Registration & Turnout in the 21st Century: Revisiting the Two-step Model in the Contemporary Era

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## Introduction

There is a long-standing notion that education plays at least a semi-important role in a citizen’s democratic participation. Indeed, it seems almost intuitive that one’s choice to participate in the process and to vote for a candidate would have to in some way involve their educational background. In theory, these are decisions that require one to consider their role or duty in society, to weigh the pros and cons of a series of candidates, and to do all of things we typically associate with being a good, participating citizen. But is that really the case? Once you separate any preconceived notions or biases about what democratic participation should be, or what it should look like, does the education of an individual *actually* play a role? In the past, we have found reason to believe so. But does this still hold true today? The way we vote, the laws that govern this, and the world we live in has changed significantly over the past few decades. Does the classic question, “How does education impact turnout?” still give us the same answer? That is what this work seeks to discover. Using access to data that has until recently been unavailable, this will examine whether the changes in turnout and education levels over the past few decades will require us to re-evaluate the roles of each as they apply to democratic participation.

Things have changed in the last 30 years. The Motor Voter Act (NVRA) is passed in 1993 and several electoral laws and procedures are changed. Following the Bush/Gore election of 2000, a new barrage of process reforms is enacted. In 2002, the Help America Vote Act (HAVA) is passed by Congress, and states are encouraged to, among other things, make upgrades to their registration process (out with paper, in with electronics). HAVA did remove barriers to registration, and it has also created as accessible a system as the U.S. has ever had (Highton 2004). However, the heterogenous nature of the state-based reform process resulted in a system that is still far from uniform. There exists a significant amount of variance in state level regulation regarding registration closing dates, voter ID laws, and early voting opportunities. To go along with these regulatory changes, turnout has increased, as have education levels. We are then left with an environment with citizens who turnout in greater numbers, have on average greater educational attainment levels, and are playing by a different set of rules.

One matter that had previously made this difficult to assess was the lack of validated voting data sets in circulation. In the past, many data sets (such as the American National Election Studies (ANES)) validated their vote to achieve a more accurate count of who indeed voted and registration. This process was phased out in the 90’s but has recently returned (not only with the ANES, but with other data sets complementary to this study, such as the Cooperative Congressional Election Study (CCES).) This allows for a much more accurate representation of what has changed to be captured. But, before that, the previous work must be addressed.

## Turnout & Education

The traditional view of education as it relates to turnout is captured by Wolfinger & Rosenstone in *Who Votes?,* education is the primary driver of turnout. Those with higher educational attainment levels are more informed, they will have a greater ability to vote (more financial freedom, more time to get to the polls, etc.) and they will best understand their civic duty to participate. This is challenged though by other authors, primarily, because of Brody’s puzzle, which asks: Why has education been rising but turnout falling (Brody 1978), given how education has such a long-standing history as a key determinant of turnout. What could be the cause of this anomaly? There is the possibility that there are other forces at work. Mobilization, SES, and the relevant resources outside of finances also share links to turnout. Recent work has found that the first is not the likely culprit, as mobilization is more or less functioning the same (Goldstein & Ridout 2002). Resources function in a different manner. Political activity can be explained, at least to a degree, as a function of time, money, and civic skills that are acquired through one’s SES status (Brady, Verba, Schlozman 1995). These factors are not divorced from education, though by no means is one a guarantee of the other (wealth and education, that is). These relationships are bolstered by earlier findings, indicating that again, resources matter, and that differences in participation between men and women can in many ways be explained through difference in access to resources. (Schlozman, Burns, & Verba 1994). Given the importance of SES on participation, and its relationship to education, it merits further attention regarding the role of education and explaining its current relationship to turnout.

## Education

In 1996, Nie, Junn, and Stehlik-Barry publish *Education and Democratic Citizenship in America* and fundamentally change the understanding of education as it relates to political participation. Their work splits education in two. The first part of education pertains to skill acquisition and functions on a cumulative basis, and is, in many ways, more of the classical interpretation. The second aspect of education that they outline is that of education as a predictor of social status. This type of education functions in a relative fashion, and your social sorting is dependent upon those around you and their education levels. In terms of political participation, those with higher social standing are more likely to have closer ties to the political system and even to politicians themselves then their relatively-less elite peers. This finding is explored again by Tenn in 2005, who, through more strenuous methodology, affirms their conclusions regarding the duality of education as it pertains to political participation.

Later work builds on this new notion of education and attempts to apply it directly to the question of political participation. Kam and Palmer discuss the potentially spurious relation between education and participation in *Reconsidering the Effects of Education on Political Participation.* The consensus at the time was that education and participation are intimately linked, though dissenting opinions had existed for some time. Kam and Palmer use propensity score matching to measure the effects of education and pre-adult experiences on high school seniors in order to determine if it is indeed education that predicts participation or simply that education is a useful proxy for whatever it is that is actually determining an increased propensity towards participation. Their panel data analysis provides support for their hypothesis regarding the spurious nature of education. With their controls applied, it is not education at all that determines participation, rather it is preadult experiences and influences. Education, it would seem, is not a cause.

Kam and Palmer are not alone in their findings. Other research has shown similar results regarding the spurious nature of education, and that education had little to show in terms of identifying who had political knowledge (Burden 2009). Education as a proxy is explored in other works to similar results. Vietnam era draft lotteries are used to show that college education has little relation to political participation (Berinsky & Lenz 2010) and that the real determinant is family background and cognitive skills.

