

Assessing Internet Voting as an Early Voting Reform in the United States

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Abstract: Recent research on convenience voting reforms in the United States has found that programs designed to make voting easier have not succeeded in boosting turnout, and have even had the unintended consequence of exacerbating the demographic biases that already exist in the electorate by encouraging votes among those who were most likely to vote anyway but who were inconvenienced by going to the polls on election day. Using public voting records and a unique dataset of Internet voters in the 2004 Michigan Democratic Presidential primary, this paper offers new evidence that Internet voting benefits two groups of people: young voters and people who vote infrequently. Like previous research on voting reforms, I also find evidence that Internet voting does not draw new voters into the electorate. I discuss the implications of these findings for the future of early voting reforms in general and Internet voting in particular.

1 Introduction

Americans routinely use the Internet for banking, commerce, social networking, and even paying taxes, but they have not been able to use the Internet for voting in elections for public office. At a time when Internet use is widespread and voting systems are being reassessed in nearly every state, and when Internet voting has been successfully tested in European countries at the local and even national level, why has Internet voting not been introduced in state administered elections in the US? Although state and local election administrators have not embarked on tests of Internet voting, state political parties have used Internet voting in two binding state-wide elections. These trials, held in 2000 in Arizona and 2004 in Michigan, can provide important information about the feasibility of Internet voting in future elections in the US. Before state election administrators can plan online voting trials, we must have a better understanding of the online elections that have already occurred in the US. This paper offers a better understanding of how Internet voting affects turnout among different demographic groups.

Recent studies of voting reforms have found that programs designed to make voting easier have had only small positive effects on turnout and have had the unintended consequence of exacerbating the demographic biases that already exist in the electorate [Be05; Tr04]. Convenience voting reforms such as vote-by-mail, no-excuse absentee voting, and in-person early voting have been shown to encourage votes among those voters who were most likely to cast a ballot anyway but were inconvenienced by having to go to the polls on election day. Internet voting is the newest innovation among these early voting reforms. However, there have been few opportunities to study Internet voting as an early voting reform in the United States. Findings from academic studies of Internet voting in Arizona in 2000 and Michigan in 2004 have been mixed on the effect Internet voting has on turnout among certain demographic groups [AN01; PS08].

Using public voting records and a unique dataset of individuals who participated in the 2004 Michigan Democratic Presidential primary, this paper examines the claims that Internet voting specifically and early voting reforms in general may only benefit those who were most likely to vote anyway. This research builds on previous studies of the effects of Internet voting as an early voting reform by offering an examination of voters at the individual level and incorporating voting history as an indicator of future voting behavior. I find that young people and people who vote infrequently benefit most from Internet voting. I also find that income is positively related to voting online, but race and education were not significant predictors of voting on the Internet.

This research adds to the body of knowledge on voting behavior by introducing new evidence on the effects of Internet voting as an early voting reform. This paper also incorporates the use of state voter files as an alternative to more traditional data sources for studying the effects of voting reforms on voter turnout. Similar research that uses public voting records includes Berinsky, Burns and Traugott [BBT01], in which the authors obtain individual vote history and confirm self-reported voting behavior from county records for a group of survey respondents. Public voting archives are readily available in most states, and are used regularly by political operatives, but seem to be rarely used by political scientists. Since the effects of voting reforms are often very small, it may be necessary to examine these reforms at the individual level, as Berinsky, Burns and Traugott argue [BBT01].

I begin with a review of the research on early voting reforms in general and the limited trails of online voting in the US. I then summarize the details of the unique dataset that I employ, including information about the 2004 Michigan Democratic primary, and describe the methods that I will use to evaluate Internet voting. Finally, I present the results of a multinomial logit regression model and discuss the implications of these findings for the future of Internet voting as an early voting reform.

2 Literature Review

2.1 Poor Marks for Voting Reforms

In recent years, political science research on reforms to make voting easier has been nearly unanimous in concluding that the reforms have not met their stated goals of increasing turnout and improving the representativeness of the electorate. Paul Gronke's overview of voting reforms argues that scholarly consensus has been reached on this point: "Early voting does not increase turnout by bringing new voters into the system. What it does is encourage regular voters to participate in lower intensity contests that they might otherwise skip" [Gr04]. Berinsky [Be05] and Traugott [Tr04] offer similar reviews of the political science literature on voting reforms with the same conclusion: that voting reforms have not achieved the goals that the reformers had in mind, and in fact the demographic representativeness of the electorate is actually worsened by easy voting reforms since "more of the same" voters – that is, highly educated, older, and richer voters – are even more likely to turn out using easy voting methods.

