

SIMILARITIES: MOTIVATION, DEMOGRAPHICS

NON-UOCAVA ADM LIVE WITHIN THEIR VOTING JURISDICTION

UOCAVA ADM ARE STATIONED AWAY FROM THEIR VOTING JURISDICTION

The UOCAVA Gap compares the voting rates of UOCAVA ADM and non-UOCAVA ADM that have similar demographics and motivation to vote, but experience different obstacles to voting.



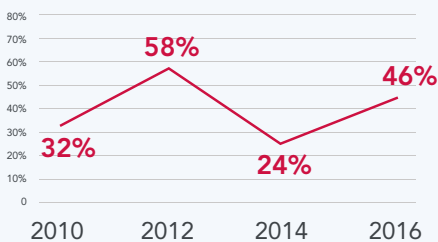
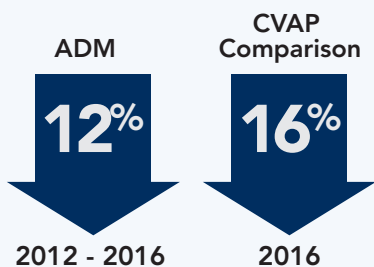
UOCAVA ADM were about

1/4 LESS LIKELY TO VOTE

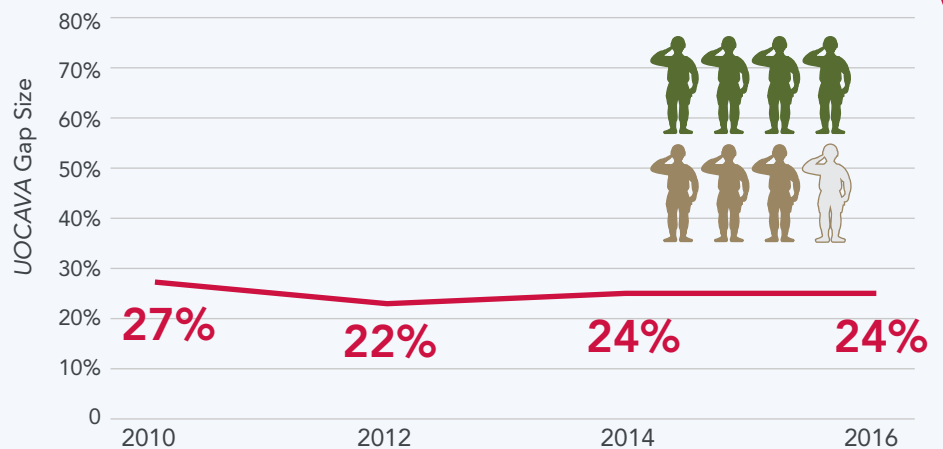
than **non-UOCAVA ADM** from 2010 - 2016.

DIFFERENCES: OBSTACLES TO VOTING

OLD METRIC: ADM VOTER PARTICIPATION



MORE EFFECTIVE METRIC: THE UOCAVA GAP



This infographic is based on findings from: Federal Voting Assistance Program. (2017). Measuring obstacles for UOCAVA ADM: introducing the UOCAVA gap. The ADM participation metric uses data reported in: Federal Voting Assistance Program. (2017). 2016 post-election report to Congress, p. 11. The CVAP comparison metric uses data reported in: Federal Voting Assistance Program. (2017). Post-election survey of active duty military: technical report, 2016, p. 20.

MEASURING OBSTACLES TO VOTING FOR *UOCAVA* ADM: INTRODUCING THE *UOCAVA* GAP

A comparison of election participation by UOCAVA and non-UOCAVA ADM across elections provides evidence for stability in the obstacles to UOCAVA voting.

This research note introduces the “*UOCAVA* Gap,” a more effective metric that examines the effect of voting obstacles faced by *Uniformed and Overseas Citizens Absentee Voting Act (UOCAVA)* active duty military (ADM) members. Trends in the *UOCAVA* Gap suggest that, despite fluctuations in the ADM participation rate, overall *UOCAVA* obstacles to voting have been relatively stable from 2010 to 2016.

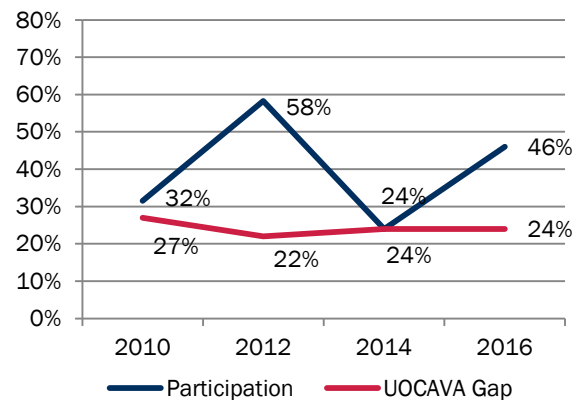
Key Terms. *UOCAVA* ADM are the subset of ADM members who are located outside their voting jurisdictions and are thus potential absentee voters. The **CVAP**, or the Citizen Voting Age Population, are eligible civilian voters in the United States.

Background. Previous research into *UOCAVA* ADM voting has used the ADM participation rate, or the difference between the ADM and CVAP participation rates, to estimate the magnitude and trends in *UOCAVA* obstacles to voting. For example, the ADM participation rate declined 12 percentage points from 2012 to 2016. Relative to CVAP, the ADM participation rate was 16 percentage points lower in 2016. These metrics face limitations because (1) ADM and CVAP may be differentially motivated to vote, (2) these motivational differences are likely to change across elections, and (3) it does not isolate the effect of obstacles to voting on *UOCAVA* ADM—the key ADM population receiving FVAP absentee voting assistance.

