

## Introduction

The Federal Voting Assistance Program's (FVAP) 2012 Post-Election Report to Congress stated that active duty military (ADM) members who used voting resources supplied by FVAP or the Department of Defense (DoD) were more likely to return their ballots. Previous FVAP-sponsored research found a relationship between the use of the FVAP website and the likelihood of an overseas ADM registering and voting.<sup>1</sup> However, because website users may differ from non-users in ways that are salient to voting and which could not be accounted for given the limited information in the 2012 Post-Election Voting (PEV) Survey of the Active Duty Military, the report did not claim that website use actually caused the higher rate of voting.

This research note examines aspects of this relationship by exploring the impact that the FVAP website redesign – which occurred between the 2008 and 2012 elections – had on overseas ADM voter participation. This redesign was intended to make the website more informative with respect to State-specific laws as well as provide the materials necessary to submit absentee ballot requests. It also contained a new interactive feature for completing a Federal Write-in Absentee Ballot (FWAB) and Federal Post Card Application (FPCA). Because the redesign made the website a more effective resource for potential ADM voters, data from both the 2008 and 2012 Post-Election Voting Surveys of the Active Duty Military are used to examine whether the difference in voting rates between website users and non-users changed from 2008 to 2012.

This research note is focused exclusively on respondents to the 2008 and 2012 Post-Election Surveys who were active duty military serving overseas at the time of each election.

In both 2008 and 2012, website users were more likely to vote than non-users. In 2012 this difference was much larger than in 2008, consistent with the website becoming more effective between those two presidential elections. Website use also had a larger, positive association with use of the Federal Post Card Application (FPCA) and FWAB in 2012 compared to 2008, as would be expected if the website were more functional and effective.<sup>2</sup>

## The FVAP Website and its Redesign

For many U.S. citizens, the act of voting can be a complicated process. In order to vote, individuals have to navigate several obstacles. A voter will need to register, become informed about the election's candidates and issues, and ultimately vote in the election, either in person or with an absentee ballot.<sup>3</sup> This process causes complications for many civilian voters, and these difficulties are amplified for military personnel, who are often away from their home voting jurisdiction (Alvarez, Hall & Roberts, 2007; Inbody, 2015). Military personnel typically have to request absentee ballots for the election, have them delivered physically or electronically to the areas where they are located, and then return the ballots in a manner consistent with the laws of his or her voting jurisdiction. These added steps make the voting process more complex, particularly for military members who are stationed overseas. This complexity is further magnified by the patchwork of various State rules and regulations. Military personnel in a given unit are likely to be voting in different jurisdictions which have their own electoral contests, contact points, and procedures for requesting an absentee ballot.

1 Federal Voting Assistance Program (2014) "Assessing the Impact of FVAP Resources."

2 Note that the actual probability of having used an FPCA declined for both website users and non-users between 2008 and 2012. This is consistent with the 2012 Report to Congress, which states that FPCA downloads declined in 2012 relative to 2008. However, the analysis in this research note indicates that the decline in FPCA use among overseas website users was smaller than the decline in FPCA use amongst otherwise similar ADM who did not use the website.

3 Aldrich, J. H. (1993). "Rational choice and turnout." *American Journal of Political Science*, 246-278.

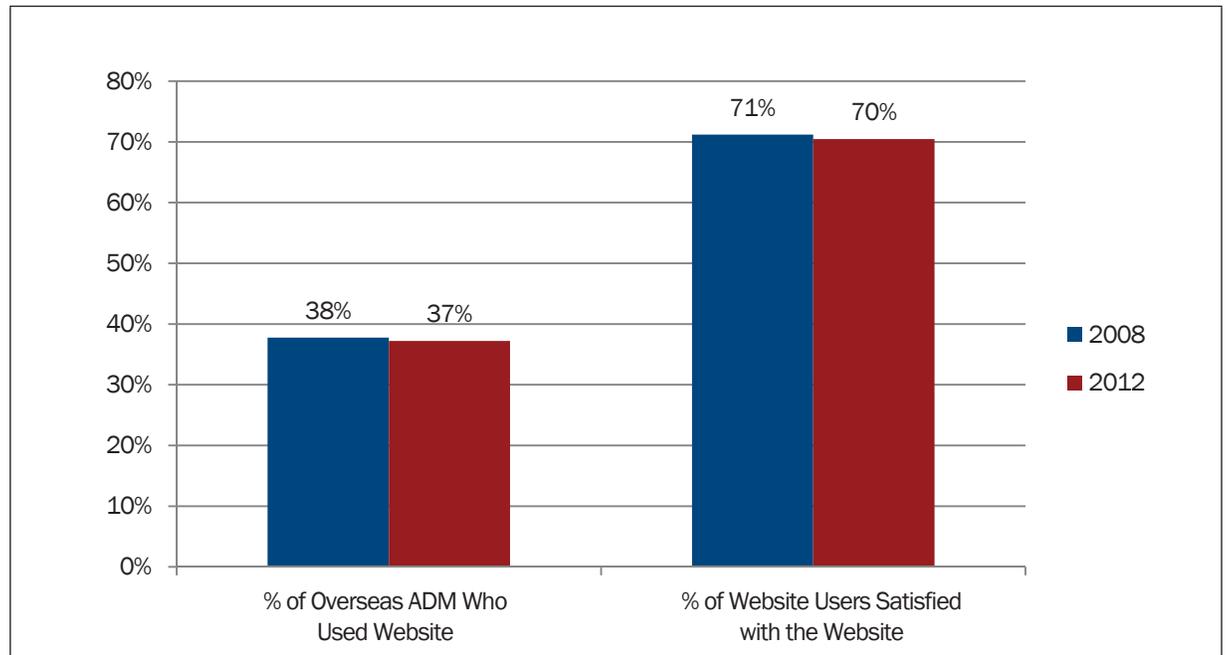
Since the passage of the *Uniformed and Overseas Citizens Absentee Voting Act (UOCAVA)*, FVAP has been at the forefront of providing information to citizens who are covered by *UOCAVA*. The advancement of the Internet allowed FVAP to provide critical information to its constituents – voters and local election officials alike – via its website. Over time, FVAP has improved its website, and in 2010 FVAP added several new functionalities.<sup>4</sup> The 2010 redesign focused on turning the website into an online portal that directly connects voters to their own State and local jurisdiction’s military voting services. This portal also incorporates FVAP’s online assistant, which utilizes a web-based interface that intuitively navigates users to complete the FPCA and FWAB. Both documents are critical components of the *UOCAVA* voting process. The FPCA acts as a universally accepted registration and ballot request form and the FWAB serves as an emergency ballot for absentee voters who requested, but have not received an absentee ballot from their State. The FWAB online assistant populates user information and candidate selections, reducing typographical errors and issues with legibility. Each online assistant also ensures that the form is consistent with the legal requirements of the user’s State of legal residence. In addition, the revised website displays information from FVAP’s Voting Assistance Guide (VAG) that aids in the voting process. This includes State-specific election information such as deadlines for ballot requests and submissions. By minimizing errors, informing voters of State-specific deadlines, and ultimately guiding *UOCAVA* voters through the FPCA and FWAB processes, the redesigned FVAP website aims to improve the absentee voting process.