Berinsky [Be05] reviews the literature on voting reforms and concludes that they have had "perverse consequences" in that they have encouraged the people who were most likely to vote anyway (those who have higher incomes and are more educated) but were inconvenienced by going to a polling place on election day. Traugott [Tr04] argues that electoral reform has failed because it has not achieved the goals of substantial increases in turnout or greater socioeconomic diversity in the electorate. These findings are important because they show that groups who have always been underrepresented in the electorate – the poor, people without college degrees, and young adults – may become an even smaller percentage of the electorate, as easy voting reforms encourage more voters with higher incomes and more education to turn out, and mail balloting encourages more older voters to turn out. In addition, these findings might also bolster the arguments of policy makers who are opposed to expanding early voting options. Given the potential implications of these findings for policy makers and election administrators, it is important that analyses of voting reforms be conducted with the best evidence available and at the lowest level of aggregation possible in order to make inferences about the effects on individual voters. However, much of the empirical research on voting reforms has relied on evidence that might not be generalizable to individual voters. Previous studies have used survey data [NR01], exit polls [SG97], and aggregate data [AN01; Gi02]; all of which are problematic for making generalizations about individual voters. Although these studies have contributed important findings about the effects of early voting reforms, it is important to recognize the possible limitations of using aggregate data or unverified survey responses to make public policy decisions. Telephone surveys are increasingly unreliable because of the high no-response rate, and respondents tend to over-report turnout [TK79]. Exit polls only survey voters (by definition they leave out the non-voters who are not at the polls), and aggregating voter turnout data at high levels makes it difficult to make inferences about individual voters.

Studies of Internet voting use self-reported telephone survey responses [So01], or turnout aggregated at the county level [Gi02; AN01], which is a high level of aggregation and therefore not an accurate estimator of individual-level information. One of the strongest arguments against Internet voting is that it is biased against racial and ethnic minorities and citizens of lower socioeconomic status, since these groups have less access to the Internet. This claim has largely been supported by the existing academic literature on Internet voting, including the finding that the decrease in turnout was five times as great for non-white voters in the Internet voting election in Arizona [AN01]. However, the authors of that study use data and demographic variables (including race) aggregated at the county level. Since there are only 15 counties in the state of Arizona, this is a particularly high level of aggregation. Another study of Internet voting that uses individual level information about voters in the 2004 Michigan primary found that race was not a strong predictor of choosing Internet over mail voting, but it was a factor in the choice of applying to vote early [PS08].

The analysis conducted in this paper extends the research of Prevost and Schaffner [PS08], which examined the pool of voters who participated in the 2004 Michigan Democratic primary to see if there were differences in the demographic characteristics of those who voted on the Internet, by mail, or in-person. Prevost and Schaffner [PS08] found that voters in predominately African American zip codes were somewhat less likely to vote on the Internet than voters in predominately white zip codes, but not by margins as large as some critics of Internet voting suggested. The authors also found that young people were most likely to take advantage of Internet voting, while older voters were more likely to take advantage of voting by mail.

2.2 Individual Voting History and the Likelihood of Voting

State voter files can show the relationship between voting history and the use of easy voting methods. The theory that infrequent or first time voters can be enticed into the electorate by easy voting reforms can be tested empirically using public voting records. Berinksy, Burns, and Traugott develop a duration model to see if individual vote history has an effect on whether voters will participate in Oregon's vote-by-mail system [BBT01]. They find that voting-by-mail encourages occasional voters who are older, well educated, and those with higher levels of interest in the campaign. They also find that habitual non-voters are not drawn into the electorate by the easy vote-by-mail system.

Given that voter history has an effect on future voting behavior, Berinsky [Be05] proposes a two-part conception of the electorate, in which he considers both the stimulation of new or infrequent voters and the retention of other voters from election to election. He contends that electoral reforms will have a greater effect on the retention of voters than on the stimulation of new voters. Berinsky reasons that electoral reforms “increase the propensity of likely voters to consistently turnout by smoothing over the idiosyncrasies that cause engaged citizens to sometimes miss casting their votes in particular elections” [Be05: 477]. He suggests that to properly observe the effects of voting reforms on the composition of the electorate, we should analyze individual-level data over time to see if easy voting methods are used by regular voters (retention) or infrequent voters (stimulation). However, the only research he cites that uses individual-level data over time is a study of voting by mail in Oregon [BBT01].