Methods. Data from the Post-Election Voting Survey (PEVS) of Active Duty Military for the 2010–2016 General Elections were used to evaluate the underlying assumption that *UOCAVA* and non-*UOCAVA* ADM are similarly motivated to vote, and

to estimate the *UOCAVA* Gap for each election. The *UOCAVA* Gap is defined as 1 minus the ratio of the *UOCAVA* ADM and non-*UOCAVA* ADM participation rates, adjusting for demographic and geographic differences between years. The *UOCAVA* Gap can be interpreted as the percentage of *UOCAVA* ADM who would have voted but did not due to *UOCAVA*-specific obstacles to voting.

Results. In contrast to the ADM participation rate, the *UOCAVA* Gap remained stable from 2010 to 2016, with *UOCAVA* ADM being approximately one-fourth less likely to vote than non-*UOCAVA* ADM (see figure below). This evidence suggests that the obstacles to absentee voting have not increased for *UOCAVA* ADM relative to non-*UOCAVA* ADM in this period. From 2012 to 2016, the *UOCAVA* Gap only expanded by a statistically insignificant two percentage points.



Conclusions. The *UOCAVA* Gap is an improved measure to evaluate ADM participation and *UOCAVA* obstacles to voting. It is less susceptible to fluctuations in ADM motivation to vote. This new measure and its underlying methodology can be used when assessing the impact of DoD-wide policy changes on *UOCAVA* ADM participation.

Introduction

The Federal Voting Assistance Program (FVAP) is responsible for carrying out the responsibilities of the *Uniformed and Overseas Citizens Absentee Voting Act (UOCAVA)* as amended by the *Military and Overseas Voter Empowerment (MOVE) Act*. As part of these legislative mandates, following each regularly scheduled election year, FVAP reports the active duty military (ADM) participation and registration rates in its Post-Election Report to Congress. Additionally, FVAP compares these rates with those of civilians via the Citizen Voting Age Population (CVAP). In the 2016 Post-Election Report to Congress, and the accompanying 2016 Post-Election Voting Survey (PEVS)-ADM Technical Report, FVAP reported a decline in the ADM participation rate from 58 percent in 2012 to 46 percent in 2016.¹ FVAP also showed that after adjusting the CVAP to make them demographically and geographically similar to ADM, the 46 percent participation rate was 16 percentage points lower than the CVAP participation rate.² Analyses showed that half of the difference in the ADM-to-CVAP participation comparison could be explained by population shifts in demographics and geography, but that future research was needed to explore how this decline in ADM participation was impacted by either decreased motivation or increased obstacles to vote in 2016.

***UOCAVA* ADM:** Active duty military members who are located outside their voting jurisdictions, and are thus potential absentee voters.

Non-*UOCAVA* ADM: Active duty military members who are located inside their voting jurisdictions and thus do not qualify for the absentee voting protections provided under *UOCAVA*.

One purpose of this ADM-to-CVAP comparison is to identify and track potential obstacles to voting that may be unique to the *UOCAVA* ADM population, which is the subset of ADM members who are located outside of their voting jurisdictions. Obstacles to voting for *UOCAVA* ADM have been discussed in many previous reports by FVAP, and can generally be defined as any real or perceived barrier within the *UOCAVA* absentee voting process that may prevent someone from voting. Examples of obstacles to voting for *UOCAVA* ADM include a lack of knowledge or resources, variance in state policies and deadlines, and challenges associated with ballot delivery and receipt. Although FVAP's work likely affects the broader ADM population, its efforts are specifically aimed at assisting *UOCAVA* ADM with absentee voting resources and programs. However, drawing conclusions about obstacles to voting that are specific to *UOCAVA* ADM is tenuous when using the traditional ADM-to-CVAP comparison because the groups are inherently different. To address some of these differences, FVAP has traditionally presented an adjusted ADM-to-CVAP comparison to correct for

¹ Federal Voting Assistance Program. (2017). Post-election survey of active duty military: technical report, 2016, p. 25.

² The 75 percent CVAP participation rate from the 2016 Current Population Survey (CPS) was limited to employed civilians with non-missing model data and classified "don't know" responses to the voting question as missing. For more, see the *2016 Post-Election Voting Surveys: ADM Technical Report*, available at https://www.fvap.gov/uploads/FVAP/Reports/PEVS_ADM_TechReport_Final.pdf

demographic and geographic differences *between* the groups, but there may still be differences in motivation *within* these two groups due to unobservable factors that influence their motivations.³ To the degree that motivational differences exist between ADM and CVAP, the effects of obstacles to voting that are unique to *UOCAVA* ADM may be underestimated by the ADM-to-CVAP comparison. Together, these issues suggest that the ADM-to-CVAP comparison is limited in its ability to evaluate *UOCAVA* voting. In order to more effectively evaluate FVAP's influence on *UOCAVA* ADM's opportunity to vote, FVAP needs a measure of participation that more closely isolates obstacles to voting for *UOCAVA* voters by using a comparison less affected by motivation.