Others, however, offer an alternative view. Sonheimer & Green in 2010 publish findings that assert the traditional assumptions regarding education. Using three experiments that follow students in pre-school and high school through educational programs, they show the impact of education as a predicting variable in political participation. They reaffirm the causal nature of education and offer their increased turnout rates as proof. Other research has shown the impact of high school education on the development of language tools in students, and the positive effect that has on political participation (Condon 2015) This may very well be the start of the link between these two paradigms, and the vehicle by which Sondheimer and Green’s students use their educational programs to transition into better adult voters. If it is speaking out in class that builds skills to vote and speak for oneself, it might also be the positive impact with their youth programs that builds civic skills and the understanding of the value of such things in these young voters.

## Registration & Turnout

In classic registration and turnout studies, the key factor is and has been the local difference in registration laws (Kelley, Ayres, & Bowen 1967). These laws have somewhat of a repression effect on voters, though not enough that it would change the outcome of an election. (Rosenstone & Wolfinger 1978). While in some instances registration laws can repress votes, they can also encourage voting for those who have registered, giving those who have started the process something to lose (Erikson 1981). That being said, the big influence as to whether one votes or not is still registration (Wolfinger, Glass, & Squire 1990) even more so than interest in politics, so any positive externalities on the registered must be weighed against the negative on the non-registered.

Richard Timpone make a key contribution to this in 1998. His work raises the point that registration and voting are not a single step process. One first chooses to register to vote, and then later makes a second-choice conditional upon having already registered to actually vote. This was not something that had been appreciated until that time. He shows through ANES studies from the 80’s that there are critical differences that occur when you examine registration and voting as a single or two stage process. To operationalize this, Timpone uses registration closing dates and voter purging laws as instrumental variables in a Heckman self-selection model. Variables such as education, home ownership, and strength of party identification show different effects at the registration and voting stages of the process that are lost when the model assumes registration and voting as a single act of turnout. Most importantly, education has a significant effect on registration, but this fails to be the case for turnout. This changes the role that education plays traditionally in the turnout decision equation. Since Timpone’s study, this two-step method of measuring registration and turnout has not been as popular. Part of the reason for this is that, even for Timpone, access to validated voting data was not simple (He himself had to return to data from the 80’s to examine this). Fortunately, this is no longer the case, and we can return to this line of research regarding education and participation. Additionally, state level registration laws have changed, as stated previously, through HAVA and Motor Voter. With new kinds of turnout, new levels of education, and new state level laws, it is worth returning to how these all apply in answering the question of how education impacts turnout.

Given this new understanding of education and turnout, it seems to give some creedence to the findings of Kam and Palmer, but without entirely changing our understanding past work on the subject. The process of registration and turnout is a two step one, and when that is not approached properly the findings can be misleading, and the effects of an independent variable (such as education) can be mistakenly correlated with another. Because of these reasons, when returning to the subject in this research I expect to find the following:

**H1 : There are heterogeneous effects of education on registration and turnout.**

I expect Timpone’s findings to hold today. Despite a change in education levels and turnout, and even a change to registration laws, the fundamental relationship described in his work should still apply. Education’s effects on turnout are spurious, and it is an effect on registration that is being captured.

Regarding state variance, I expect the effects of closing dates to still hold. While there has been changes to laws regarding closing dates, variance still exists. If the theory is that longer gaps between when a potential voter can register, and vote leads to less registration, then I can only assume that this process will still hold true today.

**H2: Closing dates will negatively impact registration**

To test another variable from the state level, I will add residency requirements. Similar to closing dates, I assume that states with more burdensome residency requirements will have less likely registrants.

**H3: Residency requirements will negative impact registration**

Finally, to better explore the effect of education on turnout, a secondary study will be performed that explores the effects in off-year elections. Given the general tendency towards lower turnout and participation in non-presidential election years, I assume that the role of education might be more important in mid-term elections as a predictor of turnout.

**H4: Elections on off years will result in education playing a higher role**

## Data

This study uses data from the ANES 2012 Time Series Voter Validation Supplemental Data survey. The ANES 2012 Time Series Voter Validation Supplemental Data provides data on the voter registration and turnout history of people living at addresses sampled for the ANES 2012 Time Series Study. The data were obtained from three commercial vendors who independently collected data from official government records and consumer-data clearinghouses. ANES consolidated data from these three vendors to describe the voter registration and turnout status of face-to-face respondents in the ANES 2012 Time Series Study, as well as registration and turnout status of other people living at all ANES sampled addresses, including addresses where ANES did not complete an interview. There are in total 1717 respondents with validated data. In the event that validation between the three vendors clashed, the preferred vendor as specified by the ANES was used.

For state level variables, the 2012 Book of States published by the council of state governments was used. These can be seen in the table below.