Other empirical research supports the claim that those who have voted previously are more likely to vote in the future. Green et al [GGS03] find that voting in one election substantially increases the likelihood of voting in a subsequent election. The authors find voter history to have a greater effect than education and age in predicting whether an individual will turn out to vote. Using a randomized field experiment, they find that voting in 1998 increased the probability of voting in 1999 by 46.7 percentage points [GGS03: 547]. These findings suggest that vote history is an important variable in any model predicting voting behavior, but it has rarely been used in political science studies of voting behavior. Two exceptions where individual voting history has been used are Plutzer [P102] and Berinsky, Burns and Traugott [BBT01]. Using panel data spanning several decades, Plutzer finds that voting (and non-voting) is “habitual” – once a person starts voting she is likely to continue doing so [P102]. Using individual level voting history from public voting records, I analyze the effects of voting history on the propensity to use Internet voting as an early voting method.

3 Description of the 2004 Michigan Democratic Presidential Primary

The 2004 Democratic presidential nominating contest in Michigan has been called a caucus, a firehouse primary, and a party-run primary. The Democratic National Committee (DNC) officially defined it as a party-run primary, because it had many features of a primary, including an option for absentee voting, so it is referred to as a primary in this paper. The contest had some features of a caucus, including the fact that ballots cast were not secret. This feature allowed the Michigan Democratic Party (MDP), which administered the election, to circumvent many of the security concerns associated with Internet voting, since it allowed each voter to be assigned a unique identification and PIN number. In order to participate in the party-run primary, an individual could either apply for an absentee ballot or vote in person on election day. The absentee ballot application could be accessed on the MDP website, and several presidential campaigns also distributed them to supporters. The application could then be completed online, or printed and sent by mail or fax to the MDP. Once the application was received by MDP staff, it was checked against the state voter file for accuracy, so a person applying for an absentee ballot had to be a registered voter in the state. Alternatively, a person could decide on election day to vote in person at a caucus location without having taken any prior action.

In many ways, the Michigan Internet ballot was much like a traditional absentee ballot that a voter would send in a secrecy envelope to prevent election workers from seeing for whom a particular individual is voting. Media reports of the Michigan primary did not mention voters being concerned with privacy violations. It may be the case that voters who choose to vote absentee have come to accept that there is a possibility that an election worker will see their vote choice, and that is an acceptable cost given the benefit of being able to vote early or from home. 162,929 voters participated in the 2004 Michigan Democratic primary. 28.4% voted by Internet, 14.5% voted by traditional mail-in absentee, and 57.1% voted in-person at a caucus location on election day.

Michigan does not require a voter to declare a party affiliation when registering to vote. One implication of this is that the state has an open primary system – a voter can take a ballot for either party's primary, which means that Republicans can vote in Democratic primaries, and vice versa. This violates the rules of the Democratic National Committee, and so the Democratic party in Michigan has been forced to administer party-run primaries or caucuses for its presidential nominating contests.

4 Data and Methods

Two datasets serve as the empirical evidence for this analysis: the Michigan Qualified Voter File and turnout data from the 2004 Michigan Democratic Primary. The Michigan Voter File is publicly available from the Michigan Secretary of State. It contains individual-level information about the voting behavior of each of the approximately 7 million voters who are currently registered in the state, including name, address, gender, date of birth, and voting history for every state administered election. However, since the 2004 Democratic Primary was a party-run election, which was administered by the state Democratic party, voter history information for this election is not included on the state voter file.

Turnout data from the 2004 Michigan Democratic primary was provided by the MDP. It contains individual level-information for the approximately 162,000 voters who participated, including name, address, and choice of voting method: Internet, mail, or in-person. Ideally, the data from the 2004 Michigan Democratic primary would be compared to only Democrats on the state voter file, in order to make inferences about who participated in the 2004 Caucus and who was eligible to participate (since only Democrats were supposed to participate, according to MDP guidelines for voting in the primary, although a small number of self-identified Republicans and independents participated). However, since there is no party affiliation on the state voter file, there is no easy way to determine which voters are Democrats. To account for this, and to simulate a measure of party affiliation, I include a control variable in the model that measures the vote for Gore in 2000 by each voter's state house district (adjusted for the 2002 round of redistricting).

The full state voter file contains close to seven million voters, which was too large a dataset for any computer or statistical package in my department to handle. To overcome the lack of computing power, I generated a random sample of one million voters from the state voter file. Although the accuracy of the analysis might be marginally better if I were able to examine all of the 162,000 voters in the Michigan primary in the context of all eligible or likely voters in the state, a sample of one million is still many times larger than any other similar study of the effects of voting reforms. After merging the turnout data from the 2004 Democratic primary with the sample, there are 16,906 voters in the sample who participated in the 2004 primary. Table 1 includes summary statistics of the sample. The distribution of choice of voting method in the 2004 primary among voters in the sample is similar to the distribution of choice of voting methods among the entire population of primary voters.