This research note introduces an alternative metric for examining the effect of obstacles to voting faced by *UOCAVA* ADM: the "*UOCAVA* Gap." The *UOCAVA* Gap is defined as a comparison between the participation rates of the *UOCAVA* ADM and non-*UOCAVA* ADM populations.⁴ This new metric is less driven by motivation to vote and instead isolates the effect of obstacles to voting by using two similarly motivated groups which differ primarily based on their *UOCAVA* status. The first part of this report presents a review of the academic literature examining the factors that influence voter participation and previous studies comparing participation in similar subgroups. Previous research provides evidence that (1) ADM motivation to vote varies across elections, and (2) ADM and CVAP have different levels of motivation, as reflected in differences in the non-*UOCAVA* and CVAP participation rates in the 2016 General Election. Next, this research note describes how the *UOCAVA* Gap is conceptualized and how it is defined using PEVS data from 2010–2016. This note then presents estimates of the *UOCAVA* Gap for the 2010–2016 elections and shows that *UOCAVA* ADM have consistently voted at a rate one-fourth lower than similarly motivated non-*UOCAVA* ADM. Stability in the *UOCAVA* Gap suggests that the 2016 decline in ADM participation was not due to a rise in obstacles to absentee voting. The research note concludes with a summary of the findings, limitations, and directions for future research, as well as policy recommendations.

The *UOCAVA* Gap:
the percentage of
UOCAVA ADM who would
have voted but did not
due to *UOCAVA*-specific
obstacles to voting.

Challenges in Measuring *UOCAVA* Obstacles to Voting

A major challenge to measuring trends in obstacles to *UOCAVA* voting is the effect of changes in motivation to vote on election participation over time. Voter participation in the United States is not stable over time, and participation rates vary between midterm and presidential elections in large and substantive ways, making comparisons between these two elections tenuous. From 1980 to 2016, the Census Bureau's estimate of the participation rate among the CVAP in presidential

³ In the adjusted ADM-to-CVAP comparison, one population is adjusted so that it matches the demographic and geographic characteristics of the other population. Though these proportions are adjusted for, within each population, certain subpopulations may have been unequally targeted or motivated. For example, young civilians and ADM may have different levels of motivation.

⁴ This note focuses on participation rates because an individual's participation reflects all obstacles faced by ADM when trying to vote. However, estimates of the *UOCAVA* Registration Gap are presented in Appendix E.

elections has fluctuated considerably, ranging from a high of 68 percent to a low of 58 percent.⁵ Similar variability has been seen in congressional election participation, although turnout is considerably lower in congressional elections. As one scholar noted, “presidential campaigns are unique in a variety of ways: intensive media coverage, lavish and relatively balanced campaign resources, and comparatively high levels of voter interest and attention.”⁶ When individuals express increased interest in elections, they seek out more information about voting—and political information is more salient to them—which typically increases an individual’s motivation to vote in presidential election years. In congressional elections, the primary factors affecting participation are the competitiveness of the election and campaign dynamics that generate interest in the election. Open seat races tend to be more competitive than races with an incumbent, and most campaign activity and campaign spending are highly localized in congressional elections. This large variability in participation rates and motivation levels between presidential and congressional elections makes it difficult to evaluate the cause of changes in ADM—and specifically *UOCAVA*—voter participation over time. In order to better measure trends in obstacles to *UOCAVA* voting, a new metric that is less susceptible to motivational changes across election years is needed.

Comparing Participation Rates of More Similar Groups

Another challenge in evaluating obstacles to *UOCAVA* voting is that the existing ADM-to-CVAP comparison is limited by multiple underlying differences in the CVAP and ADM populations that directly and indirectly affect voter participation. When making a comparison between the electoral participation of two groups, it is important to ensure that the groups are as similar as possible and that, ideally, only a single factor of interest differentiates the groups.⁷ Before comparing the CVAP and ADM participation rates, adjustments are made to account for some of the differences between the two groups, so that the ADM population is compared to a demographically and geographically similar subset of the CVAP. However, even after adjusting for compositional differences, the CVAP and ADM populations differ with respect to motivation to vote.

The key differences between CVAP and ADM that affect voter participation can be divided into two categories: observable and unobservable differences. Among the key observable differences between the CVAP and ADM populations that are relevant to the motivation to vote are age and education.⁸ In 2016, the average age of employed CVAP was 43 whereas the average age of ADM was only 29. Younger, less educated voters tend to be “low propensity,” or less motivated, voters and are not typically targeted by campaigns.^{9,10} In general, much of the military population falls into

⁵ See the Census Bureau’s Voting and Registration reports: <https://www.census.gov/topics/public-sector/voting.html>. Note that the Census Bureau’s estimated participation rate will differ from that used by FVAP for the ADM-to-CVAP comparison for a number of reasons. Specifically, (1) FVAP compares the ADM participation rate to the participation rate of the employed CVAP population; (2) FVAP treats respondents reporting that they are unsure whether or not they voted as missing whereas the Census Bureau imputes a response of not voting; and (3) FVAP limits the sample to individuals for whom demographic and geographic data are available to create an adjusted comparison.

⁶ Jacobson, G. C. (2015). How do campaigns matter? *Annual Review of Political Science*, 18, 36.

⁷ See, for example, Hobbs et al. 2014 and Tiegen 2006 for examples of how such comparisons have been made between widowed and married citizens and between veterans and non-veterans, in the voting literature.

⁸ Table C-3. Post-Election Voting Survey of Active Duty Military: Technical Report 2016.

