted in Alaska, Colorado, Illinois, and Rhode Island.

2003; Plutzer, 2002). However, like online registration, pre-registration has been the focus of far less empirical research than other registration innovations.

In one of the only national empirical evaluations of pre-registration, Holbein and Hillygus (2015) find that pre-registration increases the turnout of young voters by an average of 13 percentage points. We likewise expect that pre-registration will have a positive relationship with registration and turnout among the youngest group of voters.

Method

The United States is an ideal country in which to study the impact of election laws, since states enact election laws mostly independently,³ and have changed their laws frequently over the past several years. This allows for quantitative comparative research across states, while holding constant some country-specific factors, such as the electoral system, the party system and general levels of economic development. Additionally, this article directly addresses the wealth of American research on election administration laws, so it is fitting to continue this research within the American context.

Data

Registration innovations are tracked between 1996-2016 for each state. During this 20-year time frame, there was a proliferation of registration innovations at the state level (Figure 2). This analysis begins in 1996 to account for the implementation of the National Voter Registration Act. The benefit of using multiple election years is the ability to analyze the effects of changes in registration laws over time, allowing for a more robust analysis of the impact of the laws. It is important to note, that in most cases these innovations remained in place once introduced, with the notable exception of North Carolina, where pre-registration was eliminated for the 2014 election (Blinder & Fausset, 2016). Data on these changes have been collected through the National Council of State Legislatures database of election laws, which outlines when each law is passed and the year it was implemented year of these innovations.⁴

[Figure 2 here]

The methods used in this paper are unique in two ways. Firstly, in addition to considering each registration innovation independently, we also include variables that include the various combinations of registration innovations that may be working together in order to produce the state's unique registration and turnout rates for any given election. Previous research has indicated that electoral laws may work together in order to produce improvements in (or declines in) registration and voter turnout. For example, Burden et al (2014) demonstrate that without election day registration, early voting may actually decrease voter turnout. In the same way, we expect that combinations of registration opportunities may work together to promote the fullest registration and turnout in a state. For example, a state with automatic voter registration, pre-registration and opportunities for online registration (which provides opportunities for voters to update their information online), alongside election day registration (in case there remained

³ Major exceptions being the National Voter Registration Act (1993) and Help America Vote Act (2002), which still required states to choose whether, how and when to implement their guidelines.

⁴ In addition, some email communication with the NCSL helped to clarify pre-registration laws. The Election Administration and Voting Survey and the Brennan Centre for Justice website were also consulted.

problems with the registration process) may provide the most comprehensive regime to promote voter turnout.

Table 1 presents the frequency of certain registration regimes, by the total of 539 state-years that are studied. Because there are so few states with some regimes, we will focus on the results for election day registration alone, online registration alone, pre-registration alone, and the combination of online registration and pre-registration (both innovations that have been demonstrated to attract young voters (Barreto et al., 2010; Garnett, 2017)), as well as the combination of election day registration, pre-registration and online registration, the highest frequency of three common registration innovations together. This means we are unable to have accurate assessments of the impact of automatic voter registration, since this innovation is new and not implemented by itself. Nonetheless, it is important to include in the model as a variable that, in combination with other registration innovations, may influence the registration and turnout of individuals in the state.

[Table 1 here]

Secondly, while many articles on registration laws only consider their impact on turnout, this article considers the impact of these registration innovations on both registration and turnout at the individual level. These variables are measured using survey data from the Current Population Survey (CPS) Voting and Registration Supplement, which was conducted after each midterm and Presidential election (see Appendix A). The survey asks respondents whether they voted, and if they did not vote, whether they were registered.⁵ This dataset assumes citizens to be registered if they had voted. The Current Population Survey remains the best available source of information on registration, since studies that have considered the accuracy of official registration lists estimate between 9-12% of registrations on these lists are inaccurate. (Ansolabehere & Hersh, 2010; The Pew Center on the States, 2012). Furthermore, official registration lists do not provide information on all the socio-demographic variables of interest in all 50 states. It is important to note that the self-reporting of registration and voter turnout may be influenced by social desirability or by the higher level of engagement among those willing to spend the time to respond to the survey. It is also possible that the accuracy of the Current Population Survey's turnout rates has diminished over time (Hur & Achen, 2013). However, the Current Population Survey is not explicitly a political survey, and is conducted by the United States Census Bureau, so it is more likely to have respondents who would not be interested in completing a survey about political issues.