Variable	Frequency	% of sample
2004 Michigan Democratic Primary ¹	16,906	1.7
In-person	9,181	0.94
Internet	4,972	0.51
Mail	2,753	0.28
Gender ²		
Women	514,813	53.6
Men	446,590	46.4
Age ²		
18-35	296,103	30.8
36-50	306,693	32.0
51-65	214,634	22.3
66 and over	139,766	14.5
Education ³		
0-25% college degree in zip code	487,500	50.71
26-50% college degree in zip code	389,583	40.52
51-75% college degree in zip code	75,963	7.90
76% or more college degree in zip code	8,444	0.88
Race ³		
0-25% Black in zip code	823,502	85.66
26-50% Black in zip code	34,769	3.62
51-75% Black in zip code	31,649	3.29
76% or more Black in zip code	67,603	7.03

N = 961,403 ⁴

Table 1: Descriptive Statistics for Random Sample of One Million Voters taken from the Michigan Qualified Voter File

¹2004 Michigan Democratic Primary participation data is from the Michigan Democratic Party.

²Gender and age variables are from the Michigan Qualified Voter File.

³Education and race variables are from the 2000 US Census, aggregated at the zip code level and assigned to each voter according to the voter's zip code.

⁴Final sample size is less than one million because some observations were dropped due to missing demographic data.

The individual-level data provided by the Michigan voter file and the MDP include each voter's name, address, zip code, date of birth, gender, voting history in state-run elections, and whether and by what method they participated in the 2004 primary. The demographic variables I am interested in are not easily available at the individual level. As a substitute for individual-level indicators of race, income, and education, I collected Census data aggregated at the zip code level, and assigned a measure to each voter based on their zip code of residence. Although aggregating at the zip code level is not a perfect substitute for individual-level measures, which are often available with survey data, the zip-code level is a relatively small level of aggregation compared to congressional district level or county level that have been used in other studies of voter turnout. The zip-code level has been used regularly in health research [GBN96] and it may also be a particularly good substitute in Michigan, which has been noted for its high level of racial segregation [DK00]. Still, it is important to highlight the point that the measures for race, education, and income in this study are aggregate level measures and should not be interpreted as substitutes for individual-level measures. Future extensions of this research could include Census data at a lower level of aggregation, such as the block level, since the dataset includes each voter's full address. This could add to the validity of the findings on the relationship between demographic characteristics and the use of Internet voting.

Instead of using a duration model to explain the relationship between voting history and the effectiveness of early voting reforms, as Berinsky, Burns and Traugott do [BBT01], this paper operationalizes voting history as a series of dummy variables. Table 2 summarizes the characteristics of each category of voting history.

	In-Person	Internet	Mail	Abstain
Nonvoter (voted in no previous elections since 1998)	1,079 (61)	464 (26)	216 (13)	423,374
Infrequent voter (voted in 1 general but no primaries)	7,766 (54)	4,273 (30)	2,432 (17)	402,568
Occasional voter (voted in at least 1 primary)	6,786 (54)	3,542 (28)	2,197 (18)	239,571
Regular voter (voted in last 3 elections)	5,733 (54)	2,986 (28)	1,943 (18)	160,342
Absentee voter (voted absentee in at least one election since 1998)	3,126 (46)	2,025 (30)	1,573 (23)	152,790

Source: Vote history is from the Michigan Qualified Voter File and choice of voting method (In-Person, Internet, or Mail) is from the Michigan Democratic Party.

Note: Number in parentheses is the percent of people participating in the 2004 Michigan Democratic Primary who voted by each method.

Table 2: Voting History by Choice of Voting Method in the 2004 Michigan Democratic Presidential Primary

As shown in table 2, a “nonvoter” in this analysis is someone who did not vote in any of the following elections; the 1998 primary and general election, the 2000 primary and general election, and the 2002 primary and general election. An “infrequent” voter is defined as someone who voted in one general election but no primaries. An “occasional” voter is someone who voted in at least one primary election, and a “regular” voter is someone who voted in each of the most previous three elections before the 2004 primary.

