MODELING THE EFFECT OF PHOTO IDENTIFICATION
REQUIREMENTS ON VOTER TURNOUT

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ABSTRACT

Voter identification laws have become a highly contentious topic in American politics as society debates how to balance safeguarding the integrity of our elections with citizen participation. This thesis evaluates the claim made by voter identification requirement critics that increasingly stringent requirements lower voter turnout, particularly among certain demographic groups that may have a more difficult time meeting voter identification requirements. Specifically, this paper analyzes the effects that various levels of voter identification requirements may have on voter turnout, hypothesizing that more stringent voter identification requirements, such as requiring photo identification at the polls, are associated with lower voter turnout. This research uses individual level Current Population Survey (CPS) data for the 2004 through 2010 congressional and presidential elections, as well as compiled state election information. As cultural and other state level differences that may potentially impact voter turnout exist between states, such as the availability of mail-in voting, early voting, or same day registration, the analysis specifies a logistic state and year fixed-effects model of voter turnout with additional controls for individual characteristics. This study's primary finding is that photo identification requirements disproportionately impact young voters between the ages of 18 and 24, decreasing the probability that they turn out to vote.

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INTRODUCTION

The right to vote and the integrity of electoral outcomes are both central to the basic

functioning and ideals of representative democracy. Without either of these, citizens lack the

ability to hold government officials accountable and there is little reason to expect government

policy will represent "the will of the people." In the United States, citizen participation in

elections determines who is entrusted with the powers and responsibilities of governance.

However, election participation, or voter turnout, requires much more than the right to vote;

citizens also need the capacity, the will, and a reasonable opportunity to do so. In the U.S., each

state has its own laws governing the voting requirements intended to ensure electoral integrity—

laws that may also impact the participation of legitimate voters.

Recently, a batch of hotly contested new state laws requires voters to provide

identification at the polls. From 2003 to 2010, fourteen states[1] added or changed their existing

voter ID laws, the vast majority of which strengthened voter identification (voter ID)

requirements.[2,3] Further, in 2011 alone, twenty of the twenty-three states without prior

requirements proposed legislation requiring voter ID at the polls.[4] The purpose of these laws is

to prevent voter fraud and, thus, ensure electoral integrity. While verifying that voters are the

legally eligible citizens they claim to be is certainly reasonable, critics claim the actual impact of

many voter ID laws, particularly those requiring specific forms of photo identification, extends

far beyond preventing illegitimate votes. They contend that the additional hurdles to voting

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[1] Alabama, Colorado, Montana, North Dakota, South Dakota, Georgia (twice), Washington, Indiana, New Mexico (twice), Ohio, Utah, Idaho, Oklahoma, and Missouri.

[2] References are divided into two categories, academic papers and articles, which are included at the end of this paper, and non-academic papers which are cited with footnotes.

[3] National Conference of State Legislatures. (December 12, 2011). Voter Identification Requirements. Retrieved from http://www.ncsl.org/default.aspx?tabid=16602.

[4] *Ibid.*

caused by these laws impact citizens disproportionately and prevent or dissuade legitimate voters from successfully casting a ballot.

BACKGROUND

State Voter Identification Requirements Vary

It is important to recognize that voter ID law stringency varies greatly by state. As of September 2011, seven states have passed legislation requiring voters to provide photo identification at the polls.[5] Officials in seven other states ask voters for photo identification at the polls, but allow citizens to vote without photo ID if they meet other criteria. An additional sixteen states require a less stringent form of voter ID at the polls, such as a bank statement, but do not require photo ID, while the remainder of states have no voter ID requirements.[6] Allowing specific forms of government issued photo ID only is generally considered to be the strictest type of voter ID requirement, due to fewer identification options available at the polls and challenges presented by supporting documents that are potentially missing and needed to obtain such an ID, such as a birth certificate; the time involved in obtaining the identification; and the monetary cost involved in obtaining the appropriate documents. Further, certain demographic groups may be disproportionately impacted by certain voter ID requirements. In particular, as the percentage of individuals lacking government issued photo ID is greater for certain groups, including minorities, students, low-income voters, and seniors, we can reasonably expect some citizens

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[5] There are some exceptions allowing certain voters to cast a provisional ballot if they can return and provide photo ID within the required time period of the next few days.
[6] National Conference of State Legislatures. (December 12, 2011). Voter Identification Requirements. Retrieved from http://www.ncsl.org/default.aspx?tabid=16602.

within these groups to be disproportionately impacted by certain voter ID requirements.[7] It

stands to reason that if the costs[8] of voting rise, voters who would have otherwise successfully

participated in an election may now be either unwilling or unable to do so. However, many voter

ID proponents disagree, believing instead that the increased costs associated with voter ID

requirements are not steep enough to have a significant impact on legitimate voter turnout.

Potential Tradeoff between Electoral Participation, Integrity, and Confidence?

Assuming that stringent voter ID laws negatively impact voter turnout and that voter

fraud is perceived as a significant problem implies an inherent tradeoff between increased

confidence in our electoral process gained through increasingly stringent voter ID requirements

and a decrease in successful eligible voter participation. However, voter fraud in the United

States remains more of an assertion than a proven problem. The Brennan Center for Justice at

the *New York University School of Law* has analyzed alleged cases of voter fraud made by a

diverse array of organizations and individuals. In general, the Brennan Center found "only a tiny

portion of the claimed illegality" to be substantiated, with the vast remainder "either nothing

more than speculation" or "conclusively debunked."[9] Justin Levitt of the Brennan Center

explains, despite attention grabbing headlines, allegations of substantial voter fraud are often

greatly exaggerated and, rather than ensuring electoral integrity, these laws may actually

disenfranchise eligible voters.[10]

In theory, increased confidence in the electoral process, whether necessary to prevent

fraud or not, may lead to additional electoral participation as faith in electoral integrity increases.

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[7] Brennan Center for Justice. (December 12, 2011). Voter ID. Retrieved from
  http://www.brennancenter.org/content/section/category/voter_id.
[8] Such costs could be monetary or non-monetary.
[9] Justin Levitt. Brennan Center for Justice. (November 9, 2007). The Truth About Voter Fraud. Retrieved from
  http://brennan.3cdn.net/e20e4210db075b482b_wcm6ib0hl.pdf.
[10] *Ibid.*

However, this argument, while theoretically reasonable in some circumstances, seems dubious in the case of the U.S., given the observers involved in the United States' electoral process, the few actually proven instances of voter fraud, the harsh penalties involved if convicted, and the likely need for deliberate and widespread fraud involving many individuals decidedly favoring a particular candidate for the result of an election to be reliably impacted. Still, even if the purportedly adverse impacts of increasingly stringent voter ID requirements do not exist and implementation costs are low, strengthening voter ID laws may be beneficial for society regardless of whether voter fraud is a significant problem, since voter ID laws could reasonably increase citizen confidence in the integrity of our electoral process. However, a study by Ansolabehere and Persily (2008) provides evidence to the contrary. Ansolabehere and Persily (2008) find that perceptions of voter fraud are unrelated to different stringency levels of voter identification requirements and that the probability that a voter turns out on election-day is not related to perceptions of voter fraud, despite prior court assumptions to the contrary and large public belief of at least occasional voter fraud.