⁹ For literature on low propensity voters, see: Fisher, 2012; Leighley & Nagler, 2013; and Rosenstone & Hansen, 1993.

the low propensity category, with 44 percent of all ADM under age 25 and 66 percent under age 30.¹¹ In addition, although approximately 40 percent of employed CVAP had attained a bachelor's degree or higher in 2016, only approximately 29 percent of ADM had.¹²

Although FVAP controls for key observable differences like these in the ADM-to-CVAP comparison by adjusting the demographics of the CVAP to match the younger ADM population, there may still be important motivational differences between these two groups that adjustments cannot control for, such as changes in motivation to participate and interest in a given election over time. These factors cannot be controlled for because the differences between the ADM and CVAP populations that lead to differences in motivation are unobservable, meaning there is no data available for them. To test whether the ADM and the CVAP are dissimilar, Figure B1 in Appendix B replicates the standard ADM-to-CVAP participation comparison using only the non-*UOCAVA* ADM population in the 2016 General Election. To the degree that the difference between CVAP and ADM participation rates reflects higher obstacles to voting among *UOCAVA* ADM, and not differences between CVAP and ADM motivation levels, one would expect to observe a very small or non-existent difference between the CVAP and non-*UOCAVA* ADM participation rates. However, in 2016 there was an 8-percentage-point gap between adjusted CVAP and non-*UOCAVA* ADM participation. This difference is consistent with the idea that ADM and CVAP differ in terms of motivation to vote and that the *UOCAVA* ADM to non-*UOCAVA* ADM group comparison is a more similar one.

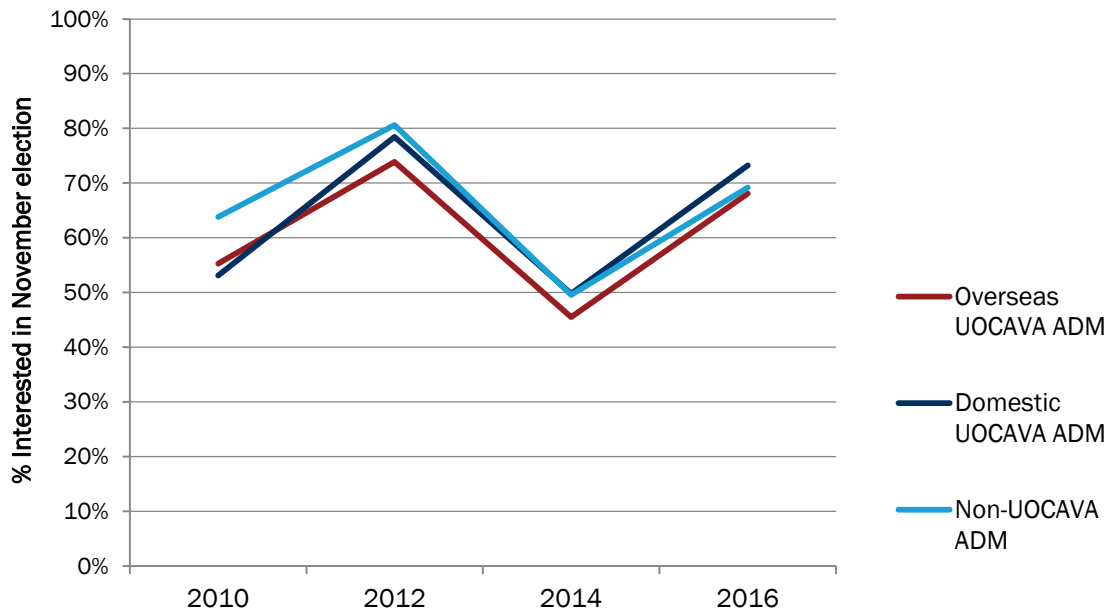
It is reasonable to assume that *UOCAVA* ADM and non-*UOCAVA* ADM are more similar than ADM and the CVAP on these unobservable factors, and thus with respect to the motivation to vote. One reason is that ADM status is not randomly assigned, but rather a function of individual choice to join the military. Factors other than demographics and geography that determine motivation to join the military, such as attitudes toward public service or family or community norms, may also be associated with motivation to vote. In addition, *UOCAVA* ADM and non-*UOCAVA* ADM are part of the same organization and are thus often exposed to similar resources, base environments, media, social networks and other factors that could impact their motivation to vote. Figure 1 presents interest rates for three ADM subpopulations: overseas *UOCAVA* ADM, domestic *UOCAVA* ADM, and non-*UOCAVA* ADM. Levels of interest to vote across all three groups generally track similar levels and trends across elections. In general, non-*UOCAVA* ADM report having the highest levels of interest, followed by domestic *UOCAVA* ADM, with overseas *UOCAVA* ADM having the lowest levels of interest. However, levels of interest are broadly similar across all three groups, consistent with the assumption of *UOCAVA* and non-*UOCAVA* ADM having very similar levels of motivation.

¹⁰ Table A-1. Reported Voting and Registration by Race, Hispanic Origin, Sex and Age Groups: November 1964 to 2016. Retrieved from: <https://www.census.gov/data/tables/time-series/demo/voting-and-registration/voting-historical-time-series.html>

¹¹ Department of Defense, Office of the Deputy Assistant Secretary of Defense for Military Community and Family Policy. (2015). *2015 demographics report: Profile of the Military*. Retrieved from: <http://download.militaryonesource.mil/12038/MOS/Reports/2015-Demographics-Report.pdf>

¹² Table C-1. Post-Election Voting Survey of Active Duty Military: Technical Report 2016.

Figure 1: Interest Rates by ADM Subpopulation



Note: Figure 1 presents self-reported rates of interest in voting for overseas *UOCAVA*, domestic *UOCAVA*, and non-*UOCAVA*. The interest rate is the fraction of *UOCAVA* that were at least “Somewhat interested” in the November election.