The dependent variable in the turnout model is the decision to vote in the 2004 Democratic caucus, either by Internet, mail, in-person on election day, or to abstain. Since it is a categorical dependent variable with no particular order to the categories, multinomial logit is the appropriate estimator. The independent variables of interest are voting history, age, gender, education, income, and race. Based on the findings of Alvarez and Nagler [AN01] I expect to find that as the percentage of white residents increases in a zip code, the likelihood of voting by Internet should also increase. I also expect that as median income and percent of residents with a college degree increases, the percentage of Internet voters should increase. As the age of the voter increases, I expect the likelihood to vote by Internet to decrease and the likelihood to vote by mail to increase.

Based on the findings of Gerber et al [GGS03], I expect regular voters to be more likely to participate in the 2004 primary, and that regular voters will be more likely to vote by early voting methods. Based on the findings of Berinsky, Burns and Traugott [BBT01] I expect to find that either infrequent or occasional voters will be the most likely to take advantage of Internet and mail voting, but that nonvoters will not take advantage of these easy voting methods, either because they are habitual non-voters, because they have not been mobilized by parties or candidates [RH93; OI96], or because they did not have the foresight to apply for an absentee ballot [PS08].

5 Results

	Entire Random Sample of 1 million voters taken from the Michigan Voter File (N=961,403)						Voters in sample who participated in the 2004 Michigan Democratic Primary (N=16,906)			
	<i>In Person vs. not voting</i>		<i>Internet vs. not voting</i>		<i>Mail vs. not voting</i>		<i>Internet vs. in person</i>		<i>Mail vs. in person</i>	
Age of Voter ¹	.023*	(.001)	.013*	(.002)	.041*	(.003)	-.006**	(.003)	.025*	(.004)
Median Income ²	-.014*	(.001)	-.003	(.001)	-.008*	(.001)	.013*	(.001)	.007*	(.002)
Percent College Educated ²	.034*	(.002)	.038	(.001)	.029*	(.004)	.004	(.003)	-.005	(.004)
Percent Black ²	.003*	(.001)	-.0002	(.001)	.003	(.002)	-.003	(.002)	-.001	(.002)
Female ¹	-.046**	(.021)	-.146*	(.029)	.138*	(.039)	-.120*	(.036)	.210*	(.045)
2000 Gore Vote ³	1.63*	(.103)	1.72*	(.130)	1.56*	(.182)	.196	(.188)	.032	(.232)
Non-voter ⁴	.476*	(.066)	-.109	(.083)	.171	(.125)	-.560*	(.106)	-.482*	(.142)
Infrequent voter ⁴	2.51*	(.124)	2.61*	(.169)	2.01*	(.255)	.719*	(.213)	-.652**	(.304)
Occasional voter ⁴	1.52*	(.032)	1.39*	(.038)	1.56*	(.061)	-.133*	(.051)	.034	(.069)
Regular Voter (suppressed category) ⁴										
Age X infrequent	-.018*	(.002)	-.029*	(.002)	-.017*	(.003)	-.020*	(.003)	.001	(.004)
Education X infrequent	-.008*	(.001)	-.001	(.002)	.002	(.004)	.006	(.003)	.009**	(.004)
Black X infrequent	-.008	(.002)	-.003	(.001)	-.001	(.002)	-.004**	(.002)	.000	(.002)
Constant	-.786*	(.089)	-9.22*	(.172)	-11.2*	(.259)	-.759*	(.222)	-2.73*	(.309)
Pseudo R ²	0.126						.048			

* $p < .01$ ** $p < .05$

Note: 2004 Michigan Democratic Primary participation data is from the Michigan Democratic Party.

Table 3: Likelihood of voting in the 2004 Democratic caucus by Internet, mail, or in-person, compared to not voting – Multinomial Logit Regression Coefficients and Standard Errors

¹Gender and age variables are from the Michigan Qualified Voter File.

²Education and race variables are from the 2000 US Census, aggregated at the zip code level and assigned to each voter according to the voter's zip code.

³2000 Presidential vote by State House District provided by Brian F. Schaffner.

⁴Voting history is from the Michigan Qualified Voter File. "Nonvoter" is someone who did not participate in any elections archived on the voter file since 1998; "Infrequent voter" is someone who participated in one general election but no primaries since 1998; "Occasional voter" is someone who participated in at least one primary election; and "Regular voter" is someone who participated in each of the last three state-wide elections before the 2004 primary.

Table 3 displays the results of two multinomial logit models. The first model includes the entire sample of one million voters; the second includes only the voters in the sample who participated in the 2004 Michigan primary. The first model uses “did not vote” as the base comparison category, since a large majority of voters in the full sample did not participate in the 2004 primary. The second model uses “voted in person” as the base category, since the majority of participants in the 2004 primary voted in person on election day.