If the minimal evidence of actual fraud means voter fraud is truly an insignificant problem, as many critics of voter ID laws claim, understanding the impact of these requirements on legitimate voters may actually be more important than it would be otherwise. After all, if the problem voter ID requirements are intended to address is insignificant, then any adverse impacts on the rights of legitimate voters resulting from these requirements implies such laws may not only be unnecessary, but also counterproductive. This is particularly true if stricter voter identification laws fail to provide additional public confidence in the electoral process or increase participation, as Ansolabehere and Persily (2008) argue. Further, while cost estimates

for implementing photo identification requirements vary widely by state, instigating potentially

unnecessary requirements would still cost millions for some states to implement.[11]

Voter Identification Requirements and Turnout

A few econometric studies have attempted to analyze the impact of different voter ID

requirements on voter turnout. However, due to the recent nature of many of the most stringent

voter ID requirements, many of these studies have not incorporated the increasingly frequent

changes in state laws that were implemented for the 2008 and 2010 elections as part of their

analysis, nor have they been able to use the new data these election cycles provide. There is still

much debate over the impact various voter ID laws have on voter turnout and whether certain

demographic groups are disproportionately impacted. This controversy has resulted in multiple

challenges in the courtroom, intense political debates, and several governor vetoes. In addition,

as a result of the Voting Rights Act, several states have had to wait for Department of Justice

approval for their newest voter ID laws to ensure historically disenfranchised populations are not

disproportionately negatively impacted, including Texas, South Carolina, and Alabama.[12] South

Carolina and Texas voter ID laws were recently rejected by the Justice Department on the

grounds that they were likely to discriminate against black and Hispanic voters, respectively,

based on analyses of different rates of qualifying identification held by minority voters.[13]

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[11] Sean Greene. electionlineWeekly. (March 17, 2011) Debate over photo ID at the polls shifts to costs. Calculation of associated costs varies greatly from state to state. Retrieved from http://www.pewcenteronthestates.org/uploadedFiles/wwwpewcenteronthestatesorg/Reports/Electionline_Reports/electionlineWeekly03.17.11.pdf.

[12] National Conference of State Legislatures. (December 12, 2011). Voter Identification Requirements. Retrieved from http://www.ncsl.org/default.aspx?tabid=16602.

[13] Sari Horwitz. The Washington Post. (March 12, 2012) Justice Department Bars Texas Voter ID Law. Retrieved from http://www.washingtonpost.com/politics/justice-department-bars-texas-voter-id-law/2012/03/12/gIQAUzgW7R_story.html.

This paper evaluates the effects of different levels of voter identification requirements on voter turnout, with a focus on the controversial photo identification requirements. This author hypothesizes that relatively more stringent voter identification requirements, such as requiring photo identification, are associated with lower voter turnout for certain demographic groups. The proceeding analysis tests this hypothesis to help inform the ongoing debate over the impact of photo identification requirements on voter turnout.

LITERATURE REVIEW

Due to the recent implementation of the most controversial photo identification requirements, very few studies have analyzed the effect of these requirements on voter turnout in federal elections. Only five years ago, during a critique of the anecdotal evidence and "common sense" arguments in favor of photo ID requirements, Overton (2006) noted the lack of empirical studies and called on policymakers to wait for, and judges to demand, better statistical analysis before consenting to requirements that might disenfranchise legitimate voters. Overton asserted that, according to the best evidence available at the time and due to the lack of empirical findings of substantial voter fraud, cost benefit analysis suggests that photo ID requirements would cause more harm than good (Overton 2006). As the literature on this topic has expanded in the last half decade, researchers have found mixed evidence regarding the effects of voter identification requirements and other state laws on voter turnout and whether certain populations are disproportionately impacted by these regulations.

Rational Choice and Political Participation

Theoretically, there are good reasons to hypothesize that stringent voter identification laws reduce voter turnout. Leighley (1995) discusses several theoretical frameworks for

understanding political participation. A general tenet of the rational choice model of political participation, where individuals weigh the relative costs and benefits of participation, implies that increasing barriers to voting leads to decreased voter turnout (Leighley, 1995; Gronke et al., 2008). Gomez (2008) notes this implication remains valid even within the other two major political participation frameworks Leighley (1995) discusses, the socioeconomic status and mobilization models of political participation. Findings in several non-voter identification related studies provide support to the assertion that increasing or decreasing the costs of voting will impact turnout. For instance, even non-regulatory related costs have been shown to impact turnout, with rain or snow resulting in decreased voter turnout (Gomez et al., 2007).

Barriers to Voting

In the regulatory realm, Rosenstone and Wolfinger (1978) find restrictive registration laws have a substantial impact on voter turnout with uneven impacts across the voting population and disproportionately large impacts on the least educated voters. However, Nagler (1991) and Huang and Shields (2000) disagree with Rosenstone and Wolfinger's findings due to Rosenstone and Wolfinger's analysis methods. Nagler (1991) argues that strict registration laws do not disproportionately deter less educated from voting and Huang and Shields (2000) argue that that early voter registration closing dates disproportionately impact those with moderate education levels. More recently, Highton (2007) concluded that the disproportionate impact of these registration requirements on the turnout of less educated voters varies by state, where states with fewer registration costs have relatively higher turnout among less educated voters. However, Highton (2007) also finds that these registration requirements do not appear to be the primary reason more affluent and more educated individuals have higher turnout rates. Finally, Brians

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and Grofman (2001) also find election-day registration to be associated with higher voter turnout.

Despite evidence that barriers to voting decrease voter turnout, many studies have found that some of these barriers have uneven impacts on different groups of potential voters (Rosenstone, Wolfinger, 1978; Highton, 2007; Brians, Grofman, 2001). A study by Brown and Wedeking (2006) finds that, despite multiple studies which find a link between registration and voter turnout, the National Voter Registration Act and motor voter registration implementation appear to have increased the number of registered voters while weakening the relationship between registration and turnout. As Brown and Wedeking note, this weakening relationship may occur as many citizens who remain less likely to vote despite easier registration become a larger share of the pool of registered voters.

While registration barriers in some states certainly have an impact on voter turnout, this study examines the effect of voter identification requirements at the polls. Gronke et al. (2008) claim that making voting more convenient by allowing forms of voting, such as early voting or unrestrictive absentee balloting, has a modest, but positive impact on turnout. Multiple studies have found that voting by mail, such as Oregon's implementation of an all vote-by-mail system, has a strong positive effect on voter turnout (Southwell, Burchett 2000; Richey, 2008). However, Brown and Wedeking (2006) raise an interesting point that, despite reduced barriers to voting, many individuals remain uninterested in voting and are not persuaded by reductions in voting barriers. This concept can also be applied with respect to increasing voting barriers, suggesting that rising barriers resulting from newly implemented voter identification requirements may not dissuade those in the least likely to vote demographic groups from voting if those individuals remain sufficiently intent on voting.