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<sup>4</sup> The Federal Voting Assistance Program (2014). “2014 Post-Election Report to Congress” can be retrieved at [http://www.fvap.gov/uploads/FVAP/Reports/FVAP2014ReporttoCongress\\_20150724\\_final.pdf](http://www.fvap.gov/uploads/FVAP/Reports/FVAP2014ReporttoCongress_20150724_final.pdf)

Using data from the PEV Surveys (described in more detail below), Figure 1 shows that overseas ADM respondents reported visiting the FVAP website at roughly the same rate in 2008 and 2012.<sup>5</sup> When ADM who had used the website were asked whether or not they were satisfied with it,<sup>6</sup> approximately 70% of users in both 2008 and 2012 reported being satisfied.

FIGURE 1:  
OVERSEAS ADM WEBSITE USE AND SATISFACTION WITH THE FVAP WEBSITE



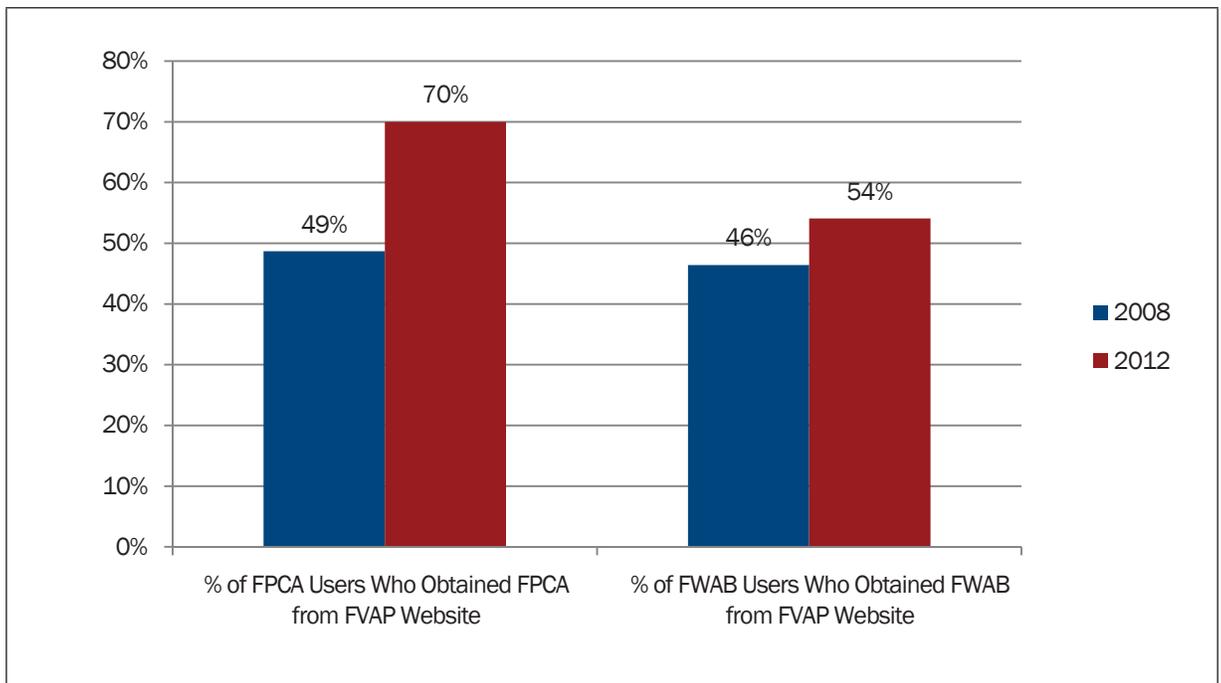
Note: The individual responses to the resource satisfaction/use questions are weighted by non-response and post-stratification weights so that the demographics of the sample more closely match those of the population.

5 This contrasts with the increase in website visits between 2008 and 2012 reported in the respective FVAP Congressional reports. This discrepancy can be explained by the differences in the sources of data (i.e., a survey of ADM versus the total number of website visits) as well as by the fact that the sample used in this analysis is restricted to overseas ADM. It should be noted that the 2008 and 2012 PEV surveys imply an overall increase in website visit rates from 20% to 28%.

6 There were 5 potential responses to the relevant question: "Very satisfied", "Satisfied", "Neither satisfied nor dissatisfied", "Dissatisfied", and "Very Dissatisfied". For the purpose of this analysis, a respondent was classified as "Satisfied" if they responded that they were "Very satisfied" or "Satisfied."

Although the website was visited at approximately the same rate in these two election years and similar rates of satisfaction were reported, the PEV Surveys contain evidence that the FVAP website was a more important source for FPCA and FWAB forms in 2012 than in 2008. Figure 2 shows that between 2008 and 2012, the FVAP website increased in importance as a source for these absentee voting forms for the overseas ADM population. This increase was especially large for the FPCA, with an increase of 21 percentage points in FPCA users who obtained this form via the FVAP website.