In both models, the effects of age, income, gender, and all categories of voting history are significant at the .01 level. The interpretation of the findings that follows will focus on the second model, since I am mostly interested in voters who participated in the 2004 primary. As expected, the median income in a voter’s zip code is significant and positively related to voting early. As income increases, the likelihood of voting early either by Internet or mail increases. The relationship between income and the likelihood of voting by Internet, mail, or in person, holding other variables in the model at their means, is displayed in Figure 1.

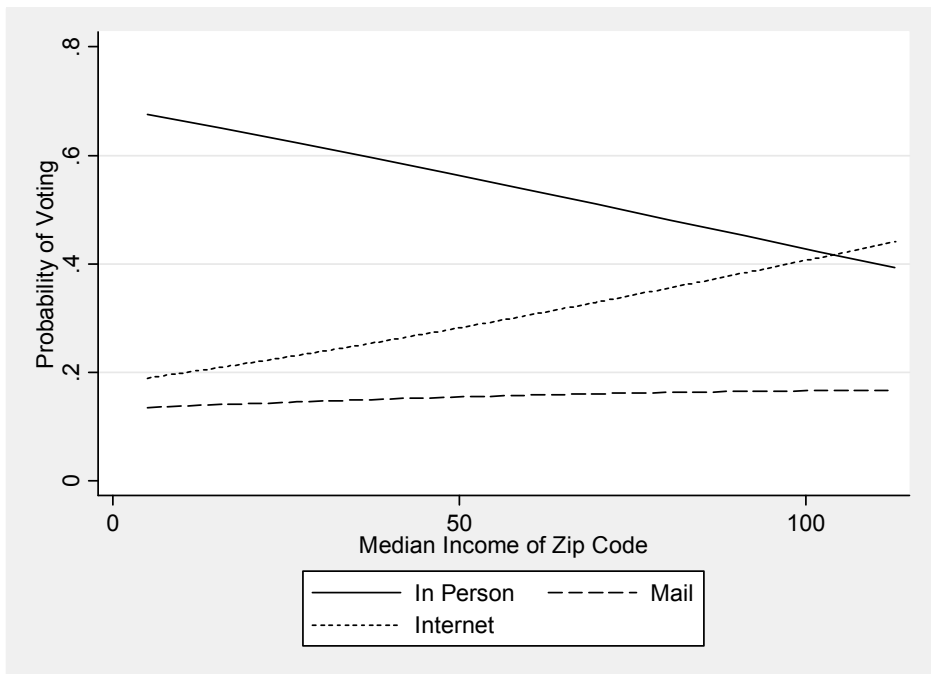


Figure 1: Probability of Voting by Internet, Mail, or In Person by the Median Income in the Voter’s Zip Code

Also as expected, as a voter's age increases, he is more likely to choose voting by mail and less likely to choose Internet voting. This result is shown in Figure 2. As a voter's age increases, the likelihood of choosing to vote by mail increases substantially, while the likelihood of voting by Internet or in person decreases at a more gradual rate. The effect of age on the likelihood to vote by Internet may not be surprising to young people, who are probably the to most comfortable out any age group with using the Internet, but it is important for the study of early voting reforms. Other studies of early voting reforms, especially voting by mail, have found that older voters are more likely to benefit from early voting reforms. This research shows that young voters benefit from the option to vote on the Internet.