Voter Identification Requirements

While studies of voter identification laws primarily focus on the effect on voter turnout, Logan and Darrah (2008) evaluated voter ID requirements and find broader negative effects on civic participation. The authors concluded that the effects of voter ID requirements extend beyond election-day and result in decreases in immigrant naturalization rates, voter registration, and voting, with blacks and Hispanics disproportionately impacted. While the analysis contained in this study does not attempt to identify voter ID requirement effects beyond their potential impact on turnout of registered voters, if Logan and Darrah (2008) are correct, readers should be cognizant that this and similar studies may not provide a full picture of the effect of voter identification requirements.

Barreto, Nuño, and Sanchez (2007a) performed one of the earlier studies to investigate whether certain groups may be disproportionately disenfranchised by photo identification requirements. Using 2006 exit polls from California, Washington, and New Mexico, the authors conclude that, among actual voters, minority voters are substantially more likely to be disproportionately impacted by voter identification requirements as they are less likely to be able to provide specific or multiple forms of identification. In an additional survey of registered voters in Indiana, Barreto, Nuño, and Sanchez (2007b) find that White, college educated, high income, and middle-age voters were more likely to have the identification meeting Indiana's strict photo identification requirements. Hood and Bullock (2007) have similar findings from analyzing registered voters in Georgia, finding that African Americans, Hispanics, and the elderly are less likely to have photo identification from the DMV. Barreto, Nuno, and Sanchez (2007a; 2007b) further assert that the individuals most likely to be impacted by voter identification laws are more likely to be democrats, a claim which Hood and Bullock (2007)

support, providing some backing to claims that voter identification requirements have not just demographic, but potentially partisan, bias.

Of course, if minority voters who currently lack identification are motivated by voting requirements to obtain the necessary identification prior the election, minority voters may not be disproportionately impacted. Alternatively, individuals may not obtain the necessary identification and, as Vercellotti and Anderson (2006) point out, may decide to stay away from the polls knowing they will not be permitted to vote. Thus, while the fact that the proportion of individuals with valid identification varies between groups is certainly suggestive, it remains important to analyze also changes in actual turnout. A Gomez (2008) study contradicts findings of partisan bias, finding no substantial partisan effects using county turnout data for the 2000 and 2004 presidential election cycles. However, his multilevel model of voter turnout does find small effects of voter identification rules on turnout that appear to work through minority groups and the less affluent (Gomez, 2008).

Vercellotti and Anderson (2006) performed one of the first studies on the impact of voter identification on turnout finding that turnout varies with voter identification requirements. Analyzing registered voters in the 2004 presidential election with state and county level data and individual-level data from the Current Population Survey, the authors find negative effects overall and disproportionate large effects on minority groups. Muhlhausen and Sikich (2007), at the Heritage Foudation, re-created Vercellotti and Anderson's (2006) study with what they argued was an improved model and corrections for misclassified laws, finding that voter identification laws have virtually no impact on voter turnout. However, as Milyo (2007), Gomez (2008), and Alvarez, Bailey, and Katz (2008) all point out, Vercellotti and Anderson's (and

Mulhausen and Sikich's) use of only a single cross-section of data limits the reliability of their findings.

Mycoff, Wagner, and Wilson (2007) used aggregate and individual level data to analyze four cross-sections, the 2000, 2002, 2004, and 2006 elections, and find that stricter voting requirements do not impact voter turnout. Mycoff, Wagner, and Wilson's (2007) analysis suggests that researchers should give additional focus to political interest, social issues, and the type of election as drivers of voter turnout. However, Alvarez, Bailey, and Katz (2008) note the Mycoff, Wagner, and Wilson (2007) study analyzes each of the four elections individually and, as a result, may fail to identify effects of changes in voter identification requirements within states. Alvarez, Bailey, and Katz (2008) also critique the Mycoff, Wagner, and Wilson (2007) study for using National Election Study data with smaller samples and coverage than the Current Population Survey, however, they fail to point out that the Mycoff, Wagner, and Wilson study required party identification and political interest variables not present in the Current Population Study. Mycoff, Wagner, and Wilson (2009) subsequently performed a study using data from the 2006 Cooperative Congressional Election Study and find similar results to their prior study, arguing that political interest, social issues, and the type of election would decrease any potential effects on voter turnout caused by stringent voter identification rules.

Intriguingly, in a natural experiment pre and post-implementation of Indian's photo identification requirements using data from the 2002 and 2006 midterm elections, Milyo (2007) finds that photo identification requirements actually increase county-level turnout. Milyo (2007) also did not find consistent evidence that less educated, less affluent, minority, or older voters were disproportionately impacted by the photo identification requirements. However, as Alvarez, Bailey, and Katz (2008) note, studies relying on aggregated data can fall prey to

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ecological fallacy, leading to incorrect conclusions about subgroups within the aggregated data. Furthermore, the use of only two elections in a single state does not adequately control for non-demographic factors that may impact turnout in those two particular election years.

Alvarez, Bailey, and Katz (2008) make an important development in analyzing voter identification requirements with a model recognizing the ordinal nature of state law stringency among the states. Indeed, voter identification requirements vary greatly among the states and, as a result, an analysis that incorporates the theoretical level of stringency of each requirement may be particularly important to identifying any effects if low stringency requirements do not substantially differ from a lack of any voter identification requirements. Furthermore, this concept may be useful in comparing among the different types of voter identification requirements. As background, I list the ordinal scale created by Alvarez, Bailey, and Katz (2008) below.

1. "Voter must state his/her name.

2. Voter must sign his/her name in a poll-book.

3. Voter must sign his/her name in a poll-book and it must match a signature on file.

4. Voter is requested to present proof of identification or voter registration card.

5. Voter must present proof of identification or voter registration card.

6. Voter must present proof of identification and his/her signature must match the signature on the identification provided.

7. Voter is requested to present photo identification.

8. Voter is required to present photo identification."

In their multilevel study using individual level data from the Current Population Survey data for 2000, 2002, 2004, and 2006, Alvarez, Bailey, and Katz (2008) find that, while effects of

voter identification requirements fail to show up in aggregated data, the strictest forms of voter identification requirements negatively impact voter turnout. However, this study, similar to some other studies in the literature, compares data before and after the implementation of the Help America Vote Act, passed in 2002 and was first implemented in 2004. The Help America Vote Act, impacted election administration procedures nationwide, including allowing certain voters to cast provisional ballots. While its effect on turnout may or may not be substantial, this is not ideal for determining the effect of voter identification laws using cross-sectional analysis. In addition, as an increasing number of states have passed and implemented stringent voter identification requirements in recent years, this analysis was unable to incorporate the increased variation in the independent variable of interest, voter identification laws, due to the data available at the time. While Alvarez, Bailey, and Katz's (2008) study represents one of the more influential studies on the effect of voter identification requirements on turnout to date, mixed findings overall result in continued debate over the effect of voter identification requirements.