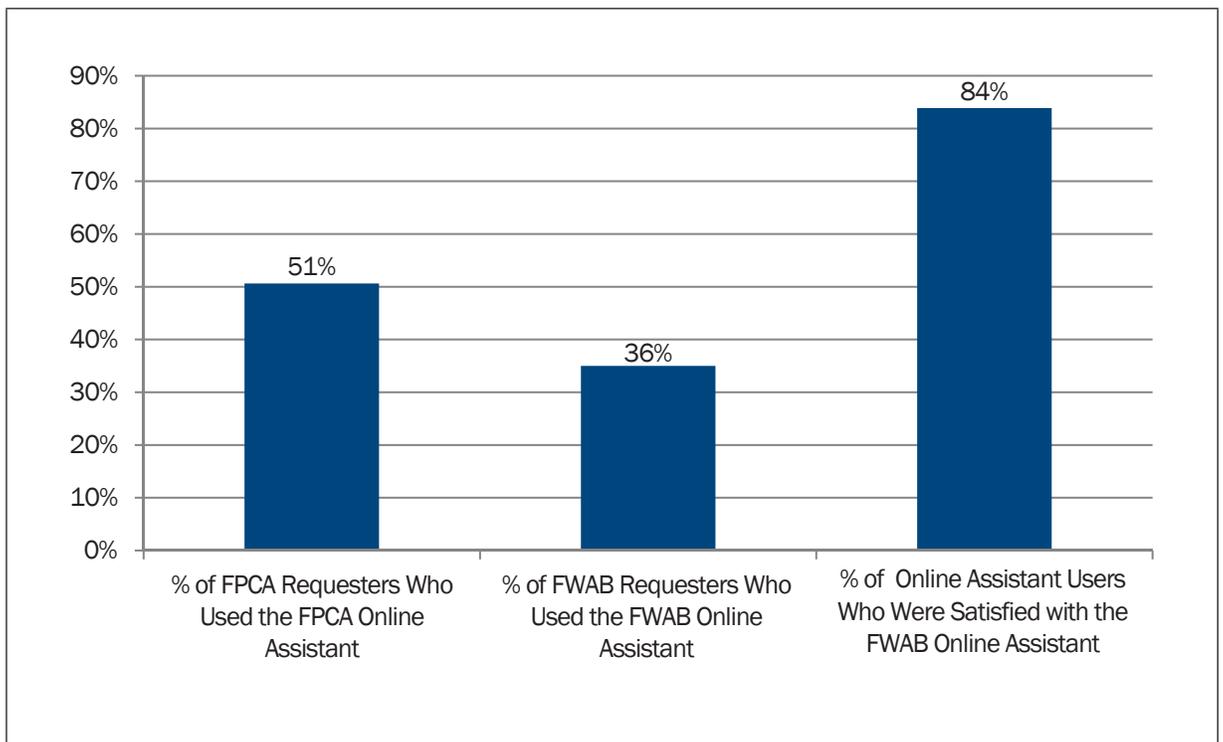
FIGURE 2:  
HOW OVERSEAS ADM USED THE FVAP WEBSITE



Note: The individual responses to the resource satisfaction/use questions are weighted by non-response and post-stratification weights so that the demographics of the sample more closely match those of the population.

Figure 3 provides one possible indication of the degree to which the FPCA and FWAB online assistant, which were added to the website between the two elections, may explain the results in Figure 2. Figure 3 shows the percentage of individuals who used the FVAP website to request the FPCA/FWAB through the online assistant in 2012. The survey shows that a considerable percentage of ADM requesting FPCA and FWAB forms through the FVAP website used these new tools. Of those who opted to use the FWAB online assistant, over 80% were satisfied with the experience. Although many of these users would have likely downloaded the paper forms if the online assistant had not been available, the results suggest that at least some overseas ADM perceived the new tools to be of value.

FIGURE 3:  
USE AND SATISFACTION WITH THE FVAP WEBSITE ONLINE ASSISTANT



Note: The individual responses to the resource satisfaction/use questions are weighted by non-response and post-stratification weights so that the demographics of the sample more closely match those of the population.

These results support the key finding in this note: the changes to the FVAP website increased the probability that website users requested an absentee ballot or voted relative to what would have been the case if changes had never been implemented. The remainder of this paper shows the results of multivariate analyses of the impact of the FVAP website revisions on these outcomes.

### Key Research Questions

This analysis addresses the following research questions:

- Was use of the FVAP website associated with a greater increase in the probability of voting for overseas ADM in 2012 relative to 2008?
- Was use of the FVAP website associated with a greater increase in the probability of requesting an FPCA or FWAB for overseas ADM in 2012 relative to 2008?
- Was there any change in the demographic composition of website users between 2008 and 2012?

Using information about ADM voting from both 2008 and 2012 provides a unique opportunity to study the effects of using the FVAP website on voting behavior. In election administration, comparing data between similar election cycles (e.g., presidential election years) provides the most valuable information because the levels of interest generated and the type of voters who typically vote vary between presidential and non-presidential elections.

### Data and Methodology

The primary data used in these analyses are the 2008 and 2012 Post-Election Voting Surveys of the Active Duty Military (hereafter referred to as “PEV Surveys”),<sup>7</sup> conducted by the Defense Manpower Data Center (DMDC) and FVAP. The PEV Surveys were fielded after the 2008 and 2012 General Elections to a sample of active duty military. In each survey, respondents were asked a number of questions about their voting behavior, experiences using the FVAP website and other related services, the location where they were stationed during the general election, and several demographic questions. Additional socioeconomic information about the respondents was provided by DMDC and appended to the PEV Survey data file. The analysis was conducted on overseas ADM in the PEV Surveys.

The ideal analysis would examine whether use of the FVAP website, especially the FWAB online assistant, resulted in a voter returning a ballot to their local election official and that ballot being included in the jurisdiction’s tabulation.<sup>8</sup> Although the specific data to perform such an analysis are not available, use of these improved tools is expected to result in a higher rate of voting success for ADM. Therefore, this analysis focuses on three questions from the PEV Surveys:

1. Did the respondent vote in the general election in the respective election year?<sup>9</sup>
2. Did the respondent utilize the FVAP website during the election year?
3. Did the respondent use an FPCA or FWAB during the election year?

To answer the question of whether the changes to the FVAP website that took place between 2008 and 2012 facilitated voting by ADM, this research note compares the difference in reported voting rates between website users and non-users in 2012 to the difference in voting rates between website users and non-users in 2008.

<sup>7</sup> The Federal Voting Assistance Program (2012). “2012 Post-Election Report to Congress” can be retrieved from <http://www.fvap.gov/uploads/FVAP/Reports/2012report.pdf>, and the survey instrument can be retrieved from <http://www.fvap.gov/uploads/FVAP/Surveys/2012adm.pdf>

<sup>8</sup> This type of analysis would require the use of vote verification, which is where there is a follow up contact to the respondent’s jurisdiction of residence to determine if a ballot was received from the respondent and, if it was returned, whether the ballot was included in the final results.

<sup>9</sup> The specific wording is: “In the election held on November 6, 2012, did you definitely vote in person on election day, definitely complete an absentee ballot by mail, e-mail, fax, or online on or before November 6, 2012, definitely not vote, or are you not completely sure whether you voted in that election?”

This comparison accounts for many potential differences in voting propensity between the four groups that are not related to the use of the website features added between 2008 and 2012. Comparing voting rates between website users and non-users in a given year provides a common point of comparison that accounts for differences in political context that motivate individuals to participate (e.g., candidates). The comparison of website users and non-users in 2008 to 2012 provides a common baseline (use or non-use in 2008), a common intervention (the change to the website), and a common post-intervention election.

This research note utilizes regression analysis<sup>10</sup> to account for potential differences in voting propensity between website users in 2008 and 2012. It is well understood from previous literature that certain demographic characteristics – such as age, education, and income – are associated with the likelihood of voting (Leighley & Nagler, 2013). Older, better-educated, and higher-income citizens tend to vote more often than younger, less-educated, lower-income individuals. The analysis that follows examines the differences between overseas ADM website users in 2008 and 2012, controlling for variation across key demographic groups, including the respondent’s age, sex, education, race and ethnicity, continuous years of service, whether the respondent is full-time active duty or a reservist, and the competitiveness of elections in the State where the respondent voted. Controlling for the demographic characteristics of the survey populations addresses factors related to variations in the overseas ADM populations between 2008 and 2012.