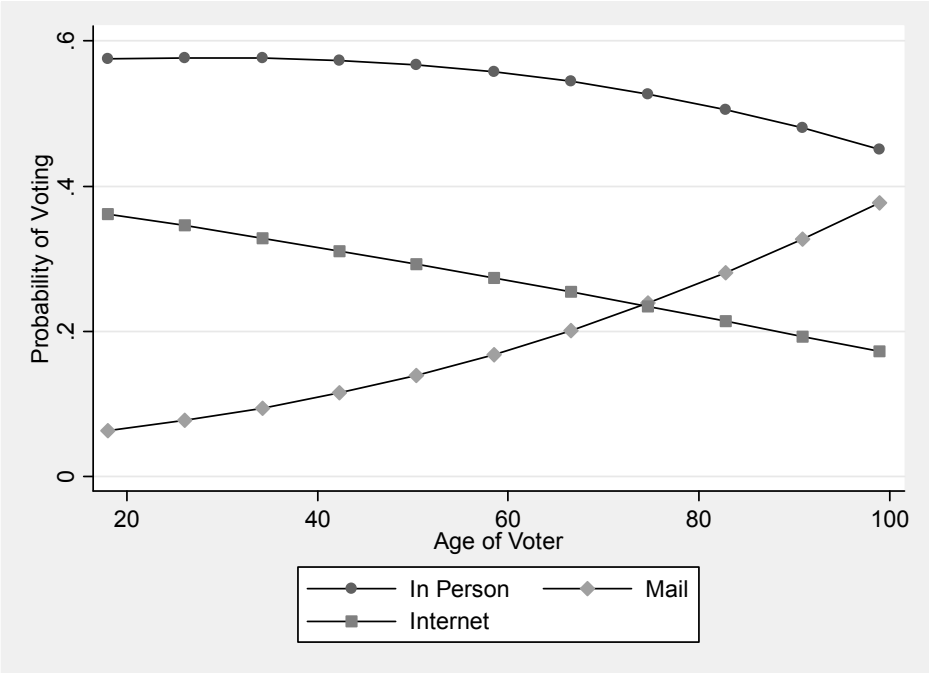


Figure 2: Probability of Voting by Internet, Mail, or In-Person by Age of Voter

The dummy variables for nonvoter, infrequent voter, and occasional voter are statistically significant at the .01 level in both models (regular voter is the suppressed category). As expected, being designated as a “nonvoter” was strongly and negatively related to voting on the Internet or by mail in the second model. Being an “infrequent” voter (one who voted in one general election but no primaries) was strongly and positively related to voting on the Internet, but strongly and negatively related to voting by mail, when controlling for other factors in the model. On the other hand, being an “occasional” voter (one who had voted in at least one primary) was positively related to voting by mail but negatively related to voting by Internet, controlling for other factors in the model. These findings are similar to those of Berinsky, Burns, and Traugott [BBT01], who found that individuals who voted sporadically were more likely to benefit from Oregon’s vote-by-mail program. This model goes further to show that there is a difference between levels of frequency of voting. Infrequent voters were more likely to benefit from Internet voting, but occasional voters were more likely to benefit from mail voting. Figure 3 shows the predicted probabilities across the different categories of vote history for low and high values of a voter’s age.

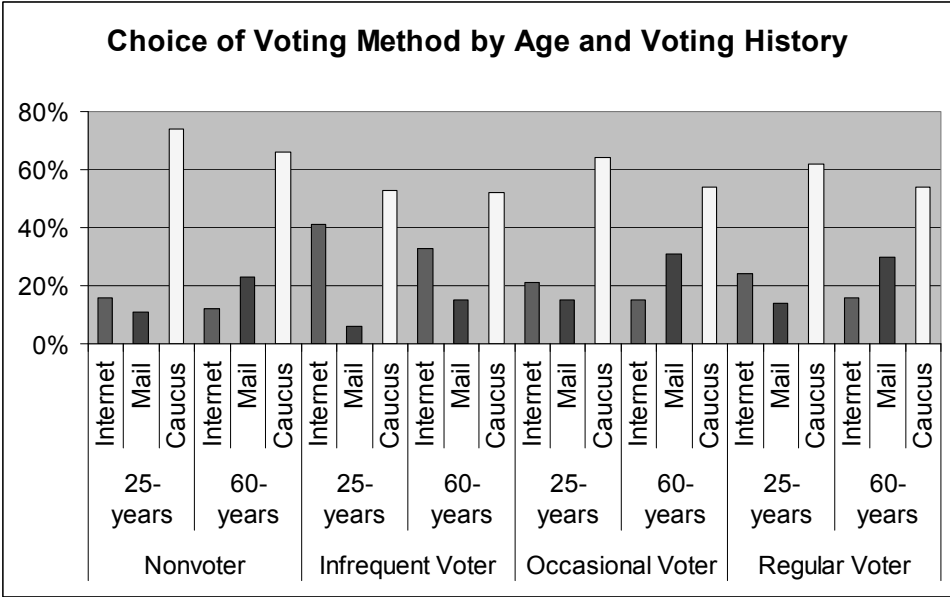


Figure 3: Predicting Choice of Voting Method for Voters Who Participated in the 2004 Michigan Democratic Primary, by Voter’s Age and Individual Voting History

Younger voters in almost every category of voting history were more likely than older voters to choose Internet voting, and older voters were more likely to choose mail voting in almost every category. The only category in which both younger and older voters were more likely to choose Internet voting was for infrequent voters. For infrequent voters, 25 year olds were 41% likely to vote on the Internet and only 6% likely to vote by mail, and 60 year olds were 33% likely to vote by Internet and 15% likely to vote by mail. Although I expected to find that young voters would be more likely to choose Internet voting, I did not expect older voters to choose Internet voting over mail voting. This unexpected finding suggests that for future applications of this research, the composition of the voting history categories should be tested for robustness. The limits of time and computing power prevented this research from testing any additional models. It is also clear from Figure 2 that voting in person was the most popular choice across all categories of age and voting history, and that nonvoters – those who had not participated in any previous elections since 1998 – were the most likely to vote in person on election day.