Erickson and Minnite (2009) critique techniques used by studies employing Current Population Survey data, including techniques in the Alvarez, Bailey, and Katz (2008), Mulhausen and Sikich (2007), and Vercellotti and Anderson (2006) studies. While Erickson and Minnite (2009) are rightly skeptical of analyses that use a single cross-section, they crucially point out that voter identification studies analyzing state level with individual level data must be careful to calculate correct standard errors. Erickson and Minnite (2009) demonstrate that to avoid bias in favor of finding a significant result, studies with this type of research design need to calculate clustered standard errors based on the groups (states) that the individual level observations are in and not simply robust standard errors, unless all state level variables that impact turnout are controlled for. The authors further perform a difference-in-differences

analysis on turnout in the 2002 and 2006 midterm elections using the voter identification requirement stringency scale constructed by and Alvarez, Bailey, and Katz. Erickson and Minnite (2009) conclude that their results, which were substantially impacted by state level turnout differences, and the literature at large using survey data, is insufficient to conclusively determine whether voter identification laws have an adverse impact on voter turnout. The authors suggest that until more elections and states with strict voter identification requirements provide researchers with additional survey data, other forms of analyzing voter identification laws, such as evaluating different rates qualifying identification held by different demographic groups or a differences-in-differences-in-differences design using precinct level aggregate data, may be more informative.

CONCEPTUAL FRAMEWORK AND HYPOTHESIS

The literature review on voter identification requirements demonstrates the ongoing debate regarding the effect of voter identification requirements on turnout and the recent nature of the most stringent requirements requiring photo identification. It stands to reason that more arduous voter identification requirements increase costs associated with voting, particularly for eligible voters who lack qualifying identification or are new to the voting process, and may lead to reduced voter turnout. Alternatively, voter identification requirements may have no statistically discernible impact on voter turnout if eligible voters are sufficiently motivated to vote regardless of potential costs associated with identification requirements. In general, the literature on voter identification laws is divided between studies that find voter identification requirements decrease turnout and studies that fail to find this effect. Yet, it is clear that substantial variation exists between different states' voter identification requirements, and these

differences may be vital to understanding the effects of voter identification requirements as various requirements may have different impacts.

This paper evaluates the effects of the different levels of voter identification requirements on voter turnout, with a focus on the controversial photo identification requirements. This author hypothesizes relatively more stringent voter identification requirements, such as requiring photo identification, will be associated with lower voter turnout. More specifically, due to lower rates of qualifying identification among certain groups and varying levels of experience with the voting process, this author hypothesizes a decrease in turnout among certain demographic groups, such as minorities, young voters, and low-income individuals, who may have a more difficult time meeting more stringent voter identification requirements.

DATA

Primary Data Source

The analysis in this paper uses data from the Current Population Survey (CPS) Voting and Registration supplement, gathered by the U.S. Census Bureau after the 2004, 2006, 2008, and 2010 elections. The CPS is a monthly survey of approximately 50,000 households containing information on labor force characteristics of the U.S. population. The self-reported and proxy-reported data contained in the CPS and the supplement is individual level cross-sectional data gathered as part of the CPS Voting and Registration supplement every other November following the federal elections that occur every two years. It includes a lengthy variable list including variables on voter registration, voting status, employment information, demographic characteristics, and location information. One relevant known issue with CPS survey data is that it has historically over-reported voter turnout, not a surprising finding given

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the self-reported nature of what some citizens consider a civic duty. For example, the 2004 CPS

Voting and Registration supplement reported a 3 percent discrepancy in turnout relative to

official numbers from the House Clerk's office. Despite this, the use of individual level data

helps us to avoid potentially substantial ecological fallacy risks present in interpreting results

using aggregated data. Data on the state laws was manually compiled and categorized based on

information provided by the National Conference on State Legislatures. Further, as this paper is

specifically investigating voter identification barriers at the polls and not barriers in the

registration process, the data used for this analysis will be limited to registered voters.[14]

METHODOLOGY AND MODEL

Method

The analysis in this paper uses individual level CPS data from 2004, 2006, 2008, and

2010 elections, state voter identification election law data, and data regarding which candidates

were on the ballot in a particular state and election year. However, other cultural and non-voter

identification state law differences exist between the states that may potentially impact voter

turnout rates between states, such as the availability of mail-in voting, early voting, or same day

registration. As a result, this analysis employs a logistic state and year fixed-effects model in

order to control for these non-identification related state level differences.

This approach presents a challenge to the analysis by potentially stripping away some

state level variation associated with the different voter identification laws, creating a potential

bias in the analysis against finding a statistically significant result caused by potentially

underestimating the effect of voter identification laws. However, as the potential bias is against

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[14] Data used in the analysis is further limited to exclude individuals with missing data on variables used in the analysis.

finding a statistically significant result instead of in favor of finding a result, the analysis can proceed with the understanding that if a significant effect of voter identification laws is found, the potential effect of this particular bias would likely be to understate the effect. Additionally, as Erickson and Minnite (2009) suggest, the clustered nature of the individuals within states implies that standard errors should be adjusted for clustering in order to guard against inaccurate standard errors and Type I error.

Further, incorporating fixed effects for each election year in addition to fixed effects for each state (through a compilation of dummy variables) further reduces variation among the different state laws over time, which may make identifying an effect challenging. However, without this control, the inability to control for differences between the 2004 and 2008 Presidential election years and differences between the 2006 and 2010 midterm election years could result in substantial bias since voter ID law changes coincide with changes in election years.

As a result of the variation in state voter identification requirements, it is important to employ a voter identification law stringency scale. The substantial variation between different states' voter identification requirements means pooled cross-sectional studies across the states which fail to account for this variation may bias their findings towards not finding a statistically significant effect on voter turnout. This bias may result from several relatively weak voter identification requirements that may not practically differ from having no voter ID requirements. Despite the large number of observations provided by the current population survey, the combination of fixed state and fixed election-year effects[15] provides reason for concern regarding whether significant variation will remain in the sample after categorizing state laws based on the

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[15] Fixed effects modeling was performed using factor variables for each State and Year, with the State of Minnesota and 2004 used as reference points.

scale constructed by Alvarez, Bailey, and Katz (2008). As a result, this study uses an alternative categorization based on data provided by the National Conference of State Legislatures, which classifies states with voter identification laws into the following three categories from the most to the least stringent:[16]

1. Strict Photo ID Requirement – Voters must show a photo ID.

2. Photo ID Requested – Voters are requested to provide a photo ID, but are allowed to vote if they meet other criteria.

3. Non-Photo ID – Voters must show ID, but certain other forms of identification are allowed.

While this scale is not as detailed as the one devised by Alvarez, Bailey, and Katz (2008), it provides distinction for the photo ID laws that critics are particularly concerned about, for both "strict photo ID" and "photo ID requested" requirements. This categorization also consolidates the laws into categories that helps enable statistical analysis on relatively little variation between state laws, which is important given the need for clustered standard errors and the few years of available data with which to analyze the strictest forms of these requirements.

Figure 1 and Figure 2 below display state voter identification requirements for the 2004 and 2010 elections as choropleth maps, with more stringent voter identification requirements displayed as darker shades.

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[16] National Conference of State Legislatures. (December 12, 2011). Voter Identification Requirements. Retrieved from http://www.ncsl.org/default.aspx?tabid=16602.