Given that the website functionality added between 2008 and 2012 would only be of use to absentee voters, the sample of respondents in both surveys should be restricted to those who would have to vote absentee. Due to the inability to identify domestic absentee voters among 2008 respondents based on the survey design, the analysis is restricted to individuals who were overseas at the time of the relevant election. This does not reflect the entire population eligible to use FVAP resources, but it does isolate those who are eligible and possess the greatest level of need due to their geographic location.

## Results

### *Website Use Was More Strongly and Positively Associated with Voting in 2012 Relative to 2008*

Results for the analysis of ADM voting are presented in Table 2 (see Appendix).<sup>11</sup> The results show that the differences in voting rates between overseas ADM who did and did not use the website were positive and larger in 2012 than in 2008. For overseas ADM in 2008, users of the FVAP website were approximately 20 percentage points more likely to vote compared to those who did not use the website; overseas ADM in 2012 who used the website were 34 percentage points more likely to vote than those who did not use the website.

Consistent with previous research, the findings here show that the likelihood of voting increases with age, education, and pay grade. Black ADM were more likely to vote than White ADM; Hispanic and White ADM voted at similar rates.

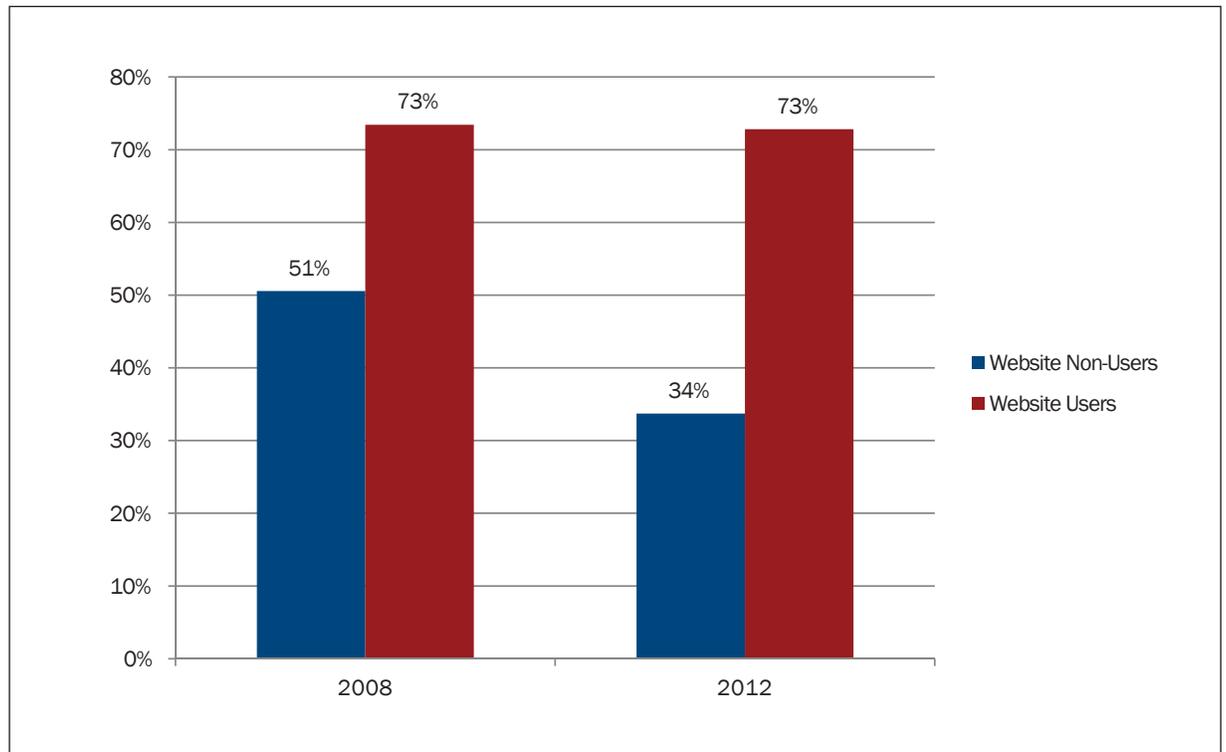
The results can be seen graphically in Figure 4, which shows voting rates for overseas ADM by election year and

10 While our dependent variable is dichotomous, for our primary results, we estimated a linear voting model using Ordinary Least Squares (OLS). Our parameter of interest is the percentage point difference in the probability of voting or voting rates between website users and website non-users. OLS has been shown in simulation studies to provide estimates of such marginal effects similar to those obtained with logit even when the true data generating process is a logistic model (Beck, 2015). The results were qualitatively similar when using logistic regression.

11 The coefficient for “FVAP Website” can be interpreted as the difference in probability of voting between FVAP website users and non-users in 2008 (.204 = 20 percentage points) after controlling for the other variables in the model. To obtain the difference in the probability of voting between website users and non-users in 2012, take the sum of the difference in 2008 and the coefficient for “Year and FVAP Website” (.204 + .135 = approximately 34 percentage points). Similar reasoning applies to all subsequent tables.

website use status.<sup>12</sup> The gap between website users and non-users is much larger for overseas ADM in 2012.

FIGURE 4:  
MODEL-PREDICTED OVERSEAS ADM VOTING RATES, BY WEBSITE USE AND ELECTION YEAR



Note: Model-predicted voting rates are the average of the individual respondents' predicted probability of voting by election-year/website-use strata. The individual predictions are weighted by non-response and post-stratification weights so that the demographics of the sample more closely match those of the population.

### *Use of New Website Features*

If the changes to the website undertaken between the 2008 and 2012 elections were responsible for the strong and positive relationship between website use and voting, then one might also expect use of the website to be more strongly associated with use of the FPCA and FWAB in 2012 than in 2008. In order to test for this relationship, this analysis examines the responses to the questions in the 2008 and 2012 PEV Surveys concerning whether respondents used the FPCA to request an absentee ballot or used the FWAB as a backup ballot during these elections.