Table 1: State level Closing date and Registration Data

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **States** | **Closing Date** | **Registration Requirements** | **States** | **Closing Date** | **Registration Requirements** |
| **Alabama** | 10 | S, 1 day | **Montana** | 0 | S, 30 |
| **Alaska** | 30 | S, D, 30 | **Nebraska** | 14 | S |
| **Arizona** | 29 | S, C, 29 | **Nevada** | 20 | S, C, 30; P, 10 (w) |
| **Arkansas** | 30 | C, 30 | **New Hampshire** | 0 | S |
| **California** | 15 | S | **New Jersey** | 21 | S, C, 30 |
|  |  |  |  |  |  |
| **Colorado** | 29 | S, P, 30 | **New Mexico** | 28 | S |
| **Connecticut** | 7 | S, T | **New York** | 25 | S, C, 30 |
| **Delaware** | 20 | S | **North Carolina** | 25 | S, C, 30 |
| **Florida** | 29 | S, C | **North Dakota** | 0 | S,P, 30 |
| **Georgia** | 30 | S, C | **Ohio** | 30 | S, 30 |
|  |  |  |  |  |  |
| **Hawaii** | 30 | S | **Oklahoma** | 24 | S |
| **Idaho** | 0 | S, C, 30 | **Oregon** | 21 | S |
| **Illinois** | 28 | S, P, 30 | **Pennsylvania** | 30 | S, D, 30 |
| **Indiana** | 29 | S, P, 30 | **Rhode Island** | 0 | S, C |
| **Iowa** | 0 | S | **South Carolina** | 30 | S,C,P |
|  |  |  |  |  |  |
| **Kansas** | 21 | S | **South Dakota** | 15 | S |
| **Kentucky** | 29 | S, P, 28 | **Tennessee** | 30 | S |
| **Louisiana** | 30 | S,C,P 30 | **Texas** | 30 | S, C |
| **Maine** | 0 | S, M | **Utah** | 15 | S, 30 |
| **Maryland** | 21 | S, 21 | **Vermont** | 6 | S, C |
|  |  |  |  |  |  |
| **Massachusetts** | 20 | S | **Virginia** | 22 | S |
| **Michigan** | 30 | S, M, 30 | **Washington** | 15 | S, 30 |
| **Minnesota** | 0 | S, 20 | **West Virginia** | 21 | S, C 30 |
| **Mississippi** | 30 | S, C, 30 | **Wisconsin** | 0 | S, P, 28 |
| **Missouri** | 28 | S | **Wyoming** | 0 | S, P |

(e) Key for residency requirements: S – State, C – County, D – District, M – Municipality, P – Precinct, T – Town. Numbers represent the number of days before an election for which one must be a resident.

The Mid-term study uses data from the CCES 2014. The CCES is a 50,000+ person national stratified sample survey administered by YouGov. Half of the questionnaire consists of Common Content asked of all 50,000+ people, and half of the questionnaire consists of Team Content designed by each individual participating team and asked of a subset of 1,000 people. In addition, several teams may pool their resources to create Group Content. The validated sample uses Matched non-voters and self-reported non-voters as non-voters, in addition to matched voters as voters. This is done, per the CCES guides recommendation, to build the largest sample size while remaining accurate.

## Methods

To more accurately capture the mechanisms of voter turnout, I will use a self-selection model (Dubin & Rivers 1989; Heckman 1979) that allows for three distinct types of voters to be captured. Non-voters participate in no activities, registered non-voters complete the first stage that is registration, and voters, of course, vote. In doing so, the effects of independent variables in the model act twice, first on the individual and the choice to register, and second on the individual and the choice to vote conditional on the individual having already registered. The instrumental variables used for this model are closing dates and residency requirements. These vary by state and have an impact on individual’s choice to register, but not on their choice to vote. Other state level variations related to closing dates and residency requirements, such as early voting, are not ideal as their impact on voting remains and they lose their values instrumental variables. Election day registration, often treated as its own variable, is partially captured in the closing date variable (states with EDR are coded zero, that is, they have a zero-day gap between when an individual can no longer register and voting day.) The correlation between EDR as its own variable and the closing date variable is very high, so it is not included in the self-selection model.

The dependent variables for this model are validated registration and validated vote. The independent variables, building on the model put forth by Timpone, are clustered into five separate categories: demographics, social connectedness, general and election specific political attitudes, and the state level administrative barriers. The demographic factors, *Region (if in the south), Age, Education, Race (if black), Gender (if female), Income, and Time in one’s home* have strong links to turnout in past work. Education, the variable here this work is most interested in, has been shown to affect turnout and registration differently, and the same result is expected here. Education is coded in years, as is time in one’s home and age. Race, gender, and region are all dichotomous variables. Income is dummied into quintiles and includes another variable to capture respondents who chose not to give their income information. Around five percent of respondents gave this reply, so to maximize the number of cases selected this variable was coded in this manner. The base income group is the top 20%.

The social connectedness variables are *Church attendance, Group Membership, Marital Status, Time in one’s town, and Home ownership.* Church attendance is a standard religiosity score based on church attendance. Group membership is based on a respondents self-reported membership within a group(s). Time in one’s town is coded in years, and marital status and home ownership are dichotomous.

Political attitude variables are *External and Internal efficacy, party differential scores, strength of partisan identification, and trust in government scores.* The internal and external efficacy scores are indexed responses combine answers from questions such as “Politics are too complicated to understand” or “Public officials don’t care about what I think.” Trust in Government scores are calculated similarly, with questions such as “How often can you trust the government in Washington to do what is right?” Variables used for these measures are in the appendix. Partisan identification scores are based on seven-point partisan scales but folded to be partisan neutral. Party differential scores are calculated simply by if a respondent has a party preference of any type, yes or no.

Election specific political attitudes are *Candidate Differential and Candidate Satisfaction scores.* These variables seek to first determine the respondent’s feelings towards the democratic and republican presidential candidate (from a 100-point thermometer hot/cold reading) and then to determine if there is any difference between their estimation of either candidate (so the absolute value of the difference of the thermometer scores.) The state level barrier variables are listed above.