Method

Models were estimated with state and year fixed effects. This controls for the differences both between elections, such as the candidates, issues or the competitiveness of the race, and between states, such as varying social and political climates. Additionally, the survey weights are adjusted to account for survey non-response with regard to self-reported turnout rates (Hur and Achen 2013). In most cases, the reference category for each of these voter registration reforms is states that follow the standards of the National Voter Registration Act without any additional reforms.

⁵ In this article, voters who responded they didn't recall or refused to answer whether they had turned out to vote were coded as missing. In some studies, these voters are marked as having not voted (Burden et al., 2014; Holbein & Hillygus, 2015). The results were not significantly different when this alternative coding of turnout was used.

Individual-level control variables that have been previously demonstrated to impact registration and voter turnout are included. These are: gender, age, education, minority status and mobility. Alvarez and colleagues (2011) define the “canonical model” of turnout using CPS data as including terms for age and age-squared, education and education-squared, income, residence in a southern state, and being non-white. Like Burden and colleagues (2014) we adopt this model with some additional variables included in our analysis.

The impact of race in the United States is often related to other socio-economic variables, but it has also been related to group identity, turnout traditions, and group mobilization (Leighley & Vedlitz, 1999; Verba, Schlozman, Brady, & Nie, 1993) and is commonly included as an individual-level correlate of voter turnout. We include dichotomous variables for the following racial and ethnic groups: white non-Latino, Black non-Latino, Latino, and all other groups.

We also include residential mobility. Voters who are highly mobile, such as those who do not own their own home, will be required to change their registration information or re-register each time they move (Hansen, 2016; Highton, 2000). Research has demonstrated that this factor, more than other socio-demographic factors, can explain lower turnout among high-mobility voters (Squire, Wolfinger, & Glass, 1987).

Last, we report the state-level fixed effect for North Dakota because this state uniquely does not have official voter registration (Burden et al. 2014).

Results

Table 2 presents the results of the models predicting the impact of registration regimes on voter registration and turnout in the United States on the entire population of respondents (Models 1 and 2), and just for 18-22 year-olds (Models 3 and 4).

[Table 2]

Most of the control variables have the predicted effects on registration and voting. Age, education, income and residence length all have the expected positive impact on registration and voting, and residence in a southern state was negative. There were some surprising findings as well. That black respondents are more likely to be registered and vote in these data is reflective of the racial gap in voting diminishing over time (Leighley and Nagler 2014).

Election Day Registration

Election day registration, when implemented alone, has a negative relationship with the likelihood of a voter being registered. When election day registration is in place, alone or with other innovations (with the exception of with pre-registration only), the estimate is negative and statistically significant. This indicates that being able to register at the polls does not necessarily mean that more of the population will be registered to vote overall (even after the election). This may be the case because those who do not end up voting will have little incentive to be registered, whereas those who must register in advance are registered even if they decide not to turn out to vote. However, it is important to note that the magnitude of this negative relationship is less than one percentage point.

For voter turnout, the impact of election day registration alone is positive; election day registration has a positive impact on the propensity to vote. The model suggests a 2-percentage point increase in the probability of voting when election day registration only is permitted in the

state.⁶ These results support earlier suggestions by authors such as Ansolabehere and Konisky (2006) and Knee and Green (2011) that the impact of election day registration on turnout may be weaker than initially thought. One possible explanation is that as more states adopt election day registration, the impact of the law may decrease, since the early adopters of these types of innovations may already be more progressive in terms of other laws relating to the voting process, increasing registration and turnout rates.

Online Registration

When looking at online registration, on the other hand, there is stronger evidence of a positive effect for registration. That said, the effect is modest: the marginal effect of online registration implemented alone indicates an improvement in registration of about 2-percentage points. This suggests that online registration, which has expanded at a quick pace in recent years, is a promising avenue for improvement to the accuracy of registration rolls.

The results for turnout are also encouraging. The model indicates that there is a 2-percentage point increase in the probability of voting where online registration is present. This suggests that improvements in registration are also felt at the ballot box, reflecting findings from other scholars that being registered can predict voter turnout (Erikson, 1981).