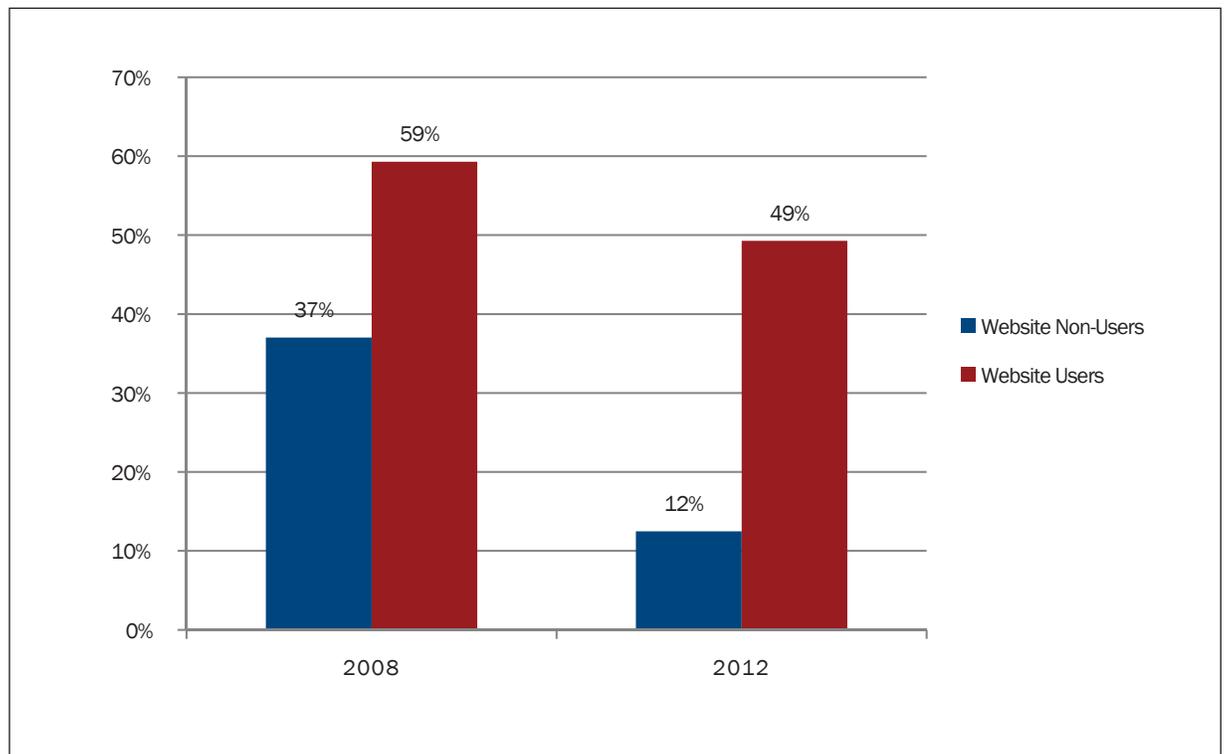
Table 3 (see Appendix) presents analysis related to whether a respondent answered “yes” to having used an FPCA to request an absentee ballot during that year’s election. Although overseas ADM were more likely to have used an FPCA during the 2008 election than the 2012, the gap in FPCA use between website users and non-users in 2012 (34 percentage points) was significantly larger than the gap in 2008 (20 percentage points) after

<sup>12</sup> Unlike the regression results in Table 1 (see Appendix), these estimated voting rates do not hold the control variables constant. However, the results are qualitatively similar to the regression results.

controlling for demographic and geographic differences between the election-year/website-use subpopulations. This is consistent with website changes facilitating the use of the FPCA.

The results from Table 3 can be seen in Figure 5. Controlling for various demographic and related characteristics, the percentage of overseas ADM using FPCAs declined from 2008 to 2012. What is of most interest, however, is that for overseas ADM who did not use the website, the decline in FPCA use was substantial, 17 percentage points lower in 2012 than in 2008. In both 2008 and 2012, FVAP website users were much more likely to request an FPCA than non-website users.

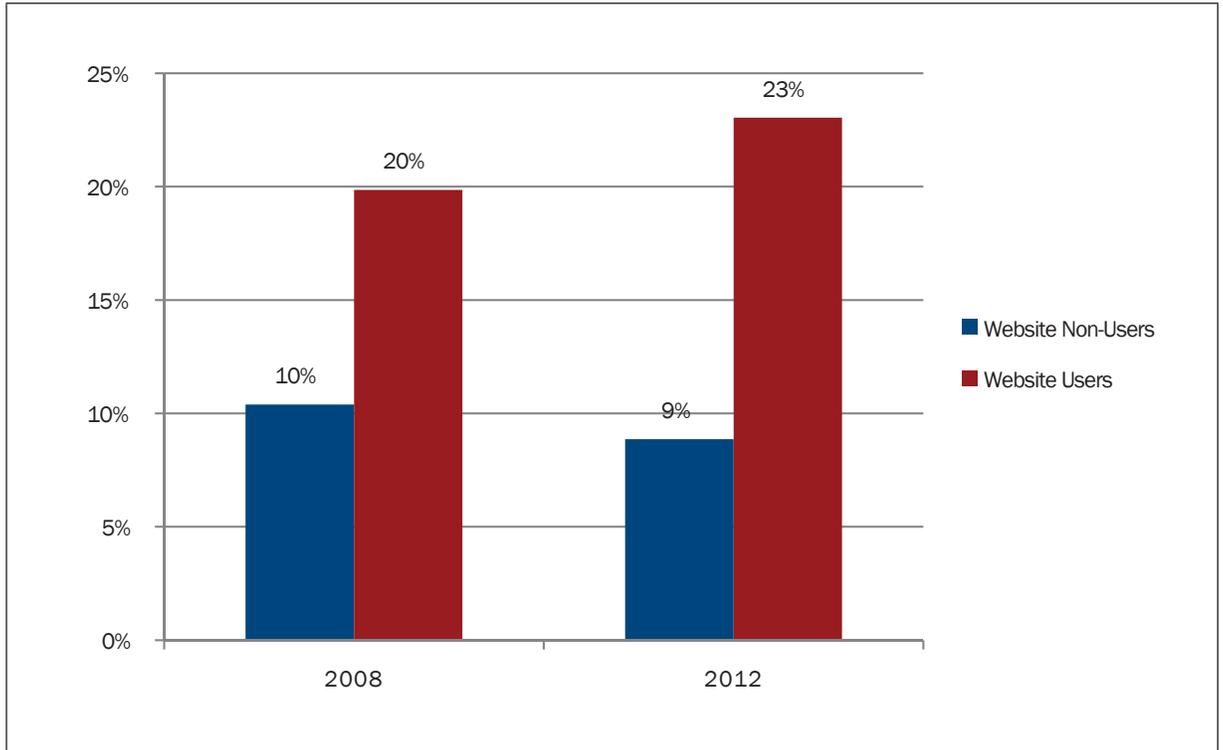
FIGURE 5:  
MODEL-PREDICTED OVERSEAS ADM USE OF FPCA, BY WEBSITE USE AND ELECTION YEAR STATUS



Note: Model-predicted percentages of overseas ADM who requested the FPCA are the average of the predicted probability of having requested the FPCA for individual respondents by election-year/website-use strata. The individual predictions are weighted by non-response and post-stratification weights so that the demographics of the sample more closely match those of the population.