The factors discussed above that make ADM more similar to one another in terms of motivation to vote also contribute to how dissimilar the ADM population is to the CVAP. Although the assumption of similar motivation among ADM subgroups is not a perfect assumption, it is certainly a much more similar comparison than ADM and CVAP motivation levels. The more similar the comparison groups, the greater confidence researchers can have in attributing differences between the groups to a single variable of interest. Otherwise, differences could be due to multiple unmeasured factors. Thus, comparing *UOCAVA* and non-*UOCAVA* ADM groups that are more motivationally similar than the CVAP and ADM population allows FVAP to evaluate *UOCAVA* voter participation with greater focus on obstacles to voting.

Uniqueness of UOCAVA Voters and the UOCAVA Voting Process

When comparing *UOCAVA* ADM to non-*UOCAVA* ADM, it is expected that the *UOCAVA* ADM participation rate should be relatively lower. Voting absentee as a *UOCAVA* individual is more difficult than voting in person or as a regular absentee voter because *UOCAVA* ADM face a variety of unique barriers to voting, including registration and voting requirements and deadlines, which have been discussed in many previous reports by FVAP.¹³ This research note is more concerned with how this gap between the two populations has fluctuated over time and whether or not obstacles to

¹³ Federal Voting Assistance Program (2017). 2016 Post-Election Report to Congress; Federal Voting Assistance Program. (2016). FVAP Resource Use and Experience Among Overseas Citizens in the 2014 Election.

voting have increased for *UOCAVA* ADM. It may be useful to conceptualize the *UOCAVA* turnout comparison as a metric less prone to extreme variability by using a population for comparison that is more similar than the CVAP.

Key Research Questions

This analysis is structured around answering the following questions:

- What is the size of the *UOCAVA* Gap, and has the size changed significantly over time?
- Is the *UOCAVA* Gap a metric that is less sensitive to motivational differences than the ADM-to-CVAP comparison?
- Does the *UOCAVA* Gap differ between domestic and overseas *UOCAVA*?

Data and Methodology

To isolate *UOCAVA* ADM-specific obstacles to voting, this research note uses a new metric called the *UOCAVA* Gap. The *UOCAVA* Gap is conceptualized as a more effective metric to gauge relative *UOCAVA* participation, one that better captures obstacles to voting and is less subject to motivational variation. For illustrative purposes, assume there are identical twin brothers in the Army, one of whom is deployed overseas and is thus considered a *UOCAVA* voter and the other is stationed within his voting jurisdiction and is considered a non-*UOCAVA* voter. These two brothers are identical in every way, including their interest in politics and motivation to vote in any given election. Over time, their *UOCAVA* status does not change and they share an equal motivation that rises and falls together, depending on whether it is a midterm election, the specific candidates, or the competitiveness of the election. The non-*UOCAVA* brother votes in most, but not all, elections. The *UOCAVA* brother would vote in all the same elections as his brother; however, he faces additional challenges as a *UOCAVA* voter that may prevent him from being able to vote, even though he wants to. As a result, the *UOCAVA* brother will end up voting in fewer elections than his twin. This phenomenon is the “*UOCAVA* Gap”: the difference in voting participation between ADM who want to vote but cannot due to the challenges of being a *UOCAVA* voter.

Translating the concept of the *UOCAVA* Gap into a useful metric requires creating an appropriate proportion that is less susceptible to motivational swings. A simple metric would just be the absolute difference in participation rates for *UOCAVA* and non-*UOCAVA* ADM. This metric, however, depends on the underlying motivation to vote, which varies from election to election. When motivation is high and the same for both groups, the simple difference will be large, as the higher motivation magnifies the difference in opportunity. Alternatively, this research first calculates the *UOCAVA* Gap in terms of the *ratio* of participation rates rather than the raw magnitude difference. By dividing the participation rate of *UOCAVA* by the participation rate of non-*UOCAVA*, the effect of motivation is removed and the remaining *UOCAVA* Gap is a result of differences in opportunity. Under the assumptions that (1) all non-*UOCAVA* ADM who want to vote can vote, and that (2) levels of motivation for *UOCAVA* and non-*UOCAVA* ADM are the same, this ratio can be interpreted as the participation rate of all ADM who want to vote. Subtracting this rate from the number 1 results in the *UOCAVA* Gap, or the difference between this rate and the ideal rate in which every *UOCAVA* ADM who wants to vote can vote. Thus, a *UOCAVA* Gap of 0 would indicate that *UOCAVA* ADM voted at the same rate as non-*UOCAVA* ADM. This conceptualization is further specified in Appendix C.

Estimates of the voting rates of *UOCAVA* and non-*UOCAVA* ADM are used to create an initial estimate of the *UOCAVA* Gap. To examine how sensitive the *UOCAVA* Gap is to violations of the assumption of identical motivation, observable differences between the *UOCAVA* and non-*UOCAVA* populations that affect motivation to vote are adjusted for. First, a subset of the non-*UOCAVA* population that matches the *UOCAVA* population with respect to demographic and geographic characteristics is identified for each election. Then, the participation rate of this adjusted sample of non-*UOCAVA* is used to calculate the *UOCAVA* Gap, rather than the total sample of non-*UOCAVA*.¹⁴ To the degree that this subsample of non-*UOCAVA* are more similar to the *UOCAVA* population with respect to the motivation to vote, the resulting adjusted *UOCAVA* Gap should be a more accurate proxy for the relative *UOCAVA* opportunity to vote than the unadjusted *UOCAVA* Gap. To understand where potential differences between the adjusted and unadjusted *UOCAVA* Gaps come from, a Blinder–Oaxaca decomposition of the difference between *UOCAVA* and non-*UOCAVA* participation rates is performed for each election to understand what demographic differences are driving the trends in the unadjusted *UOCAVA* Gap. The decomposition divides the differences between the *UOCAVA* and non-*UOCAVA* rate changes into two parts: (1) the part due to differences in the demographic and geographic composition of the two populations or the “explained” difference, and (2) those due to other causes, or the “unexplained” difference.¹⁵ The explained difference can be further decomposed into that which is explained by a given characteristic.