Pre-Registration

Turning to the impact of pre-registration, the results from models 1 and 2 suggest that the impact is positive on both registration and turnout. However, for this variable, we are most interested in the impact of pre-registration on 18-22-year olds only, which are reported in Models 3 and 4 of Table 2. The results for both registration and voter turnout are promising. The youngest voters with access to pre-registration were about 5-percentage points more likely to be registered and about 6-percentage points more likely to vote. The magnitude of this effect is comparable to the most conservative estimates of the impact of pre-registration on turnout (they estimate it is between 2-17 percentage points, depending on the modelling strategy used) found by Holbein and Hillygus (2015) for the 2000-2012 time period. This presents additional evidence of how promising pre-registration can be for the participation of young voters.

One important robustness check is tested for pre-registration. Unlike other laws that are experienced by the entire population immediately after they come into effect, the impact of pre-registration will only be felt one or two years later when the pre-registered citizens are eligible to vote and are surveyed (the surveys employed in this article only have respondents over the age of 18). Because elections are held every two years, the laws implemented two years previously should have an impact on the population two years later. Thus, a lagged variable considering whether pre-registration was available two years prior to the election studied is considered in Appendix B. With regard to the sign and significance of variables in the lagged preregistration, we find one significant difference, that individual registration is now negative. However, this affects the results only in the year the innovation is introduced.

Automatic Voter Registration

No state has adopted automatic registration in isolation and thus we can only make observations about the joint effects of multiple reforms. We are further limited by only observing

⁶ All marginal effects were estimated while keeping other variables at their observed values (Hanmer & Ozan Kalkan, 2013).

automatic registration in the 2016 general election. These reservations notwithstanding, we do find significant effects associated with automatic voter registration in the 2016 election. Perhaps the clearest observation is California, the only case to have all four reforms enacted in 2016. Perhaps unsurprisingly, we find the likelihood of registering and then voting is more likely for all observations, including the 18-22 year-olds subset in Models 3 and 4. This effect is also found among the states that have enacted automatic registration in conjunction with online registration and pre-registration.

Registration Regimes

Turning to combinations of registration innovations together, there are enough cases to consider two combinations. First, pre-registration and online registration together, and secondly election day registration, online registration and pre-registration together.

We first consider the implementation of online registration and pre-registration together. These innovations are often considered to be some of the best ways to encourage youth registration. Models 3 and 4 demonstrate that together, online registration and pre-registration have a 10-percentage point impact on youth turnout/registration. This is higher than the marginal effect for pre-registration or online registration alone. This suggests that the implementation of both online registration and pre-registration together may be the most promising way to increase youth voter turnout, as serious concern of many scholars and commentators.

Turning to the most common combination of registration strategies implemented together, namely election day registration, online registration and pre-registration, there is a small, but statistically significant, positive impact on individual-level registration. This suggests that these innovations can work together to improve registration. Even though election day registration, when implemented alone, has a negative impact on registration, when implemented alongside other innovations, this impact can become positive. The results are likewise positive and significant for voter turnout.

Conclusions

Registration innovations are designed to improve registration rates and accuracy, increase turnout and allow election administrators to better allocate resources and reach out to potential voters. But do they actually improve registration and turnout? This article considers this question by tracking four registration innovations – election day registration, online registration, pre-registration, and automatic voter registration– between 1996-2016. By testing the impact over this 20-year time span, we are able to update the assessments of these registration innovations made by other scholars in past years and test the impact of new procedures that have only recently been implemented in the American context.

This article makes a number of unique contributions to our practical and scholarly understanding of voter registration in the United States. Firstly, this article considers the impact of registration innovations on registration, as well turnout. In many previous studies, only turnout is considered as the major dependent variable in evaluations of election laws. However, registration rates are also an important indicator of the success of these registration laws, since both voters and election administrators benefit from more accurate voter registers. Additionally, many previous studies that consider the impact of registration laws on turnout assume that these innovations improve registration, which in turn improves turnout. However, the results of this article demonstrate that the impact on registration and turnout is not necessarily the same.