Figure 6 shows similar results for respondents who used the FWAB. Although the estimated gap between website users and non-users in 2012 (approximately 13 percentage points) was larger than the gap in 2008 (9 percentage points), this difference was not statistically significant.

FIGURE 6:  
MODEL-PREDICTED OVERSEAS ADM USE OF FWAB, BY WEBSITE USE AND ELECTION YEAR STATUS



Note: Model-predicted percentage of overseas ADM who requested the FWAB are the average of the predicted probability of having requested the FWAB for individual respondents by election-year/website-use strata. The individual predictions are weighted by non-response and post-stratification weights so that the demographics of the sample more closely match those of the population.

### Conclusion and Policy Recommendations

Several conclusions come from this analysis:

- Website use was associated with a larger increase in the probability of casting a ballot in the 2012 election relative to the 2008 election. This suggests an increase in the effectiveness of the website in facilitating voting between those two elections.
- Website use was associated with a larger increase in the probability of requesting an FPCA and registering to vote in 2012 than in 2008. This suggests an increase in the effectiveness of the website revisions related to registration.
- Large fractions of the population who used the FVAP website to request an FPCA or FWAB in 2012 did so through the online assistant, consistent with the estimated increase in the effectiveness of the website due to these new features.

Based on these conclusions, there are several key recommendations.

- FVAP should continue to expand its communication and marketing approach to publicize the website and its improved functionality. Based on the estimated increase in the effectiveness of the website between 2008 and 2012, one would expect ADM participation to increase if FVAP raised awareness of the website's features.
- The website should give the FVAP online assistant special emphasis given how effectively they seem to have worked for those who visited the website.

## References

- Alvarez, R. M., Hall, T. E., & Roberts, B. F. (2007). Military voting and the law: Procedural and technological solutions to the ballot transit problem. *Fordham Urban Law Journal*, 34, 935-996.
- Beck, N. (2015, July). Estimating group data models with a binary dependent variable and fixed effects: What are the issues? Presented at The Annual Meeting of the Society for Political Methodology, University of Rochester, NY. [http://polmeth.wustl.edu/media/Paper/logitfe\\_1.pdf](http://polmeth.wustl.edu/media/Paper/logitfe_1.pdf).
- Hur, A., & Achen, C. H. (2013). Coding Voter Turnout Responses in the Current Population Survey. *Public Opinion Quarterly*, nft042.
- Inbody, D. S. (2015). Voting by overseas citizens and military personnel. *Election Law Journal*. 14(1), 54-59.
- Leighley, J. E., & Nagler, J. (2013). *Who votes now? Demographics, issues, inequality, and turnout in the United States*. Princeton University Press.

## Appendix

In the models discussed in the report, the key issue examined was whether use of the FVAP website by overseas ADM (especially the use of the FVAP website in 2012) increased the likelihood of voting. In order to isolate this relationship, a multivariate model was used so that variations in critical demographic characteristics could be accounted for. In a multivariate model, there may still be differences that are not accounted for by these demographic characteristics. Of most importance for this research note was whether highly motivated overseas ADM were more likely to use the website in 2012 than in 2008 because the website was more effective. This is especially concerning because the data on whether or not respondents voted comes from the respondents themselves rather than voter files or other administrative records. In this data, having voted may indicate an attempt to vote, rather than having successfully submitted a ballot. Whether a respondent reported having voted is expected to be more strongly correlated with the motivation to vote than an objective measure of voting would be. If this is the case, then the website may have increased the likelihood of voting, but the size of the increase may reflect a higher propensity to vote among website users regardless of website effectiveness.

Table 1 contains an analysis that examines whether the relationship between the demographic characteristics of the respondents and website use changed between 2008 and 2012. The results of the analysis show that the only two variables that were different between 2008 and 2012 were sex (males were less likely to use the website in 2012) and age (individuals 45 and older were more likely to use the website in 2012). However, one statistical test (a Wald Test on the joint significance of the interaction variables) did indicate a statistically significant difference between the relationships of the control variables and website use in 2008 and 2012. This may mean that there is some difference in the motivation of overseas ADM website users relative to non-users between the two years.

TABLE 1: WEBSITE USE MODEL (N = 2330)

VARIABLE		EFFECT	STANDARD ERROR	95% CONFIDENCE LOWER BOUND	95% CONFIDENCE UPPER BOUND
Baseline (Constant)		0.323	0.177	-0.028	0.674
<b>Year</b>		-0.041	0.233	-0.502	0.421
<b>DISTANCE FROM U.S.</b>	Quartile 2	0.001	0.071	-0.140	0.143
	Quartile 3	0.040	0.118	-0.194	0.274
	Quartile 4	-0.079	0.104	-0.284	0.127
<b>WORLDWIDE GOVERNANCE INDICATORS</b>	Quartile 2	0.084	0.167	-0.247	0.414
	Quartile 3	0.127	0.087	-0.045	0.299
	Quartile 4	0.027	0.086	-0.145	0.198
<b>STATE ELECTRONIC BALLOT RETURN LAWS</b>		-0.046	0.085	-0.215	0.123
<b>STATE REGISTRATION POLICIES</b>		0.025	0.080	-0.133	0.183
<b>ABSOLUTE DIFFERENCE IN TWO-PARTY VOTE IN STATE</b>		-0.276	0.161	-0.595	0.044
<b>PAY GRADES</b>	W1-W5	0.031	0.057	-0.081	0.144
	O1-03	0.039	0.063	-0.085	0.164
	O4-06	-0.115	0.089	-0.291	0.061
<b>CONTINUOUS YEARS OF SERVICE</b>		0.068	0.061	-0.053	0.188
<b>MALE</b>		-0.084	0.034*	-0.152	-0.016
<b>FAMILY STATUS</b>	Single without Children	-0.029	0.079	-0.185	0.127
	Married with Children	0.069	0.055	-0.039	0.178
	Married without Children	0.088	0.075	-0.061	0.237
<b>RACE/ ETHNICITY</b>	Black	0.072	0.045	-0.018	0.162
	Hispanic	0.022	0.063	-0.103	0.147
	All Other Race	0.150	0.085	-0.018	0.318
<b>EDUCATION</b>	Some College	0.074	0.048	-0.021	0.169
	College Graduate	0.102	0.065	-0.026	0.230
	Graduate Degree	0.090	0.060	-0.028	0.209
<b>AGE CATEGORIES</b>	25-29	-0.056	0.063	-0.181	0.068
	30-34	-0.114	0.083	-0.279	0.051
	35-44	-0.094	0.085	-0.264	0.075
	45+	-0.171	0.090	-0.350	0.007
<b>YEAR AND DISTANCE FROM U.S.</b>	Quartile 2	-0.069	0.083	-0.235	0.096
	Quartile 3	0.071	0.142	-0.212	0.353
	Quartile 4	0.106	0.125	-0.142	0.353