To estimate the size of the *UOCAVA* Gap and examine its trends over time, this research note uses data derived from the PEVS-ADM for the 2010, 2012, 2014 and 2016 elections.¹⁶ The PEVS-ADM contains information on whether a respondent reported voting in that year’s election as well as the respondent’s *UOCAVA* status, defined here as the respondent being 50 miles or more from his or her voting jurisdiction during the month of the election. The PEVS-ADM also contains nonresponse/poststratification weights, which allow the weighted estimation sample to match the ADM population with respect to various observable characteristics.¹⁷ With this information, estimates of the participation rates for the *UOCAVA* and non-*UOCAVA* ADM populations, and thus the *UOCAVA* Gap, can be generated for each election in the period 2010–2016, allowing for analysis of trends in the *UOCAVA* Gap. In addition, the PEVS-ADM collects information about multiple demographic and geographic characteristics of the respondents (see Appendix A), allowing for the calculation of an adjusted *UOCAVA* Gap in which the characteristics of the non-*UOCAVA* population match those of the *UOCAVA* population. Finally, the PEVS-ADM contains information concerning whether or not the respondent was overseas, allowing for the calculation of separate *UOCAVA* Gaps for the overseas *UOCAVA* ADM and domestic *UOCAVA* ADM populations.

¹⁴ This is accomplished by estimating a logit model of participation using pooled data for each election in the 2010–2016 period. The model consists of three-way interactions between election indicators, a *UOCAVA* status indicator, and a set of demographic and geographic covariates described in Appendix A, as well as all associated main effects and two-way interactions. For each election, a prediction for the *UOCAVA* Gap is estimated for the *UOCAVA* population. The *UOCAVA* population consists of the pooled sample of *UOCAVA* respondents taken from all four PEVS. Consequently, trends in the adjusted *UOCAVA* Gap are not a function of changing demographics in the *UOCAVA* population. Alternate time series of *UOCAVA* Gaps are also estimated for the 2010 and 2016 *UOCAVA* populations. These alternate series are not substantively different from that using the pooled sample. Results are available upon request.

¹⁵ See Jann (2008) for a full description of the Blinder–Oaxaca methodology.

¹⁶ It should be noted that the survey fielding methodology and eligibility criteria changes from election to election. See the individual PEVS-ADM technical reports for more details. These methodological differences may result in differences in the *UOCAVA* Gap, and thus affect the observed trend in the *UOCAVA* Gap. Trends should thus be interpreted with caution.

¹⁷ When testing for differences in trends over time, weights for a given PEVS-ADM are normalized to sum to 1 so that samples for each election are given equal weight in the pooled estimation sample.

Results

Evaluating Motivational Assumptions in the UOCAVA Gap

The key assumption underlying the UOCAVA Gap—which contends that the metric is a valid indicator for opportunity to vote rather than motivation—is that the motivation to vote is identical between UOCAVA and non-UOCAVA ADM. This assumption would be violated if the UOCAVA ADM population were comprised of groups that had a higher or lower propensity to vote than non-UOCAVA ADM. In previous reports, FVAP has examined voters' motivation using self-reported levels of interest in voting for the ADM population. Although Figure 1 on p. 5 demonstrates how ADM subgroups have generally similar levels of interest in elections, this metric should be used and interpreted with caution. Respondents' recollection and self-report of their interest in an election may be a poor metric for their actual level of motivation to vote before an election, as having voted (or not voted) likely influences how they determine their pre-election level of interest after an election is over.

An evaluation of the motivational assumption that is less affected by measurement error involves examining changes in the UOCAVA Gap when using adjusted versus unadjusted UOCAVA and non-UOCAVA populations. To the degree that the UOCAVA and non-UOCAVA populations see different changes over time in demographic and geographic factors related to motivation, observed trends in the UOCAVA Gap may reflect these changes in relative motivation rather than changes in UOCAVA-specific obstacles to voting. In order to evaluate the assumption of equal motivation between the two populations, the adjusted and unadjusted UOCAVA Gaps for the period 2010–2016 were compared.¹⁸ The adjusted UOCAVA Gap appeared more stable than the unadjusted UOCAVA Gap, and most notably, whereas the unadjusted UOCAVA Gap declined significantly between 2010 and 2012, the decline for the adjusted gap was smaller and statistically insignificant ($p = .518$).¹⁹ This finding suggests that an adjusted Gap is necessary to make a comparison of similar groups.