Figure 1: 2004 State Voter Identification Law Map

Figure 2: 2010 State Voter Identification Law Map

The darker shades in Figure 2 represent a shift towards increasingly stringent voter

identification requirements in several states between 2004 and 2010. Table 1 below depicts the

number of state laws by category for each year in the analysis, based on categorizations by the

National Conference of State Legislatures. A chart displaying the categorization of each specific

state requirement for each year can be found in Table 6 in the appendices.

Category	2004	2006	2008	2010
Strict Photo ID States	0	1	2	2
Photo ID Requested States	4	4	5	6
ID States (non-Photo)	16	18	16	17
No ID Requirement States	29	26	26	24
Total	**49**	**49**	**49**	**49**

Observations from two states, Washington and Oregon, were excluded from the analysis due to the vote by mail laws and the high voting by mail rates in those two states.[18] In Oregon, the entire election is conducted via mail (Richey, 2008). In the State of Washington, by 2010 only one county did not conduct entirely vote-by-mail elections and 89 percent of its voters still voted by mail.[19] In 2011, Washington State's Governor signed a bill making it the second to conduct its elections entirely by mail.[20] As most voters do not go to the polls to vote in Oregon and Washington, and this analysis is evaluating potential barriers to voting at the polls, these states have been excluded from the analysis.

This paper investigates the effects of different voter identification requirements by constructing the logistic model of voter turnout, with fixed effects for each state and year of the analysis, as a function of the categorized level of stringency of state voter identification requirements while controlling for additional factors that may impact voter turnout.

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[17] Includes the District of Columbia and excludes Washington and Oregon. Note that models including Washington and Oregon were run to evaluate the potential impact the exclusion of these two states might have, however, their inclusion did not materially impact this paper's findings.

[18] Models including observations from these states were run to confirm their exclusion did not materially impact the overall findings of this paper.

[19] Katie Schmidt. The News Tribune. (April 5, 2011) Washington to shift to all vote-by-mail elections. Retrieved from http://blog.thenewstribune.com/politics/2011/04/05/washington-to-shift-to-all-vote-by-mail-elections/.

[20] *Ibid.*

Model

The equation below represents the general logistic model with controls that is used for this analysis.

$$\text{logit}[Probability(Voter\ Turnout = 1 \mid Registered\ Voter)]=$$

$$\theta_0 + \theta_1 StateIDLawDummies_{it} + \theta_2 State_i + \theta_2 AgeGroup_i + \theta_3 RaceDummies_i$$

$$+ \theta_4 * Gender_i + \theta_5 ElectionYearDummies_i + \theta_6\ 2008_i * African\ American_i$$

$$+ \theta_7 2008 * Ages18to24Dummy_i + \theta_8 Midterm * StateGovOrSenateRace_i$$

$$+ \theta_9 PresidentialElection * StateGovOrSenateRace_i + \theta_{10} EducationLevel_i$$

$$+ \theta_{11} MaritalStatus_i + \theta_{12} Employment\ Status_i + \theta_{13} IncomeLevelDummy_i$$

$$+ \theta_{14} AddressResidentLessThan1YearDummy_i + u_{it}$$

Dependent Variable and Form

As the dependent variable in this model, whether or not a survey recipient reported voting, contains both a lower and upper bound (voted or did not vote), the regression model is in logistic form in order to represent the probability that an registered individual votes.

Independent Variables

As the ongoing debate surrounding voter identification requirements centers around photo identification requirements, this analysis categorizes state voter identification laws into three dummy variables as listed below and classified by the National Council of State Legislatures. The fourth, and excluded, categorization is for those states which have no voter identification requirements.

1. Strict Photo ID - Voter is required to present photo identification.

2. Photo ID Requested - Voter is requested to present photo identification.

3. Non-Photo ID - Voter is required to provide identification, but photo identification is not requested or required.

Due to the low number of states requiring photo identification be presented, additional models were constructed using a consolidated variable consisting of the two most stringent voter identification law categories used in this analysis. To identify effects on particular demographic groups the analysis also creates numerous interaction variables between the different demographic groups and the variable consolidating the two stringent photo identification categories.

In addition to the voter identification dummy variables, which represent the independent variables of interest, the model also controls for other factors that may impact the voter turnout. This model controls for state of residence by adding dummy variables for every state except Minnesota, the state with the highest turnout in nation.[21] Additional dummy variable controls are included for age, race, gender, education level, income quintile[22], employment status, marital status, and whether or not an individual has lived at the current address for less than a year. Age was categorized into four groups, young voters aged 18-24, young voters aged 25-39, middle aged voters aged 40-64, and elderly voters age 65 and older. Race, or ethnicity, was categorized into groups for whites, blacks, Asians, Hispanics, and a category for multiracial individuals. However, due to the 2008 election when Barack Obama was on the ballot and the presumed turnout affect his candidacy had on African Americans, individuals who reported themselves as black and one other ethnicity, but not more, were categorized as black. Further, an interaction

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[21] Minnesota is also the author's home state.
[22] Income quintile classifications were based on household income quintile information from the U.S. Census Bureau and summarized by the Tax Policy Center for the years 2004-2009. Since household income data from the Current Population Survey is categorized and required rounding as a result, 2009 quintile cutoff points are largely consistent with cutoff points for years 2004 through 2009. Year 2010 data was classified according to 2009 income quintiles.

variable was included for black respondents in 2008. A similar interaction variable was included for respondents age 18-24 in 2008 given Barack Obama's presumed turnout effect on young voters. Education levels were categorized into one of three categories, less than a high school education, a high school education or equivalent, or more than a high school education. Dummy variables were also added to indicate whether or not a Governor or Senator was on the ballot during a midterm election year or during a Presidential election year, as these might be reasonably expected to increase turnout.[23]

It is important to reiterate that since this analysis is evaluating whether voter identification laws lower turnout at the polls and not in the registration process, our sample used for the analysis is limited to registered voters.[24] Table 2 below provides basic demographic information on the resulting sample used for the analysis and number of observations for each year.

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[23] District of Columbia mayoral elections were coded as the equivalent of a governor's election. Respondents coded as married, a dichotomous variable, do not include individuals who are widowed, divorced, or separated.

[24] Respondents coded as being registered to vote include respondents who reported voting and respondents who reported not voting but reported being registered to vote. Respondents who provided no response, refused to answer the registration question, did not know their registration status, or reported not being registered to vote were coded as not being registered to vote and excluded from the analysis.