## Results

Table 2.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Validated Turnout Selection Bias Model 2012 | | |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  | Registration | |  | | Turnout |  |  |
|  | Coefficient |  |  |  | Coefficient |  |  |
| Residential Requirement | 0.562 | \*\* | (0.223) |  | - |  | - |
| Closing Date | 0.011 |  | (0.007) |  | - |  | - |
| South | -0.042 |  | (0.156) |  | -0.236 | \*\* | (0.111) |
| Black | 0.239 |  | (0.165) |  | 0.118 |  | (0.145) |
| Female | 0.120 |  | (0.125) |  | 0.061 |  | (0.110) |
| Income NR | 0.354 |  | (0.300) |  | 0.416 |  | (0.308) |
| Income 0-20% | -0.213 |  | (0.229) |  | -0.083 |  | (0.188) |
| Income 20-40% | -0.411 | \*\* | (0.210) |  | 0.039 |  | (0.176) |
| Income 40-60% | -0.076 |  | (0.184) |  | -0.108 |  | (0.167) |
| Income 60-80% | -0.164 |  | (0.197) |  | -0.143 |  | (0.169) |
| Education | 0.064 | \*\* | (0.029) |  | -0.007 |  | (0.026) |
| Time in Home | 0.101 | \*\*\* | (0.034) |  | 0.075 | \*\* | (0.031) |
| Age | -0.283 | \*\*\* | (0.097) |  | 0.165 | \*\* | (0.077) |
| Age 2 | 0.021 | \*\*\* | (0.007) |  | -0.010 | \* | (0.005) |
| Religiosity | 0.016 |  | (0.040) |  | 0.073 | \*\* | (0.035) |
| Group Affinity | 0.176 |  | (0.129) |  | 0.080 |  | (0.109) |
| Marriage | 0.203 |  | (0.149) |  | 0.032 |  | (0.128) |
| Home Ownership | -0.079 |  | (0.152) |  | 0.172 |  | (0.137) |
| Time in Town | -0.003 |  | (0.006) |  | -0.007 |  | (0.005) |
| External Efficacy Score | 0.211 |  | (0.363) |  | 0.652 | \*\* | (0.315) |
| Internal Efficacy Score | 0.384 |  | (0.235) |  | 0.325 |  | (0.210) |
| Party Preference | 0.203 |  | (0.133) |  | 0.159 |  | (0.122) |
| Partisan Intensity | 0.266 | \*\*\* | (0.067) |  | 0.071 |  | (0.063) |
| Trust In Gov't | -0.660 | \*\* | (0.271) |  | -0.130 |  | (0.302) |
| Candidate Differential Score | 0.001 |  | (0.002) |  | -0.002 |  | (0.003) |
| Candidate Satisfaction Score | -0.198 |  | (0.152) |  | -0.310 | \*\* | (0.153) |
| Constant | -0.230 |  | (0.571) |  | -0.474 |  | (0.485) |
|  |  |  |  |  |  |  |  |
| RHO | -0.613 |  | (0.339) |  |  |  |  |
| # of Respondents | 1440 |  |  |  |  |  |  |
| Note: \*p<.1. \*\* p <.05. \*\*\*p<.01. | |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |

Table 1 above shows the results of a two-stage probit model for registration and turnout. To begin with the state level variables, residential requirements show a statistically significant result. However, the coefficient is positive, which is not the expected association between a supposed “barrier” to registration and the likelihood of registration. I will return to this surprising result shortly. Closing aates just miss the mark for significance at the p < .1 level (with a z-value of 1.47). There are some issues correlational with residency requirements (which makes sense, given what the two variables are.), but they were low enough that it seemed prudent to proceed with both in the model, despite the fact that what you are seeing here is the result of the two’s slight relationship and the dampening effect that residence has on closing dates, which when modeled alone, show significance. It also shares the directional coefficient with residence (surprisingly also increasing turnout.) Both findings are surprising, given the literature and history of the subject, and will be discussed further in the analysis.

Income shows heterogenous effects in this model (which, if we use Timpone’s past two-step model as a guide, is to be expected). Lower income voters have a smaller likelihood of registering to vote, but once that occurs, the effect of income on turnout is not significant. The same occurs with education, though in the opposite direction. Confirming my first hypothesis, education has a heterogenous effect on registration and education. Higher education positively associated with registration, but there is no significant relationship with turnout. This result seems to confirm some of the literature that shows the relationship between education and turnout as spurious. It also provides an explanation for the findings that the two are related; it was the effect on registration that was being captured in those models that was being mistakenly attributed to turnout.

Other classic strong predictors of turnout and voting retain their significance, such as time in home and age. Interestingly, partisan intensity shows a heterogenous score here as well. Partisan identity then would seem to get people, as a dutiful republican or democrat, to fill out their forms, but the act of voting is another thing entirely. This deserves more investigation in the future. It is bolstered by a logically similar finding that candidate satisfaction has little to do with registration (an act of partisan duty), but does play a significant role in the choice to vote (by itself not an interesting finding, but as a part of a two step process with different results at each step, enlightening.)

Now, to turn our attention to the mid term studies, Table 3 below shows a similar model but for 2014.