Two of the variables of interest, race and education, are not significant in the second model. In the first model, education is significant for the decision to vote in person versus not voting, but it is not significant for the choice to vote by Internet versus not voting. Race is only significant in the first model for the decision to vote in person versus not voting, but the effect is small. Both variables reach significance when they are interacted with voting history, which suggests that it is the combination of voting history and these demographic variables that has an effect on voting choice, but even here the effect is small. An infrequent voter living in a zip code that is 80% black has a 34% likelihood of voting on the Internet and a 13% likelihood of voting by mail, compared to an infrequent voter living in a zip code that is 20% black who is just one percentage point more likely to vote on the Internet and has the same likelihood of voting by mail.

6 Conclusion

This research shows that Internet voting as an early voting reform helps bring two groups into the electorate who might not otherwise have voted: young people and people who were infrequent voters. These findings are important for policy makers and election administrators to consider when evaluating new voting reforms, since they provide evidence that Internet voting can be effective at bringing young voters into the electorate. They are also important in light of the recent research on voting reforms, which have been almost unanimous in their findings that no new groups of voters are drawn into the electorate.

Since voting history has been shown to be an important predictor of future voting behavior, new studies of the effects of voting reforms on individual voters must include information about voting history. State voter registration files should be utilized by political scientists, as they are used by political professionals, to inform predictions and explanations about voting behavior and the effects of early voting reforms. The Help America Vote Act of 2002 has helped states streamline their voter registration databases, and these advances should aid political scientists in obtaining state voting archives that are suitable for research purposes.

Several state legislatures have proposed an expansion of no-excuse absentee mail programs, and some states are even considering adoption of all vote-by-mail systems like Oregon's. According to electiononline.org, a non-partisan election reform advocacy organization, there is legislation currently pending in 19 states to expand mail absentee voting programs. This research suggests that states should also consider implementing Internet voting as an absentee voting method, if the goal of reformers is to encourage voting among young people. This research also suggests that a switch to all mail voting programs could actually decrease turnout among young voters.

Of course there are many concerns about Internet voting that are not addressed in this paper, including security concerns that some scholars suggest are insurmountable in large-turnout public elections [Ca00]. However, I believe the implications for young voters are so important that more experiments with Internet voting as an early voting method should be tried. Alvarez and Hall agree that more controlled experiments with Internet voting should be designed and implemented in order to learn more about the effects on turnout among demographic groups and the potential security risks [AH04]. As an early voting method, Internet voting can be implemented in a way that is very similar to a traditional absentee ballot, as it was in the 2004 Michigan primary. The important distinction for young voters is that instead of going to a post office, voters go to a website to vote, and in this election that seems to have made a difference.

Appendix

Dependent Variable

Participation in the 2004 Michigan 4 categories, coded:

Democratic Presidential Primary 0 = Did not vote

1 = Voted in person

2 = Voted by Internet

3 = Voted by Mail

Explanatory Variables

Age Voter's age in years, taken from the birth year listed on the Michigan Qualified Voter File.

Gender Coded 0 for Male and 1 for Female, taken from the Michigan Voter File.

Income Median income in the voter's zip code of residence, in thousands, taken from the 2000 Census.

Education Percent college educated in the voter's zip code of residence, taken from the 2000 Census.

Race Percent African American in the voter's zip code of residence, taken from the 2000 Census.

Zip Code Voter's zip code of residence.

2000 Gore vote: Percent of the vote for Al Gore in 2000 by State House district, adjusted for the 2002 state legislative redistricting, provided by Brian F. Schaffner of American University.

Vote History Variables

Vote history data is from the Michigan Qualified Voter File and includes information for the following elections: 1998 primary and general, 2000 primary and general, 2002 primary and general.

Nonvoter: Coded 1 for individuals who did not participate in any of the elections taken from the state voter file; coded 0 otherwise.

Infrequent voter Coded 1 for individuals who participated in at least 1 general election but no primaries; coded 0 otherwise.

Occasional voter Coded 1 for individuals who participated in at least 1 primary election; coded 0 otherwise.

Regular voter Coded 1 for individuals who participated in all of the last 3 elections (the 2002 general and primary and the 2000 general); coded 0 otherwise.

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