Table 2: Sample Demographic Information by Year[25]

Variable	2004 Number	2004 Percent	2006 Number	2006 Percent	2008 Number	2008 Percent	2010 Number	2010 Percent	Total Number	Total Percent
Observations	57,883	25.9%	52,744	23.6%	54,305	24.3%	58,772	26.3%	223,704	100.0%
Voted	51,806	89.5%	38,510	73.0%	48,932	90.1%	42,515	72.3%	181,763	81.3%
White	47,175	81.5%	42,878	81.3%	43,155	79.5%	46,698	79.5%	179,906	80.4%
Hispanic	3,013	5.2%	2,949	5.6%	3,447	6.3%	3,644	6.2%	13,053	5.8%
Black	5,310	9.2%	4,636	8.8%	5,227	9.6%	5,800	9.9%	20,973	9.4%
Asian	1,050	1.8%	1,087	2.1%	1,375	2.5%	1,524	2.6%	5,036	2.3%
Multiracial	1,335	2.3%	1,194	2.3%	1,101	2.0%	1,106	1.9%	4,736	2.1%
Age 18-24	5,332	9.2%	4,027	7.6%	5,101	9.4%	4,335	7.4%	18,795	8.4%
Age 25-39	13,963	24.1%	12,013	22.8%	12,853	23.7%	12,596	21.4%	51,425	23.0%
Age 40-64	28,147	48.6%	26,498	50.2%	26,083	48.0%	28,766	48.9%	109,494	48.9%
Age 65 plus	10,444	18.0%	10,211	19.4%	10,272	18.9%	13,077	22.3%	44,004	19.7%
Male	26,797	46.3%	24,447	46.4%	25,197	46.4%	27,262	46.4%	103,703	46.4%
Female	31,086	53.7%	28,297	53.6%	29,108	53.6%	31,510	53.6%	120,001	53.6%

RESULTS

The results of this analysis, as partially displayed in Table 3 on page 27 below and expanded on in Table 4 of the Appendix, are conflicting. Model 1 introduces a logistic regression model of individual voter turnout based solely on state voter identification requirements with fixed effects for each state and year. While the log odds negative of 0.413 for requesting, but not requiring, photo identification is statistically significant in Model 1, neither the more stringent photo identification requirement nor the more basic non-photo identification requirements are statistically significant. Part of this result is counterintuitive. While it is makes sense that non-photo identification requirements might not create sufficient burden to materially

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[25] Table 2 includes demographic information for regression models with 223,704 observations.

differ from no requirements or reduce turnout, it seems unlikely that the requesting photo identification requirements would have a negative effect on turnout while requiring a photo ID does not. However, the relatively few states with the strictest type of photo ID requirements and few elections since these requirements have been implemented might explain this counterintuitive result and the lack of a statistically significant finding.

Model 2 adds the control variables described in the previous section to Model 1, adding controls for age, race, income, education, gender, marital status, whether someone has lived at their address for less than one year, whether a Governor or U.S. Senator was on the ballot in either a midterm or Presidential election year, and for young or African-American voters in 2008. The results in Model 2 for our variables of interest are largely consistent with those in Model 1, with the log odds for requesting, but not requiring, photo identification increasing in magnitude to negative 0.494. Statistically significant coefficients for the control variables in Model 2 are generally directionally consistent with what one would expect, with younger, poorer, unmarried, minority, less educated, unemployed, and voters living at their address for less than one year all less likely to vote, with the exception of the positive logistic coefficient associated with African-American voters. Also in line with expectations, is the effect of having a Governor or U.S. Senator on the ballot in a midterm election year and of being either an African-American or young voter in 2008, all of which are positively associated with the probability that an individual turns out to vote.

To evaluate whether photo identification requirements of either form reduce turnout, Model 3 contains the same control variables as Model 2, but consolidates the two photo identification categories for states that either require or request photo identification at the polls, into a single photo ID category. When consolidated, the coefficient for the two forms of photo

ID requirements is negative; however this coefficient is far from statistically significant at conventional levels.

Model 4 expands upon Model 3, adding interaction terms for the consolidated photo ID category with age, education and race, as these interactions might still identify significant effects on certain demographic groups even if there is no effect on overall voter turnout. Like Model 3, Model 4 does not find photo ID requirements to have a statistically significant effect on overall voter turnout. However, the interaction terms indicate that voter turnout among registered voters aged 18 to 24 in states that require or request voter identification is reduced relative to 18 to 24 year olds in states with less stringent voter identification requirements, with a log odds of negative 0.275 for the interaction term. In addition to disproportionately impacting voters aged 18-24, voters aged 25-39 also appear to be negatively impacted, although to a lesser degree, by photo ID requirements. Model 4 does not identify other demographic groups through which these policies negatively impact turnout, but suggests that Asian voters in particular are more likely to vote in states with photo ID requirements relative to Asian voters in non-photo ID states.[26] Partial results of Models 1 through 4 are displayed below in Table 3.

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[26] Interactions with income level, which were not included in the models discussed in this paper, were very far from statistically significance at conventional levels when added to Model 4.

Table 3: Partial Regression Results Summary[27, 28, 29]

	Model 1 Logit	Model 2 Logit	Model 3 Logit	Model 4 Logit	Model 4 Odds Ratio
Voter ID Laws					
Strict Photo ID	0.109	0.093			
	(0.068)	(0.077)			
Photo ID Requested	-0.413**	-0.494***			
	(0.179)	(0.182)			
Strict Photo or Photo Requested			-0.214	-0.189	0.828
			(0.189)	(0.194)	(0.161)
Identification Law	-0.117	-0.137	-0.126	-0.124	0.883
	(0.092)	(0.100)	(0.117)	(0.117)	(0.103)
Voter ID Law Interactions					
Age Interactions					
Strict Photo or Photo ID Requested * Age 18-24				-0.275***	0.759***
				(0.095)	(0.072)
Strict Photo or Photo ID Requested * Age 25-39				-0.113**	0.893**
				(0.051)	(0.046)
Strict Photo or Photo ID Requested * Age 65 plus				0.091	1.096
				(0.061)	(0.067)
Education Interactions					
Strict Photo or Photo Requested * Less than High School Education				0.029	1.029
				(0.098)	(0.101)
Race Interactions					
Strict Photo or Photo Requested * Black				0.119	1.126
				(0.079)	(0.089)
Strict Photo or Photo Requested * Hispanic				0.137*	1.146*
				(0.070)	(0.081)
Strict Photo or Photo Requested * Asian				0.456**	1.577**
				(0.229)	(0.361)
Observations	253,910	223,704	223,704	223,704	223,704
Pseudo R2	0.0622	0.134	0.134	0.134	0.134
Clustered standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1					

While the finding that voters aged 18 to 24 may be disproportionately impacted is consistent with my conceptual framework, the finding that Asian voters are more likely to vote in states with photo ID requirements relative to Asian voters in non-photo ID states is contrary to my expectations. There are several possible explanations for this unexpected result, one being that photo ID requirements increase turnout among Asian voters. However, there are also

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[27] Table 3 excludes several variables for regression Models 2 through 4. For full results refer to the appendix.

[28] Although not reported in this table or the Appendix, the majority of the state dummy variable coefficients are statistically significant, as are all of the year dummy variable coefficients. This lends some support to the use of factor variables to create a model with fixed effects for each state and year.