Second, it tests the impact of online registration and automatic voter registration, both new innovations tested by a number of American states. Online registration in particular has expanded greatly in recent years but has thus far received no empirical testing. The empirical results demonstrate that many of these registration innovations have a small but positive impact on registration and turnout in the United States. Online registration and pre-registration, in particular, are consistently associated with individual-level registration and turnout. As expected, election day registration does have a negative effect on individual registration rates. There is little incentive to be registered before election day if you can register at the polls. However, election day registration does positively impact turnout, though to a magnitude smaller than in many previous studies. Since automatic voter registration was only adopted by four states for the 2016 election, the results remain inconclusive.

Finally, this article tests the impact of registration regimes, or the unique combination of registration laws working together. The joint effects of more than one reform are more complex to summarize, as there are many combinations of reforms that can be adopted together. However, one promising finding for youth registration and turnout is that online registration and pre-registration have a 10-percentage point impact on both turnout and registration. This suggests that registration innovations may be a promising way to increase the participation of youth at the polls.

In sum, this article demonstrates that registration laws can have an important positive impact on both individual registration and turnout. This is promising for both scholars interested in better understanding the drivers of registration and turnout, as well as policymakers who are interested in improving voter turnout.

Figure 1: Types of Registration Innovations

Length of Time to Register	<ul style="list-style-type: none">• Closing dates closer to the election day• Election Day Registration
Opportunities to Register	<ul style="list-style-type: none">• ‘Motor voter’ laws (DMV registrations)• Online Registration• Pre-registration of youth• Registration campaigns and public outreach
List Management	<ul style="list-style-type: none">• List centralization or decentralization• List sharing with other government departments and agencies• Automatic Voter Registration• Frequency of purging, ‘motor voter’ laws (purging)• Online Registration

Figure 2: Timeline of Registration Innovations across US States (1996-2016)

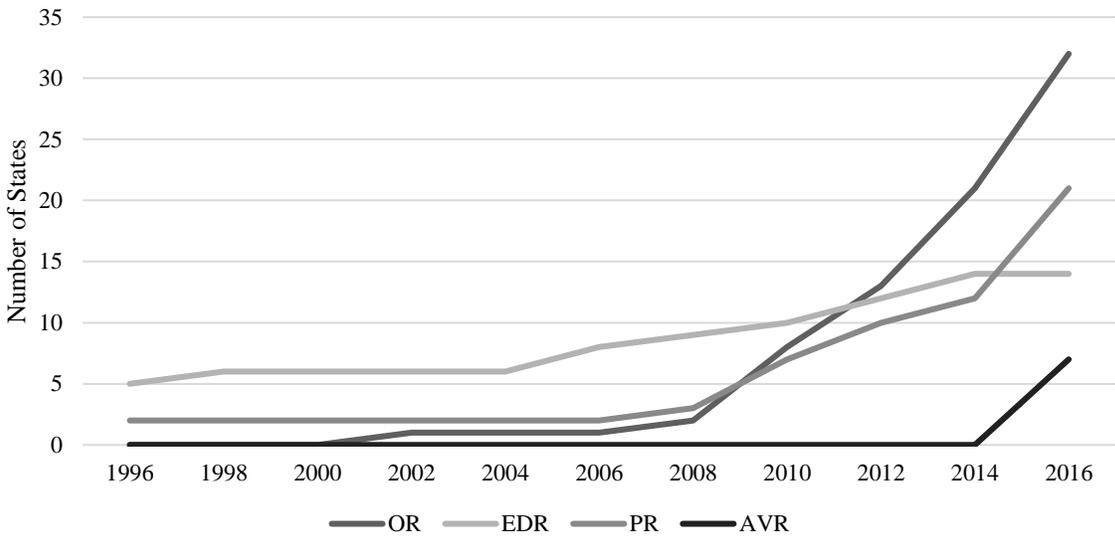


Table 1: Frequency of Voter Registration Regimes (1996-2016)

Registration Regime	Number of State-Years
NVRA (baseline)	349
Election Day Registration	74
Online Registration	35
Pre-Registration	45
Automatic Voter Registration	None
EDR and PR	3
EDR and OR	7
EDR and AVR	None
PR and OR	14
PR and AVR	None
OR and AVR	1
EDR PR and OR	6
EDR OR and AVR	1
EDR PR and AVR	None
PR OR and AVR	3
EDR, OR, PR, and AVR	1