TABLE 1: WEBSITE USE MODEL (N = 2330) Continued

VARIABLE		EFFECT	STANDARD ERROR	95% CONFIDENCE LOWER BOUND	95% CONFIDENCE UPPER BOUND
YEAR AND WORLD-WIDE GOVERNANCE INDICATORS	Quartile 2	-0.018	0.184	-0.382	0.347
	Quartile 3	-0.123	0.103	-0.328	0.082
	Quartile 4	0.074	0.116	-0.156	0.305
YEAR AND STATE ELECTRONIC BALLOT RETURN LAWS		-0.033	0.151	-0.332	0.267
YEAR AND STATE REGISTRATION POLICIES		-0.014	0.096	-0.205	0.178
YEAR AND ABSOLUTE DIFFERENCE IN TWO-PARTY VOTE IN STATE, 2008		0.163	0.251	-0.335	0.662
YEAR AND PAY GRADES	W1-W5	-0.056	0.102	-0.258	0.146
	O1-O3	0.115	0.079	-0.041	0.271
	O4-O6	0.163	0.101	-0.038	0.364
YEAR AND CONTINUOUS YEARS OF SERVICE		-0.002	0.068	-0.138	0.133
YEAR AND MALE		0.080	0.052	-0.024	0.184
YEAR AND FAMILY STATUS	Single without Children	0.083	0.102	-0.120	0.287
	Married with Children	0.013	0.087	-0.159	0.185
	Married without Children	0.008	0.094	-0.178	0.193
YEAR AND RACE/ETHNICITY	Black	0.029	0.059	-0.088	0.145
	Hispanic	-0.093	0.078	-0.247	0.061
	All Other Race	-0.150	0.098	-0.345	0.045
YEAR AND EDUCATION	Some College	-0.032	0.062	-0.156	0.091
	College Graduate	-0.040	0.074	-0.187	0.107
	Graduate Degree	-0.044	0.078	-0.199	0.112
YEAR AND AGE CATEGORIES	25-29	0.053	0.074	-0.095	0.200
	30-34	0.116	0.099	-0.079	0.312
	35-44	0.108	0.098	-0.087	0.302
	45+	0.239	0.114*	0.013	0.464

Dependent variable is whether the respondent used the FVAP website. Robust standard errors are clustered by state and year (101 clusters). Region effects are controlled for but not presented. \* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ .

## ADM variable descriptions and coding

- The specific variables used in the model for the overseas ADM models are listed below.<sup>13</sup>
- Absolute Difference in Two-Party Vote in State (absolute difference in the two-party vote share in a respondent's State for the previous presidential elections, i.e., 2004 for 2008 respondents, 2008 for 2012 respondents)
- Age (1 is 18-24, 2 is 25-29, 3 is 30-34, 4 is 35-44, 5 is 45+)
- Family Status (1 for Single with Children, 2 for Single without Children, 3 for Married without Children, 4 for Married with Children)
- Continuous Years of Service (0 for 0-5 years, 1 for 6+ years)
- Distance from U.S. (distance of respondent host country from the United States, by quartile; e.g., quartile 1 indicates residence in one of the closest 25% of countries, quartile 4 indicates residence in one of the farthest 25% of countries)
- Education (1 if high school graduate or less, or unknown, 2 if some college or associate degree, 3 if 4-year degree in college, 5 if graduate/professional degree)
- FVAP website (1 if respondent utilized FVAP website during the election year, 0 if not)
- FPCA (1 if respondent utilized FPCA in lead-up to election, 0 if not)
- FWAB (1 if respondent utilized FWAB in lead-up to election, 0 if not)
- State Electronic Ballot Policies (mean ranging from 1 if State allows all indicators to 0 if State allows none for the following: ballot requests by email, ballot requests by fax, ballot requests by State voting website, transmission of ballots by email, transmission of ballots by fax, transmission of ballots by State voting website, receives ballots by fax, receives ballots by email, receives ballots by State website)
- Male (1 for males, 0 for females)
- Pay Grade (1 for E1-E8, 2 for W1-W5, 3 for O1-O3, 4 for O4-O6)
- Race/Ethnicity (1 for non-minority, 2 for non-Hispanic Black, 3 for Hispanic, 4 for all others)
- Region (Region of U.S. containing respondent's legal residence)
- Voted (1 if stated voted, 0 if stated did not vote)<sup>14</sup>
- Registered (1 if registered to vote, 0 if not)
- Worldwide Governance Indicators (composite indicators of the quality of governance produced by the World Bank, by quartile; e.g. quartile 1 indicates residence in one of the 25% least well-governed countries, quartile 4 indicates residence in one of the 25% most well-governed countries)

<sup>13</sup> When possible, administrative data with information about the entire sampling frame was used rather than variables reliant on individual survey responses. The specific variables used were: voted, famstat, RSV\_CATG, MARRIED, CHILDREN, RESERVE, changeduty, csex, CRACE\_ETH, .XCPAY2, CYOS, ceduc, AGE\_%, ballotpolicies, votedifference, legalresr

<sup>14</sup> In the analyses used in FVAP's 2012 and 2014 reports to Congress, respondents who reported being unsure about voting were included with non-voters; in this analysis as well as that undertaken in the previous research note, such respondents were not included in the samples for either the CVAP or ADM population. This was done because the theory used to justify the included covariates addresses the distinctions between voters and nonvoters, but has little to say about the distinction between known voters and those who are unsure about whether they voted or did not respond to the survey. As discussed by Hur and Achen (2013), this coding also complicates the comparison of participation rates over time.

TABLE 2: VOTING MODEL (N = 2330)