[29] Odds ratios for Model 4 are reported to assist readers with interpretation of the results in Model 4.

reasons to be skeptical of this particular finding. Bernstein, Chadha, and Montjoy (2003) warn of the potential for spurious correlation in cross-state studies using information from the Current Population Survey due to overreporting differences between minorities in different states. Cassel (2003) notes overreporting bias by African Americans and Hispanics as one potential concern in interpreting minority results and further states over-reporting from African Americans at times may be misestimated in the wrong direction. Unfortunately for this study, Cassel (2003) did not also test this concern specifically among Asians. While Highton (2005) concludes that the studies on overreporting bias in the CPS should not lead us to lack confidence in research based on the CPS data, both the Bernstein, Chadha, and Montjoy (2003) and Cassel (2003) studies indicate some of the challenges related to identifying potential negative effects of voter identification requirements on minorities.[30] Without additional information, analysis, and a theoretical basis to understand photo ID requirements appear to have a positive impact on Asian voter turnout, future studies are necessary to evaluate potential confounding factors and spurious correlation before coming to conclusions on this finding.

There are fewer concerns for the findings about the effect these laws have on young voters. As discussed previously, the probability of voting for registered voters aged 18 to 24 in states that require or request voter identification is reduced, with a log odds of negative 0.275 on the interaction term, relative to 18 to 24 year olds in states with less stringent voter identification requirements. The odds ratio of 0.759 for the interaction term indicates more intuitively than the log odds the relative magnitude that these young voters in states that require or request photo identification are less likely to vote than voters of the same age in non-photo ID states. Yet, as Roncek (1991) describes, the non-linearity of the relationships in Models 1 though 4 means that

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[30] Highton (2005) analyzes the high-levels of proxy-reporting in the CPS and finds overreporting bias for proxy-reported turnout to be of less than self-reported turnout. Highton concludes that differences in turnout across states are largely unaffected and that proxy-reporting is not a reason to seriously doubt CPS based research.

the odds ratios, while informative, can not be directly interpreted in relation to the probability that an individual with certain characteristics votes. While odds ratios greater than one indicate how many times greater the odds for being in the group are relative to not being in the group, there is a direct interpretive challenge and need for caution and alternative techniques for odds ratios less than one (Osborne 2006). In this case, for the interaction term denoting 18 to 24 year olds in states with stringent photo identification requirements, comparing two different hypothetical individuals can often better help us understand the effect of these requirements on the probability that an individual votes. For instance, comparing two different white, unmarried, employed individuals in the first income quartile with profiles similar to many potential young voters,[31] predicts that subjecting these individuals to photo identification requirements would have decreased the probability that these young potential voters turnout to vote by approximately 4.5 percent in the 2004 elections and approximately 3.9 percent in the 2008 elections.[32] The magnitude of this estimated impact varies, by state, year, and other factors, yet the impact on these young voters is consistently negative in magnitude.

POLICY IMPLICATIONS

The results of this study indicate that requesting photo identification at the polls negatively impacts voter turnout, but the results are not conclusive when both types of photo identification requirements, either requesting or requiring a photo ID, are viewed as a single category. Despite this inconclusive result, the findings indicate that voters aged 18-24 are disproportionately impacted by photo identification requirements. This finding is not surprising considering that many individuals in this age group represent first time voters who have less

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[31] For this example, the categorization includes an individual classified as white, age 18 to 24, unmarried, living at their address for less than one year, in the first income quartile, living in Minnesota, with more than a high school education. The election year is 2004.

[32] The process described by Roncek (1991) served as a guide for the computations in this example.

experience with the voting process. Due to the recent implementation of these laws, data on future elections is necessary to fully evaluate whether this effect dissipates or sustains over time. Yet, this finding also suggests that photo identification laws intended to prevent fraud and increase confidence in the electoral system do not come without a tradeoff of disproportionate impacts on turnout among young voters, at least in the short term, which may in and of itself undermine the goal of increasing electoral integrity. As a result, lawmakers intent on passing legislation to safeguard the integrity of our elections should also consider whether alternatives to photo identification at the polls, such as utility bills or reasonable checks in the registration process, may provide a sufficient alternative to photo identification on the day of the election. If voter fraud and the perception of voter fraud is truly an insignificant problem, as many critics of voter identification laws claim, the adverse impact of these photo identification requirements implies that these requirements are unnecessary. Further, Texas, South Carolina, and Alabama are waiting for Department of Justice approval of their recently passed voter ID laws to ensure historically disenfranchised populations are not disproportionately negatively impacted.[33] In showing that young voters are disproportionately affected, this study provides support for the Justice Department's claims of unequal impact among particular demographic groups; however, this study also concludes that the effect of these laws on minorities in particular remains uncertain. To mitigate the potential for disproportionate impacts, policy-makers intent on crafting legislation including photo identification requirements may want to consider outreach programs to potentially impacted voter groups. By engaging affected demographic groups, lawmakers may be able to lessen any negative impacts on voter turnout while still addressing perceived concerns about electoral fraud and integrity.

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[33] National Conference of State Legislatures. (December 12, 2011). Voter Identification Requirements. Retrieved from http://www.ncsl.org/default.aspx?tabid=16602.

CONCLUSIONS

This study's primary finding is that photo identification requirements disproportionately impact young voters between the ages of 18 and 24, decreasing the probability that they vote on election-day. However, there is less certainty surrounding other mechanisms through which negative effects of photo identification requirements may or may not operate. Further, the small number of states that have implemented strict photo identification requirements coupled with the inconsistent findings between states that require photo identification compared to states that request photo identification indicates the need for further research. The 2012 election cycle will provide substantially more variation in state photo identification requirements as more states implement strict photo ID requirements. The additional information provided may help clear up some of the academic and political controversies surrounding these laws. Until additional data to analyze the effect of photo identification requirements already passed is available to allow for more conclusive study, policymakers would be wise to consider the broad array and types of studies analyzing voter identification requirements, and refrain from rushing to pass potentially disenfranchising voter identification requirements unless new findings reliably demonstrate an essential need for stringent photo identification requirements.

Table 4: Model Results[34,35,36]

	(1) Logit	(2) Logit	(3) Logit	(4) Logit	(5) Odds Ratio
Voter ID Laws					
Strict Photo ID	0.109	0.093			
	(0.068)	(0.077)			
Photo ID Requested	-0.413**	-0.494***			
	(0.179)	(0.182)			
Strict Photo or Photo Requested			-0.214	-0.189	0.828
			(0.189)	(0.194)	(0.161)
Identification Law	-0.117	-0.137	-0.126	-0.124	0.883
	(0.092)	(0.100)	(0.117)	(0.117)	(0.103)
Controls					
Age 18-24			-0.794***	-0.793***	-0.761***	0.467***
			(0.029)	(0.029)	(0.032)	(0.015)
Age 25-39			-0.694***	-0.694***	-0.680***	0.507***
			(0.020)	(0.020)	(0.021)	(0.011)
Age 65 plus			0.579***	0.578***	0.564***	1.759***
			(0.028)	(0.028)	(0.031)	(0.055)
Black Voter and Year 2008			0.634***	0.640***	0.636***	1.889***
			(0.069)	(0.067)	(0.068)	(0.128)
Age 18-24 Voter and Year 2008			0.315***	0.314***	0.320***	1.376***
			(0.052)	(0.052)	(0.051)	(0.070)
Hispanic			-0.167***	-0.167***	-0.185***	0.831***
			(0.061)	(0.061)	(0.065)	(0.054)
Black			0.384***	0.383***	0.368***	1.445***
			(0.052)	(0.052)	(0.057)	(0.082)
Asian			-0.528***	-0.527***	-0.601***	0.548***
			(0.097)	(0.097)	(0.062)	(0.034)
Other non-White			-0.215***	-0.215***	-0.194***	0.823***
			(0.061)	(0.061)	(0.056)	(0.046)
Female			0.018	0.018	0.018	1.018
			(0.012)	(0.012)	(0.012)	(0.013)
Married			0.297***	0.297***	0.297***	1.346***
			(0.017)	(0.017)	(0.016)	(0.022)
Lived at Address for Under 1 Year			-0.509***	-0.509***	-0.510***	0.601***
			(0.023)	(0.023)	(0.023)	(0.014)
First Income Quintile			-0.685***	-0.685***	-0.685***	0.504***
			(0.033)	(0.033)	(0.033)	(0.016)
Second Income Quintile			-0.393***	-0.393***	-0.393***	0.675***
			(0.036)	(0.036)	(0.036)	(0.024)
Third Income Quintile			-0.264***	-0.264***	-0.264***	0.768***