Table 3.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Validated Turnout Selection Bias Model 2014 | | | |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  | Registration | |  | | Turnout |  |  |
|  | Coefficient | |  |  | Coefficient | |  |
| Residential Requirement | 0.062 |  | (0.053) |  | - |  | - |
| Closing Date | -0.001 |  | (0.002) |  | - |  | - |
| South | -0.036 |  | (0.038) |  | -0.015 |  | (0.031) |
| Black | 0.009 |  | (0.054) |  | -0.274 | \*\*\* | (0.052) |
| Female | -0.071 | \*\* | (0.029) |  | -0.164 | \*\*\* | (0.029) |
| Income NR | 0.015 |  | (0.065) |  | 0.142 | \*\* | (0.064) |
| Income 0-20% | -0.089 |  | (0.059) |  | -0.136 | \*\* | (0.058) |
| Income 20-40% | -0.036 |  | (0.056) |  | -0.114 | \*\* | (0.055) |
| Income 40-60% | 0.031 |  | (0.056) |  | -0.047 |  | (0.056) |
| Income 60-80% | -0.007 |  | (0.056) |  | 0.000 |  | (0.052) |
| Education | 0.116 | \*\*\* | (0.011) |  | 0.110 | \*\*\* | (0.012) |
| Time in Home | 0.068 | \*\* | (0.033) |  | 0.177 | \*\*\* | (0.033) |
| Age | 0.024 | \*\*\* | (0.006) |  | 0.013 | \* | (0.007) |
| Age 2 | 0.000 | \*\* | (0.000) |  | 0.000 |  | (0.000) |
| Religiosity | 0.017 | \*\* | (0.009) |  | 0.012 |  | (0.008) |
| Marriage | -0.069 | \*\* | (0.034) |  | 0.058 | \* | (0.032) |
| Home Ownership | 0.125 | \*\*\* | (0.035) |  | 0.084 | \*\* | (0.034) |
| Partisan Intensity | 0.117 | \*\*\* | (0.014) |  | 0.065 | \*\*\* | (0.016) |
| Ideological Intensity | 0.054 | \*\* | (0.021) |  | 0.111 | \*\*\* | (0.021) |
| Have Children | -0.082 | \*\* | (0.037) |  | -0.198 | \*\*\* | (0.037) |
| Campaign Contact | 0.495 | \*\*\* | (0.029) |  | 0.323 | \*\*\* | (0.037) |
| Constant | -0.334 | \*\* | (0.153) |  | -0.533 |  | (0.233) |
|  |  |  |  |  |  |  |  |
| RHO | -0.570 |  | (0.265) |  |  |  |  |
| # of Respondents | 31984 |  |  |  |  |  |  |
| Note: \*p<.1. \*\* p <.05. \*\*\*p<.01. | |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |

For this model, some independent variables are removed. This is due to the fact that this model is done using CCES data, and some of the measures form the ANES data are not possible. All other variables are coded the same if they appear in both models. Ideological intensity, presence of children, and campaign contact are included as replacement variables. All have a long history as predictors of political participation, so their presence as controls is likely not be surprising. The change to the CCES is also the reason for the greater sample size, as the number of validated voters in the CCES 2014 survey was much higher. What we find here is a much different picture. The state level variables that worked well in the 2012 model are of little use here and are of no significance. Everything else that occurs is not out of the ordinary, with one exception. The role of education is significant for both registration and turnout, and for both it is of extreme significance. This is a confirmation of Hypothesis four, that education has a different effect during midterm elections. I’ll return to this later in the analysis.

## Robustness checks

In using a method like the Heckman self-selection model, it is a good practice to develop alternative models that function similarly to test the robustness of my results. These models are included in the appendix. The first set of robustness checks develops a pseudo-Heckman model by first running a probit model on registration with the state level barrier variables as controls. In doing so the state controls behave in a nearly identical fashion, as does the education control, rather, it is significant here. After this, I run a similar probit model that only looks at a population of registered respondents (put differently, this model only examines respondents with a registration value of 1) What you find is again nearly identical to the Heckman model. Education does not show significance. I can then say with more confidence that the results of the more complex model are accurate. Similar models are created for the 2014, and similar results are achieved.

As an additional robustness check, I also ran an additional Heckman model that clustered by states, in order to achieve a more accurate estimate of the standard errors associated with the multi-level variables (the state barriers). These models can also be found in the appendix. The results confirm the models in Tables 2 and 3 like the last. These models are very close to the original, giving me further confidence in my findings.

## Discussion/Analysis

There are two critical findings here worth discussing, both stem from the earlier hypotheses. First, there is the matter of education and its relationship with political participation. This work echoes earlier work in questioning the long-standing role of education as a strong predictor of turnout (Kam & Palmer 2008, Burden 2009, Berinsky & Lenz 2010, Timpone 1998). What is shown here is a process by which education, along with elements like partisan identity strength, drive people to register. But sometime between then and the vote, a different process takes over. This reinforces notions of both civic and partisan duty driving people to the register. But this also raises questions as to why those same feelings of duty do not translate to the actual vote. For the party identity question, the simplest answer is that one can find themselves as a loyal democrat or republican but simply not care for their candidate. After the election of 2016, this hardly seems like a hard story to sell. For education, the explanation for these findings is a little less clear. Normatively it is palatable that as people become more educated they understand the necessity of their participation and eventually may even want to become a part of the political process, and along with this their increased knowledge allows them to make a better, more informed decision as to who should represent their interests. But as appealing as that may be, it might also not be the truth. If education is a driver of registration, as is income, then maybe what we are really seeing is a more educated subset of the population with more disposable income, time and access are more likely to register.(Nie, Junn, & Stehlik-Barry 1996, Brady, Verba, Schlozman 1995) But once this occurs, their decisions as to who governs them and why thy come to them are bound by the same logic as everyone else, that is to say, it isn’t related to their educational background. Answers to these questions should drive future research, given the more accurate understanding of the role of education in the turnout decision calculus.