VARIABLE		EFFECT	STANDARD ERROR	95% CONFIDENCE LOWER BOUND	95% CONFIDENCE UPPER BOUND
Baseline (Constant)		0.478	0.106***	0.265	0.692
Year		-0.184	0.026***	-0.237	-0.130
FVAP WEBSITE		0.204	0.025***	0.154	0.254
YEAR AND FVAP WEBSITE		0.135	0.033***	0.069	0.201
DISTANCE FROM U.S.	Quartile 2	-0.051	0.025*	-0.101	0.000
	Quartile 3	-0.071	0.036	-0.143	0.002
	Quartile 4	-0.006	0.040	-0.086	0.075
WORLDWIDE GOVERNANCE INDICATORS	Quartile 2	-0.017	0.068	-0.154	0.120
	Quartile 3	0.016	0.044	-0.073	0.106
	Quartile 4	0.013	0.035	-0.058	0.084
STATE ELECTRONIC BALLOT RETURN LAWS		0.033	0.070	-0.107	0.173
STATE REGISTRATION POLICIES		-0.028	0.040	-0.107	0.052
ABSOLUTE DIFFERENCE IN TWO-PARTY VOTE IN STATE, 2008		-0.164	0.131	-0.428	0.099
PAY GRADES	W1-W5	0.058	0.032	-0.007	0.123
	O1-O3	0.057	0.022*	0.013	0.101
	O4-O6	0.134	0.030***	0.075	0.194
CONTINUOUS YEARS OF SERVICE		-0.004	0.024	-0.051	0.044
MALE		-0.021	0.021	-0.063	0.020
FAMILY STATUS	Single without Children	0.037	0.059	-0.081	0.155
	Married with Children	0.082	0.046	-0.010	0.174
	Married without Children	0.108	0.054	-0.001	0.217
RACE/ ETHNICITY	Black	0.100	0.020***	0.060	0.139
	Hispanic	-0.023	0.033	-0.090	0.044
	All Other Race	-0.107	0.043*	-0.193	-0.021
EDUCATION	Some College	0.061	0.023*	0.014	0.107
	College Graduate	0.110	0.035**	0.040	0.179
	Graduate Degree	0.086	0.033*	0.020	0.153
AGE CATEGORIES	25-29	0.085	0.025***	0.035	0.136
	30-34	0.142	0.036***	0.069	0.214
	35-44	0.195	0.031***	0.132	0.258
	45+	0.272	0.035***	0.202	0.342

The dependent variable is whether or not the respondent voted. Robust standard errors are clustered by State (50 States and the District of Columbia). Region effects are controlled for but not presented. \* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ .

TABLE 3: USE OF FPCA MODEL (N = 2330)

VARIABLE		EFFECT	STANDARD ERROR	95% CONFIDENCE LOWER BOUND	95% CONFIDENCE UPPER BOUND
Baseline (Constant)		0.366	0.108***	0.148	0.584
Year		-0.280	0.035***	-0.350	-0.211
FVAP WEBSITE		0.203	0.031***	0.141	0.266
YEAR AND FVAP WEBSITE		0.140	0.032***	0.075	0.205
DISTANCE FROM U.S.	Quartile 2	-0.036	0.032	-0.101	0.029
	Quartile 3	0.041	0.051	-0.061	0.143
	Quartile 4	0.027	0.055	-0.083	0.136
WORLDWIDE GOVERNANCE INDICATORS	Quartile 2	0.057	0.079	-0.101	0.216
	Quartile 3	0.079	0.028**	0.023	0.135
	Quartile 4	0.112	0.048*	0.016	0.209
STATE ELECTRONIC BALLOT RETURN LAWS		0.071	0.074	-0.077	0.219
STATE REGISTRATION POLICIES		0.026	0.038	-0.051	0.102
ABSOLUTE DIFFERENCE IN TWO-PARTY VOTE IN STATE, 2008		0.001	0.128	-0.257	0.258
PAY GRADES	W1-W5	0.013	0.037	-0.062	0.088
	01-03	0.006	0.037	-0.068	0.079
	04-06	-0.057	0.047	-0.151	0.038
CONTINUOUS YEARS OF SERVICE		-0.040	0.029	-0.099	0.018
MALE		-0.031	0.021	-0.074	0.011
FAMILY STATUS	Single without Children	-0.017	0.046	-0.110	0.076
	Married with Children	0.038	0.043	-0.048	0.124
	Married without Children	0.053	0.049	-0.046	0.152
RACE/ETHNICITY	Black	0.121	0.018***	0.085	0.157
	Hispanic	0.054	0.034	-0.015	0.123
	All Other Race	0.014	0.028	-0.041	0.070
EDUCATION	Some College	0.000	0.018	-0.036	0.035
	College Graduate	0.050	0.026	-0.003	0.103
	Graduate Degree	0.042	0.030	-0.017	0.102
AGE CATEGORIES	25-29	0.014	0.034	-0.055	0.083
	30-34	0.074	0.043	-0.013	0.161
	35-44	0.055	0.041	-0.028	0.137
	45+	0.123	0.049	0.025	0.222

The dependent variable is whether or not the respondent used the Federal Post Card Application (FPCA). Robust standard errors are clustered by State (50 States and the District of Columbia). Region effects are controlled for but not presented. \* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ .

TABLE 4: USE OF FWAB MODEL (N = 2330)

VARIABLE		EFFECT	STANDARD ERROR	95% CONFIDENCE LOWER BOUND	95% CONFIDENCE UPPER BOUND
Baseline (Constant)		0.107	0.082	-0.057	0.271
Year		-0.031	0.029	-0.090	0.027
FVAP WEBSITE		0.089	0.024	0.041	0.137
YEAR AND FVAP WEBSITE		0.046	0.035	-0.024	0.116
DISTANCE FROM U.S.	Quartile 2	0.002	0.023	-0.045	0.048
	Quartile 3	0.005	0.039	-0.074	0.084
	Quartile 4	-0.017	0.047	-0.112	0.077
WORLDWIDE GOVERNANCE INDICATORS	Quartile 2	-0.051	0.048	-0.147	0.046
	Quartile 3	-0.055	0.024*	-0.104	-0.006
	Quartile 4	-0.013	0.046	-0.105	0.079
STATE ELECTRONIC BALLOT RETURN LAWS		0.070	0.058	-0.047	0.187
STATE REGISTRATION POLICIES		-0.003	0.031	-0.065	0.058
ABSOLUTE DIFFERENCE IN TWO-PARTY VOTE IN STATE, 2008		-0.062	0.085	-0.233	0.108
PAY GRADES	W1-W5	-0.029	0.029	-0.088	0.029
	01-03	0.008	0.022	-0.037	0.052
	04-06	-0.033	0.025	-0.084	0.017
CONTINUOUS YEARS OF SERVICE		-0.030	0.020	-0.071	0.010
MALE		0.000	0.025	-0.050	0.050
FAMILY STATUS	Single without Children	0.038	0.040	-0.042	0.118
	Married with Children	0.016	0.040	-0.064	0.096
	Married without Children	0.056	0.040	-0.025	0.137
RACE/ETHNICITY	Black	0.109	0.021***	0.067	0.150
	Hispanic	0.055	0.025*	0.005	0.106
	All Other Race	0.006	0.033	-0.061	0.072
EDUCATION	Some College	0.007	0.025	-0.044	0.058
	College Graduate	-0.036	0.022	-0.081	0.009
	Graduate Degree	-0.025	0.034	-0.093	0.042
AGE CATEGORIES	25-29	0.027	0.028	-0.028	0.083
	30-34	0.055	0.027	0.000	0.110
	35-44	0.087	0.027**	0.034	0.141
	45+	0.112	0.028***	0.055	0.168

The dependent variable is whether or not the respondent used the Federal Write-In Absentee Ballot (FWAB). Robust standard errors are clustered by State (50 States and the District of Columbia). Region effects are controlled for but not presented. \* $p < .05$ . \*\* $p < .01$ .