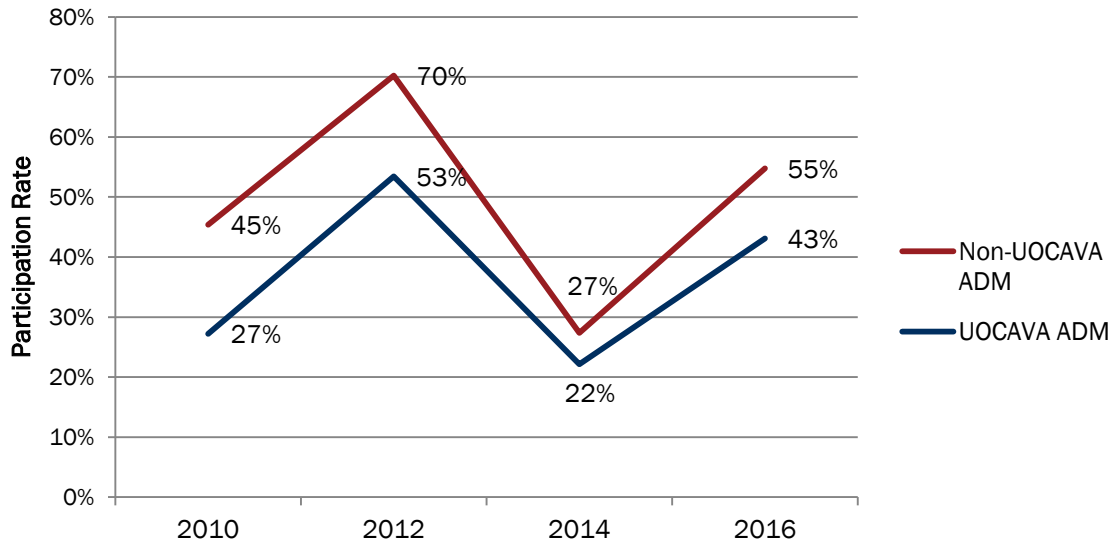
Participation Rates and the UOCAVA Gap, 2010–2016

Figure 2 displays the UOCAVA and non-UOCAVA participation rates from 2010 to 2016. Both subpopulations follow similar cyclical trends with respect to the participation rate, consistent with UOCAVA and non-UOCAVA being subject to similar election and motivation effects. Comparing the 2012 and 2014 General Elections, the difference in voting rates was greater when participation was high (2012) and lower when participation was low (2014). Conversely, the difference between participation rates of UOCAVA and non-UOCAVA decreased between 2010 and 2012 despite an increase in the overall level participation. The changes between 2010 and 2012 could reflect an actual change in obstacles to voting that dominates the change in motivation, but a metric that is less susceptible to cyclical election effects and changes in motivation is needed to test this possibility. This finding supports the use of the UOCAVA Gap, rather than the difference between UOCAVA and non-UOCAVA voting rates, to estimate UOCAVA-specific obstacles to voting.

¹⁸ Adjusted and unadjusted UOCAVA Gaps for registration along with detailed decompositions are reported in Appendix E. As was the case for participation, the unadjusted UOCAVA Gap for registration shows a downward trend between 2010 and 2016, which becomes essentially flat after the non-UOCAVA ADM population is adjusted. However, unlike the participation rate, the UOCAVA Gap for the registration rate is not statistically significantly different from 0.

¹⁹ It should be noted that because the adjusted UOCAVA Gap uses a subsample of non-UOCAVA to estimate the non-UOCAVA participation rate, the adjusted UOCAVA Gap might be less reliably estimated due to sampling variability. Consequently, a change in the adjusted UOCAVA Gap may be more likely to be statistically insignificant than a change in the unadjusted UOCAVA Gap even if such a change occurred.

Figure 2: ADM *UOCAVA* Versus Non-*UOCAVA* Participation Rates

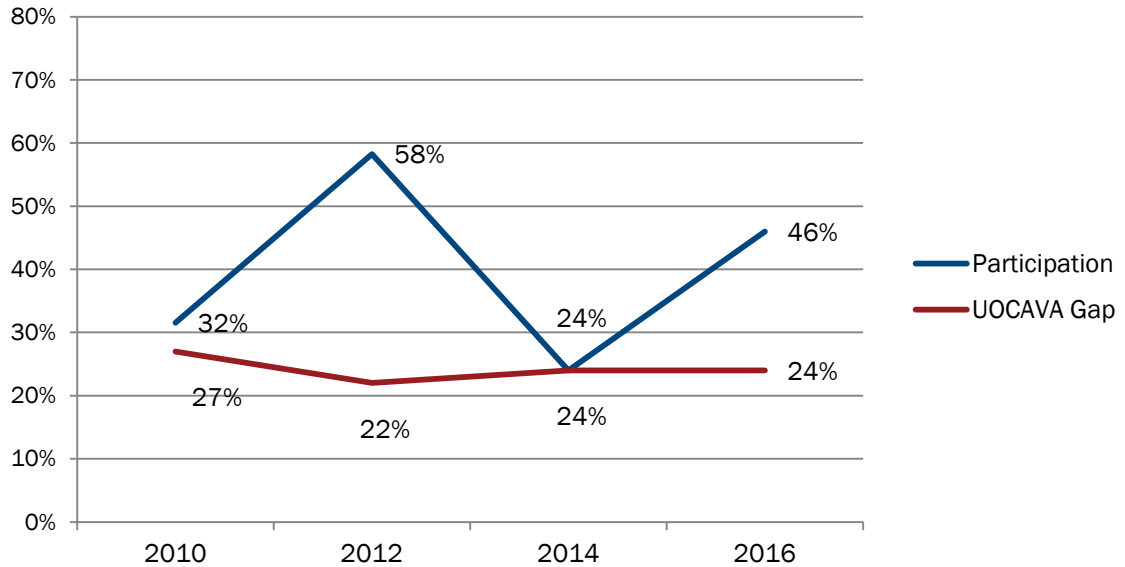


Note: Because the adjusted *UOCAVA* Gap uses a subsample of non-*UOCAVA* to estimate the non-*UOCAVA* participation rate, the adjusted *UOCAVA* Gap might be less reliably estimated due to sampling variability. Consequently, a change in the adjusted *UOCAVA* Gap may more likely be statistically insignificant than a change in the unadjusted *UOCAVA* Gap even if such a change occurred.