An additional area of interest that arises from these findings is the seemingly counter-intuitive relationship between closing dates, residency requirements, and registration. Previous findings have shown that, historically, closing dates have a negative relationship with registration. (Timpone 1998). But, when considered over the course of time, is it that strange that this finding is the case? Recent work has shown that convenience voting laws, such as early voting laws, can have the opposite effect that one might assume, they can depress voting turnout (Burden, Canon, Mayer, & Moynihan 2013; Gronke, Galanes-Rosenbaum, Miller, & Toffey 2008; Giammo & Brox 2010). Could a similar effect be at work here? When this work was examined by Timpone in 1998, it was with data from the 80’s that existed prior to the NVRA, and prior to the HAVA. It seems entirely possible that the same kind of law that was once a barrier might today be a non-issue. Furthermore, given that these states have had thirty years and multiple policy iterations to deal with their seemingly restrictive election laws, might it be possible that they have become adept at registering their populations despite this effect?

This work will not provide answers to the above, but it is a good starting place to re-examine what is and is not permitting or restricting registration and voting. The notion that ease of access and convenience changes will result in more registration and voting is an easy one to hold; if it takes less time, less preparation, and less effort to do something, should it not follow that that thing would be done more? In reality, however, this is evidently not the case. If we hold to our normative desires that high levels of participation are good for a functioning democracy, we will seemingly have to move past the surface looks at what causes people to vote or abstain, and this might mean moving beyond convenience voting and onto to something that strikes more at the heart of the issue.

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## Appendix

Figure i.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Robustness Check One: Probit Registration & State Level Variables 2012 | | | | | | |
|  |  |  | Standard | |
|  | Coefficient |  | Error |  |
| Residential Requirement | 0.626 | \*\*\* | 0.212 |  |
| Closing Date | 0.011 |  | 0.008 |  |
| South | -0.051 |  | 0.157 |  |
| Black | 0.254 |  | 0.164 |  |
| Female | 0.116 |  | 0.126 |  |
| Income NR | 0.378 |  | 0.298 |  |
| Income 0-20% | -0.189 |  | 0.229 |  |
| Income 20-40% | -0.414 | \*\* | 0.209 |  |
| Income 40-60% | -0.072 |  | 0.186 |  |
| Income 60-80% | -0.139 |  | 0.198 |  |
| Education | 0.064 | \*\* | 0.029 |  |
| Time in Home | 0.094 | \*\*\* | 0.034 |  |
| Age | -0.279 | \*\*\* | 0.098 |  |
| Age 2 | 0.021 | \*\*\* | 0.007 |  |
| Religiosity | 0.017 |  | 0.040 |  |
| Group Affinity | 0.163 |  | 0.131 |  |
| Marriage | 0.228 |  | 0.146 |  |
| Home Ownership | -0.055 |  | 0.151 |  |
| Time in Town | -0.002 |  | 0.006 |  |
| External Efficacy Score | 0.161 |  | 0.355 |  |
| Internal Efficacy Score | 0.363 |  | 0.232 |  |
| Party Preference | 0.218 | \* | 0.134 |  |
| Partisan Intensity | 0.271 | \*\*\* | 0.069 |  |
| Trust In Gov't | -0.682 | \*\* | 0.269 |  |
| Candidate Differential Score | 0.001 |  | 0.002 |  |
| Candidate Satisfaction Score | -0.184 |  | 0.149 |  |
| Constant | -0.249 |  | 0.571 |  |
|  |  |  |  |  |
| Pseudo R2 | 0.188 |  |  |  |
| # of Respondents | 1440 |  |  |  |
| Note: \*p<.1. \*\* p <.05. \*\*\*p<.01. | |  |  |  |

Figure ii.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Robustness Check One: Probit Vote Turnout conditional upon registration=yes 2012 | | | | | | |
|  | | | | |
|  |  |  | Standard | |
|  | Coefficient |  | Error |  |
| South | -0.232 | \*\* | 0.113 |  |
| Black | 0.151 |  | 0.144 |  |
| Female | 0.065 |  | 0.113 |  |
| Income NR | 0.457 |  | 0.317 |  |
| Income 0-20% | -0.082 |  | 0.192 |  |
| Income 20-40% | -0.017 |  | 0.175 |  |
| Income 40-60% | -0.108 |  | 0.172 |  |
| Income 60-80% | -0.155 |  | 0.172 |  |
| Education | -0.005 |  | 0.026 |  |
| Time in Home | 0.091 | \*\*\* | 0.030 |  |
| Age | 0.129 | \* | 0.078 |  |
| Age 2 | -0.008 |  | 0.005 |  |
| Religiosity | 0.080 | \*\* | 0.036 |  |
| Group Affinity | 0.103 |  | 0.111 |  |
| Marriage | 0.063 |  | 0.127 |  |
| Home Ownership | 0.198 |  | 0.139 |  |
| Time in Town | -0.009 | \* | 0.005 |  |
| External Efficacy Score | 0.658 | \*\* | 0.324 |  |
| Internal Efficacy Score | 0.386 | \* | 0.213 |  |
| Party Preference | 0.185 |  | 0.121 |  |
| Partisan Intensity | 0.112 | \* | 0.058 |  |
| Trust In Gov't | -0.246 |  | 0.293 |  |
| Candidate Differential Score | -0.002 |  | 0.003 |  |
| Candidate Satisfaction Score | -0.366 | \*\* | 0.154 |  |
| Constant | -0.652 |  | 0.453 |  |
|  |  |  |  |  |
| Pseudo R2 | 0.111 |  |  |  |
| # of Respondents | 1279 |  |  |  |
| Note: \*p<.1. \*\* p <.05. \*\*\*p<.01. | |  |  |  |

Figure iii.