Table 2: Impact of Registration Innovations on Individual Registration and Voting Status

	All Observations		18-22 Year-olds Only	
	Registered	Voted	Registered	Voted
Election Day Registration (EDR)	-0.02*** (0.00)	0.11*** (0.00)	0.42*** (0.00)	0.40*** (0.00)
Pre-Registration (PR)	0.05*** (0.00)	0.21*** (0.00)	0.23*** (0.00)	0.33*** (0.00)
Online Registration (OR)	0.14*** (0.00)	0.15*** (0.00)	0.07*** (0.00)	-0.04*** (0.00)
Online and Pre-registration	0.04*** (0.00)	0.08*** (0.00)	0.48*** (0.00)	0.39*** (0.00)
Online and EDR	0.03*** (0.00)	0.02*** (0.00)	0.15*** (0.00)	0.05*** (0.00)
EDR and Pre-registration	-0.27*** (0.00)	0.22*** (0.00)	0.33*** (0.00)	0.46*** (0.01)
Online, PR, and AVR	0.09*** (0.00)	0.08*** (0.00)	0.12*** (0.00)	0.05*** (0.00)
Online, EDR, and PR	0.05*** (0.00)	0.01*** (0.00)	0.10*** (0.00)	0.09*** (0.00)
EDR, PR, OR, and AVR	0.01*** (0.00)	0.06*** (0.00)	0.05*** (0.00)	0.18*** (0.00)
Female	0.19*** (0.00)	0.11*** (0.00)	0.16*** (0.00)	0.15*** (0.00)
Age	0.03*** (0.00)	0.05*** (0.00)	0.15*** (0.00)	0.05*** (0.00)
Age ²	-0.00*** (0.00)	-0.00*** (0.00)		
Education	0.88*** (0.00)	0.86*** (0.00)	1.19*** (0.00)	0.88*** (0.00)
Education ²	-0.07*** (0.00)	-0.07*** (0.00)	-0.12*** (0.00)	-0.07*** (0.00)
Relative Income	0.06*** (0.00)	0.07*** (0.00)	0.02*** (0.00)	0.04*** (0.00)
White	-0.39*** (0.00)	-0.51*** (0.00)	-0.17*** (0.00)	-0.43*** (0.00)
Latino	-0.23*** (0.00)	-0.23*** (0.00)	-0.42*** (0.00)	-0.38*** (0.00)
Other	-1.09*** (0.00)	-1.24*** (0.00)	-0.51*** (0.00)	-0.75*** (0.00)
1-2 Years at Current Address	0.24*** (0.00)	0.33*** (0.00)	0.06*** (0.00)	0.29*** (0.00)
3-4 Years at Current Address	0.48*** (0.00)	0.56*** (0.00)	0.27*** (0.00)	0.53*** (0.00)
More than 5 Years at Current Address	0.76***	0.87***	0.44***	0.64***

	(0.00)	(0.00)	(0.00)	(0.00)
Residence in a Southern State	-0.83***	-0.87***	-0.13***	-0.56***
	(0.00)	(0.00)	(0.00)	(0.00)
Residence in North Dakota	0.36***	-0.36***	0.83***	-0.03***
	(0.00)	(0.00)	(0.00)	(0.00)
Constant	-2.14***	-3.59***	-4.79***	-3.46***
	(0.00)	(0.00)	(0.00)	(0.00)
State Fixed Effects	YES	YES	YES	YES
Year Fixed Effects	YES	YES	YES	YES
Observations	793,882	803,948	60,554	62,527
Pseudo R ²	0.14	0.19	0.10	0.14

Notes: Cells report logit coefficients. The survey data is weighted to account for survey non-response with regard to self-reported voting (Hur and Achen 2013). Black respondents are the reference race/ethnicity category. Respondents living at their current address for less than a year are the reference category for residence length variables. Standard errors in parentheses. *** p<0.001, ** p<0.01, * p<0.05