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[34] Clustered standard errors in parenthesis. *** p<0.01, ** p<0.05, * p<0.1.

[35] Dummy variables to create fixed effects for each state are not reported in this table. Minnesota served as the reference point. The vast majority of state control variables are statistically significant at conventional levels.

[36] Odds ratios for Model 4 are reported to simplify reader interpretation of the log odds results.

	(1) Logit	(2) Logit	(3) Logit	(4) Logit	(5) Odds Ratio
		(0.028)	(0.028)	(0.028)	(0.021)
Fourth Income Quintile		-0.104***	-0.104***	-0.104***	0.901***
		(0.024)	(0.024)	(0.024)	(0.022)
Employment Status		0.062***	0.061***	0.061***	1.063***
		(0.016)	(0.016)	(0.016)	(0.017)
Governor or Senator on Ballot in Midterm Election		0.237***	0.237***	0.238***	1.268***
		(0.081)	(0.081)	(0.082)	(0.105)
Governor or Senator on Ballot in Presidential Election		-0.088	-0.090	-0.087	0.917
		(0.057)	(0.056)	(0.056)	(0.051)
Less than High School Education		-1.078***	-1.078***	-1.081***	0.339***
		(0.039)	(0.039)	(0.043)	(0.014)
High School Education		-0.622***	-0.622***	-0.622***	0.537***
		(0.017)	(0.017)	(0.017)	(0.009)
Voter ID Law Interactions					
Age Interactions					
Strict Photo or Photo ID Requested * Age 18-24				-0.275***	0.759***
				(0.095)	(0.072)
Strict Photo or Photo ID Requested * Age 25-39				-0.113**	0.893**
				(0.051)	(0.046)
Strict Photo or Photo ID Requested * Age 65 plus				0.091	1.096
				(0.061)	(0.067)
Education Interactions					
Strict Photo or Photo Requested * Less than High School Education				0.029	1.029
				(0.098)	(0.101)
Race Interactions					
Strict Photo or Photo Requested * Black				0.119	1.126
				(0.079)	(0.089)
Strict Photo or Photo Requested * Hispanic				0.137*	1.146*
				(0.070)	(0.081)
Strict Photo or Photo Requested * Asian				0.456**	1.577**
				(0.229)	(0.361)
Year					
2006	-1.597***	-1.597***	-1.592***	-1.591***	0.204***
	(0.040)	(0.093)	(0.094)	(0.095)	(0.019)
2008	0.077**	-0.075**	-0.071**	-0.070**	0.932**
	(0.035)	(0.035)	(0.035)	(0.035)	(0.032)
2010	-1.650***	-1.650***	-1.649***	-1.648***	0.192***
	(0.091)	(0.091)	(0.091)	(0.091)	(0.018)
Constant, Observations, Pseudo R2					
Constant	2.648***	3.361***	3.358***	3.352***	28.555***
	(0.029)	(0.050)	(0.050)	(0.050)	(1.418)
Observations	253,910	223,704	223,704	223,704	223,704
Pseudo R2	0.062	0.134	0.134	0.134	0.134

Table 5: Number of State Laws by Category[37]

Category	2004	2006	2008	2010
Strict Photo ID States	0	1	2	2
Photo ID Requested States	4	4	5	6
ID States (non-Photo)	16	18	16	17
No ID Requirement States	29	26	26	24
Total	**49**	**49**	**49**	**49**

Table 6: State Voter Identification Laws Categorized by State[38]

State	Year 2004	2006	2008	2010
AL	ID	ID	ID	ID
AK	ID	ID	ID	ID
AZ	No ID	ID	ID	ID
AR	ID	ID	ID	ID
CA	No ID	No ID	No ID	No ID
CO	ID	ID	ID	ID
CT	ID	ID	ID	ID
DE	ID	ID	ID	ID
DC	No ID	No ID	No ID	No ID
FL	Photo ID	Photo ID	Photo ID	Photo ID
GA	ID	ID	Strict Photo	Strict Photo
HI	Photo ID	Photo ID	Photo ID	Photo ID
ID	No ID	No ID	No ID	Photo ID
IL	No ID	No ID	No ID	No ID
IN	No ID	Strict Photo	Strict Photo	Strict Photo
IA	No ID	No ID	No ID	No ID
KS	No ID	No ID	No ID	No ID
KY	ID	ID	ID	ID
LA	Photo ID	Photo ID	Photo ID	Photo ID
ME	No ID	No ID	No ID	No ID
MD	No ID	No ID	No ID	No ID
MA	No ID	No ID	No ID	No ID

[37] Table categorizations are based on the National Conference of State Legislatures, includes the District of Columbia, and excludes Washington and Oregon.
[38] Table categorizations are based on the National Conference of State Legislatures, includes the District of Columbia, and excludes Washington and Oregon.

State	Year			
	2004	**2006**	**2008**	**2010**
MI	ID	ID	Photo ID	Photo ID
MN	No ID	No ID	No ID	No ID
MS	No ID	No ID	No ID	No ID
MO	ID	ID	ID	ID
MT	ID	ID	ID	ID
NE	No ID	No ID	No ID	No ID
NV	No ID	No ID	No ID	No ID
NH	No ID	No ID	No ID	No ID
NJ	No ID	No ID	No ID	No ID
NM	No ID	ID	No ID	No ID
NY	No ID	No ID	No ID	No ID
NC	No ID	No ID	No ID	No ID
ND	ID	ID	ID	ID
OH	No ID	No ID	ID	ID
OK	No ID	No ID	No ID	No ID
PA	No ID	No ID	No ID	No ID
RI	No ID	No ID	No ID	No ID
SC	ID	ID	ID	ID
SD	Photo ID	Photo ID	Photo ID	Photo ID
TN	ID	ID	ID	ID
TX	ID	ID	ID	ID
UT	No ID	No ID	No ID	ID
VA	ID	ID	ID	ID
VT	No ID	No ID	No ID	No ID
WV	No ID	No ID	No ID	No ID
WI	No ID	No ID	No ID	No ID
WY	No ID	No ID	No ID	No ID

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