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Validated Turnout Selection Bias Model with clustered Standard Errors 2012 | | | | | | |  |  |
| Clustered for 40 states |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
|  | Registration | | Standard |  | Turnout |  | Standard | |
|  | Coefficient | | Error |  | Coefficient | | Error |  |
| Residential Requirement | 0.562 | \*\*\* | 0.178 |  | - |  | - |  |
| Closing Date | 0.011 |  | 0.007 |  | - |  | - |  |
| South | -0.042 |  | 0.137 |  | -0.236 | \* | 0.125 |  |
| Black | 0.239 | \* | 0.131 |  | 0.118 |  | 0.170 |  |
| Female | 0.120 |  | 0.109 |  | 0.061 |  | 0.105 |  |
| Income NR | 0.354 |  | 0.263 |  | 0.416 |  | 0.306 |  |
| Income 0-20% | -0.213 |  | 0.207 |  | -0.083 |  | 0.205 |  |
| Income 20-40% | -0.411 | \*\* | 0.209 |  | 0.039 |  | 0.139 |  |
| Income 40-60% | -0.076 |  | 0.159 |  | -0.108 |  | 0.152 |  |
| Income 60-80% | -0.164 |  | 0.199 |  | -0.143 |  | 0.177 |  |
| Education | 0.064 | \*\* | 0.029 |  | -0.007 |  | 0.024 |  |
| Time in Home | 0.101 | \*\*\* | 0.031 |  | 0.075 | \*\* | 0.030 |  |
| Age | -0.283 | \*\*\* | 0.082 |  | 0.165 | \*\* | 0.082 |  |
| Age 2 | 0.021 | \*\*\* | 0.006 |  | -0.010 | \* | 0.005 |  |
| Religiosity | 0.016 |  | 0.049 |  | 0.073 | \*\* | 0.035 |  |
| Group Affinity | 0.176 |  | 0.150 |  | 0.080 |  | 0.143 |  |
| Marriage | 0.203 |  | 0.156 |  | 0.032 |  | 0.119 |  |
| Home Ownership | -0.079 |  | 0.176 |  | 0.172 |  | 0.150 |  |
| Time in Town | -0.003 |  | 0.006 |  | -0.007 | \* | 0.004 |  |
| External Efficacy Score | 0.211 |  | 0.327 |  | 0.652 | \*\* | 0.332 |  |
| Internal Efficacy Score | 0.384 | \* | 0.201 |  | 0.325 | \*\* | 0.160 |  |
| Party Preference | 0.203 |  | 0.140 |  | 0.159 |  | 0.110 |  |
| Partisan Intensity | 0.266 | \*\*\* | 0.081 |  | 0.071 |  | 0.071 |  |
| Trust In Gov't | -0.660 | \*\*\* | 0.249 |  | -0.130 |  | 0.339 |  |
| Candidate Differential Score | 0.001 |  | 0.002 |  | -0.002 |  | 0.002 |  |
| Candidate Satisfaction Score | -0.198 |  | 0.155 |  | -0.310 | \* | 0.163 |  |
| Constant | -0.230 |  | 0.540 |  | -0.474 |  | 0.456 |  |
|  |  |  |  |  |  |  |  |  |
| RHO | -0.613 |  | 0.284 |  |  |  |  |  |
| # of Respondents | 1440 |  |  |  |  |  |  |  |
| Note: \*p<.1. \*\* p <.05. \*\*\*p<.01. | |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |

Figure iv.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Robustness Check One: Probit Registration & State Level Variables 2014 | | | | | |
|  |  |  | Standard | |  |
|  | Coefficient | | Error |  |  |
| Residential Requirement | 0.071 |  | 0.051 |  |  |
| Closing Date | 0.001 |  | 0.002 |  |  |
| South | -0.036 |  | 0.037 |  |  |
| Black | 0.001 |  | 0.054 |  |  |
| Female | -0.072 | \*\* | 0.029 |  |  |
| Income NR | 0.011 |  | 0.064 |  |  |
| Income 0-20% | -0.090 |  | 0.058 |  |  |
| Income 20-40% | -0.030 |  | 0.055 |  |  |
| Income 40-60% | 0.030 |  | 0.056 |  |  |
| Income 60-80% | 0.001 |  | 0.055 |  |  |
| Education | 0.116 | \*\*\* | 0.011 |  |  |
| Time in Home | 0.065 | \*\* | 0.033 |  |  |
| Age | 0.024 | \*\*\* | 0.005 |  |  |
| Age 2 | 0.000 | \*\* | 0.000 |  |  |
| Religiosity | 0.017 | \* | 0.009 |  |  |
| Marriage | -0.062 | \* | 0.034 |  |  |
| Home Ownership | 0.122 | \*\*\* | 0.035 |  |  |
| Partisan Intensity | 0.119 | \*\*\* | 0.014 |  |  |
| Ideological Intensity | 0.051 | \*\* | 0.021 |  |  |
| Have Children | -0.079 | \*\* | 0.037 |  |  |
| Campaign Contact | 0.497 | \*\*\* | 0.029 |  |  |
| Constant | -0.377 | \*\* | 0.147 |  |  |
|  |  |  |  |  |  |
| Pseudo R2 | 0.115 |  |  |  |  |
| # of Respondents | 31984 |  |  |  |  |
| Note: \*p<.1. \*\* p <.05. \*\*\*p<.01. | |  |  |  |  |