Appendix A: Data Sources

Registration Innovations	
Election Day Registration	0 – Closing Dates 1 – Election Day Registration
Online Registration	0 – Not facilitated by online platform 1 – Facilitated by online platform
Automatic Voter Registration	0 – No 1 – Yes
Pre-registration	0 – No (includes states that only allow for those who will be 18 before election day to pre-register) 1 – Yes
Socio-Demographic Variables (From CPS)	
Female	0 = Male 1 = Female
Age	The Respondent's age in years (18-90)
Race	1 – White, non-Latino 2 – Black, non-Latino 3 – Latino 4 - Other
Education	1 – Less than high school diploma 2 – High school diploma 3 – Some college but no degree 4 – Associate's degree 5 – College degree 6 – Master's, professional, or doctoral degree
Residence Length	1 - Less than one year at current address 2 – 1-2 years at current address 3 – 3-4 years at current address 4 – More than 5 years at current address
Voting and Registration (post-election) (From CPS)	
Self-reported Voter Turnout	0 = Did not vote 1 = Voted
Self-reported Registration Status	0 = Not Registered 1 = Registered (assumed if respondent had voted)
State and Election Variables (Variety of Sources)	
South	0 = Not residing in a Southern state 1 = Residing in AL, AR, DE, FL, GA, KY, LA, MD, MS, NC, OK, SC, TN, TX, VA, or WV

Data Sources:

- National Council of State Legislatures: <http://www.ncsl.org/research/elections-and-campaigns.aspx>
- United States Census Bureau, Current Population Survey, Voting and Registration Supplements: <http://www.census.gov/topics/public-sector/voting.html>
- U.S. Census Bureau defines the Southern region of the United States: https://www2.census.gov/geo/pdfs/maps-data/maps/reference/us_regdiv.pdf

Appendix B: Lagged Pre-Registration (Robustness Check)

Unlike other laws that are experienced by the entire population immediately after they come into effect, the impact of pre-registration may only be felt one or two years later when the pre-registered citizens are eligible to vote. Because elections are held every two years, the laws implemented two years previously should have an impact on the population two years later. Thus, a lagged variable considering whether pre-registration was available two years prior to the election studied is used as a robustness check.

VARIABLES	Registered	Voted
Election Day Registration	-0.02*** (0.00)	0.12*** (0.00)
Pre-registration	0.04*** (0.00)	0.18*** (0.00)
Online Registration	0.13*** (0.00)	0.15*** (0.00)
EDR & PR	-0.30*** (0.00)	0.13*** (0.00)
EDR & OR	0.02*** (0.00)	0.10*** (0.00)
PR & OR	0.05*** (0.00)	0.10*** (0.00)
OR & Automatic Registration	-0.02*** (0.00)	-0.26*** (0.00)
EDR, OR, & PR	0.05*** (0.00)	-0.00 (0.00)
EDR, OR, & AVR	0.04*** (0.00)	0.12*** (0.00)
OR, PR, & AVR	0.09*** (0.00)	0.09*** (0.00)
EDR, OR, PR, & AVR	0.01*** (0.00)	0.08*** (0.00)
Female	0.19*** (0.00)	0.11*** (0.00)
Age	0.03*** (0.00)	0.05*** (0.00)
Age^2	-0.00*** (0.00)	-0.00*** (0.00)
Education	0.88*** (0.00)	0.86*** (0.00)
Education^2	-0.07*** (0.00)	-0.07*** (0.00)
Relative Income	0.06*** (0.00)	0.07*** (0.00)
White	-0.39*** (0.00)	-0.51*** (0.00)
Latino	-0.23*** (0.00)	-0.23*** (0.00)

Other	-1.09***	-1.24***
	(0.00)	(0.00)
1-2 Years at Current Address	0.24***	0.33***
	(0.00)	(0.00)
3-4 Years at Current Address	0.48***	0.56***
	(0.00)	(0.00)
More than 5 Years at Current Address	0.76***	0.87***
	(0.00)	(0.00)
Residence in a Southern State	-0.83***	-0.87***
	(0.00)	(0.00)
Residence in North Dakota	0.36***	-0.36***
	(0.00)	(0.00)
Constant	-2.14***	-3.59***
	(0.00)	(0.00)
<hr/>		
State FE	YES	YES
Year FE	YES	YES
Observations	793,882	803,948
Pseudo R2	0.14	0.19

*Notes: Black is the excluded race/ethnicity category. Less than 1 year at current address is excluded residence time category. Standard errors in parentheses. *** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$*

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