Figure v.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Robustness Check One: Probit Vote Turnout conditional upon registration=yes 2014 | | | | | | |
|  |  |  | Standard | |  |  |
|  | Coefficient | | Error |  |  |  |
| South | -0.023 |  | 0.031 |  |  |  |
| Black | -0.299 | \*\*\* | 0.051 |  |  |  |
| Female | -0.177 | \*\*\* | 0.028 |  |  |  |
| Income NR | 0.127 | \*\* | 0.065 |  |  |  |
| Income 0-20% | -0.162 | \*\*\* | 0.059 |  |  |  |
| Income 20-40% | -0.125 | \*\* | 0.056 |  |  |  |
| Income 40-60% | -0.049 |  | 0.058 |  |  |  |
| Income 60-80% | -0.007 |  | 0.053 |  |  |  |
| Education | 0.126 | \*\*\* | 0.011 |  |  |  |
| Time in Home | 0.189 | \*\*\* | 0.033 |  |  |  |
| Age | 0.019 | \*\*\* | 0.007 |  |  |  |
| Age 2 | 0.000 |  | 0.000 |  |  |  |
| Religiosity | 0.016 | \* | 0.008 |  |  |  |
| Marriage | 0.044 |  | 0.033 |  |  |  |
| Home Ownership | 0.102 | \*\*\* | 0.034 |  |  |  |
| Partisan Intensity | 0.083 | \*\*\* | 0.014 |  |  |  |
| Ideological Intensity | 0.123 | \*\*\* | 0.021 |  |  |  |
| Have Children | -0.218 | \*\*\* | 0.036 |  |  |  |
| Campaign Contact | 0.395 | \*\*\* | 0.028 |  |  |  |
| Constant | -0.909 | \*\*\* | 0.165 |  |  |  |
|  |  |  |  |  |  |  |
| Pseudo R2 |  |  |  |  |  |  |
| # of Respondents |  |  |  |  |  |  |
| Note: \*p<.1. \*\* p <.05. \*\*\*p<.01. |  |  |  |  |  |  |

Figure vi.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Heckman Validated Vote and turnout with Clustered Standard Errors 2014 | | | | | |  |  |
| Std. Error Adjusted for 49 state clusters | |  |  |  |  |  |  |
|  | Registration | | Standard | | Turnout |  | Standard |
|  | Coefficient | | Error |  | Coefficient | | Error |
| Residential Requirement | 0.062 |  | 0.094 |  | - |  | - |
| Closing Date | -0.001 |  | 0.003 |  | - |  | - |
| South | -0.036 |  | 0.061 |  | -0.015 |  | 0.057 |
| Black | 0.009 |  | 0.072 |  | -0.274 | \*\*\* | 0.051 |
| Female | -0.071 |  | 0.044 |  | -0.164 | \*\*\* | 0.035 |
| Income NR | 0.015 |  | 0.057 |  | 0.142 | \*\* | 0.064 |
| Income 0-20% | -0.089 |  | 0.061 |  | -0.136 | \*\* | 0.062 |
| Income 20-40% | -0.036 |  | 0.057 |  | -0.114 | \*\* | 0.052 |
| Income 40-60% | 0.031 |  | 0.056 |  | -0.047 |  | 0.050 |
| Income 60-80% | -0.007 |  | 0.054 |  | 0.000 |  | 0.057 |
| Education | 0.116 | \*\*\* | 0.011 |  | 0.110 | \*\*\* | 0.011 |
| Time in Home | 0.068 | \* | 0.036 |  | 0.177 | \*\*\* | 0.044 |
| Age | 0.024 | \*\*\* | 0.005 |  | 0.013 |  | 0.010 |
| Age 2 | 0.000 | \*\*\* | 0.000 |  | 0.000 |  | 0.000 |
| Religiosity | 0.017 |  | 0.011 |  | 0.012 |  | 0.007 |
| Marriage | -0.069 | \* | 0.040 |  | 0.058 | \*\* | 0.029 |
| Home Ownership | 0.125 | \*\*\* | 0.033 |  | 0.084 | \*\* | 0.035 |
| Partisan Intensity | 0.117 | \*\*\* | 0.015 |  | 0.065 | \*\*\* | 0.020 |
| Ideological Intensity | 0.054 | \*\* | 0.021 |  | 0.111 | \*\*\* | 0.020 |
| Have Children | -0.082 | \*\* | 0.038 |  | -0.198 | \*\*\* | 0.048 |
| Campaign Contact | 0.495 | \*\*\* | 0.036 |  | 0.323 | \*\*\* | 0.051 |
| Constant | -0.334 | \*\* | 0.148 |  | -0.533 | \* | 0.283 |
|  |  |  |  |  |  |  |  |
| RHO | -0.647 |  | 0.574 |  |  |  |  |
| # of Respondents | 31984 |  |  |  |  |  |  |
| Note: \*p<.1. \*\* p <.05. \*\*\*p<.01. | |  |  |  |  |  |  |