In Figure 3, the ADM participation rate is plotted against the *UOCAVA* Gap for the 2010–2016 General Elections. Similar to the CVAP participation rate, the ADM participation rate has fluctuated over time and exhibits a statistically significant cyclical pattern one would expect between midterm and presidential elections. Much like the CVAP participation rate, the ADM participation rate has fluctuated from a low of 32 percent to a high of 58 percent and is significantly higher in presidential election years.

By contrast, when looking at the *UOCAVA* Gap, there has been a relatively smooth and stable trend since 2010, with the *UOCAVA* Gap at a high of 27 percent in 2010 and experiencing a small and statistically insignificant decline through 2016. In 2016, *UOCAVA* ADM were 24 percent less likely to have voted than non-*UOCAVA* ADM, when controlling for demographic and geographic differences. From 2012 to 2016, the *UOCAVA* Gap metric expanded a statistically insignificant 1 percentage point. There is, consequently, little evidence of an increase in obstacles to voting for *UOCAVA* ADM compared to similarly motivated non-*UOCAVA* ADM. This conclusion stands in contrast to previous implications drawn from the participation rates presented in the 2016 PEVS-ADM Technical Report that the obstacles to voting increased between 2012 and 2016 for *UOCAVA* voters. Calculations of the ADM-to-CVAP participation metric in the 2016 PEVS-ADM Technical Report show the absolute ADM participation rate experiencing a large, statistically significant drop from 58 percent in 2012 to 46 percent in 2016. After further analysis using the *UOCAVA* Gap, the idea that obstacles to voting are increasing is less convincing. Additionally, there is little evidence of a cyclical pattern, with statistically insignificant differences between the 2016 and 2012 *UOCAVA* Gaps and the 2016 and 2014 *UOCAVA* Gaps. This stability between presidential and midterm elections is consistent with the *UOCAVA* Gap being an improved metric, less subject to variability, and not being a function of election and other motivation effects.

Figure 3: ADM Participation Rate and the *UOCAVA* Gap



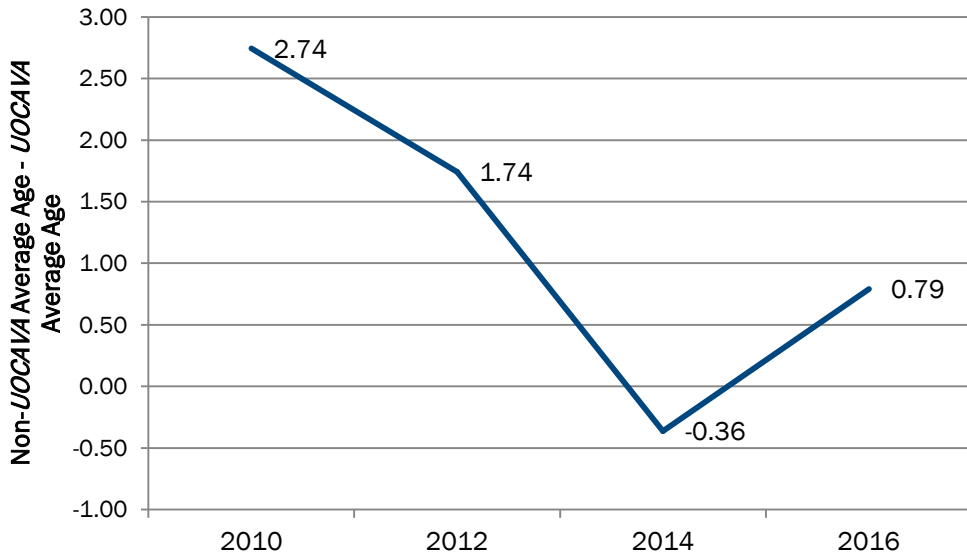
Note: Participation rate is the percentage of all ADM who reported definitely voting in person or by mail, email, online website or fax on Election Day. *UOCAVA* Gap is 1 minus the *UOCAVA* ADM participation rate over the non-*UOCAVA* ADM participation rate, adjusted for demographic and geographic differences between years.

Demographic Changes and the UOCAVA Gap

Results of the *UOCAVA* ADM to non-*UOCAVA* ADM comparisons are presented in Tables D1–D4 and show that both age and overseas status contribute to the differences in participation rates. The characteristic with the most consistent contribution to the difference in participation rates is age. The results generally imply that differences in average age between the *UOCAVA* and non-*UOCAVA* population increase the difference in participation between the *UOCAVA* and non-*UOCAVA* populations. However, the size of the difference in participation that can be attributed to age relative to the *UOCAVA* participation rate is largest during the 2010 General Election but becomes smaller in 2012. Age then contributes to a (statistically insignificant) narrowing of the participation difference in 2014 and becomes positive and significant again in 2016. This trend is consistent with the pattern in the unadjusted *UOCAVA* Gap (see Figure B2 in Appendix B), implying that changes in the relative age of the two populations explain observed trends in the *UOCAVA* Gap. These changes in relative age can be seen visually in Figure 4, which plots the difference in average age between the two populations for each election. The non-*UOCAVA* population is approximately three years older than the *UOCAVA* population in 2010, two years older in 2012, insignificantly different from 0 in 2014, and nearly one year older in 2016. To the degree that age is correlated with motivation to vote, the trends in the unadjusted *UOCAVA* Gap may reflect differential trends in the motivation to vote, rather than differences in the opportunity to vote.²⁰ This provides support for the use of an adjusted *UOCAVA* Gap when assessing trends in obstacles to vote.

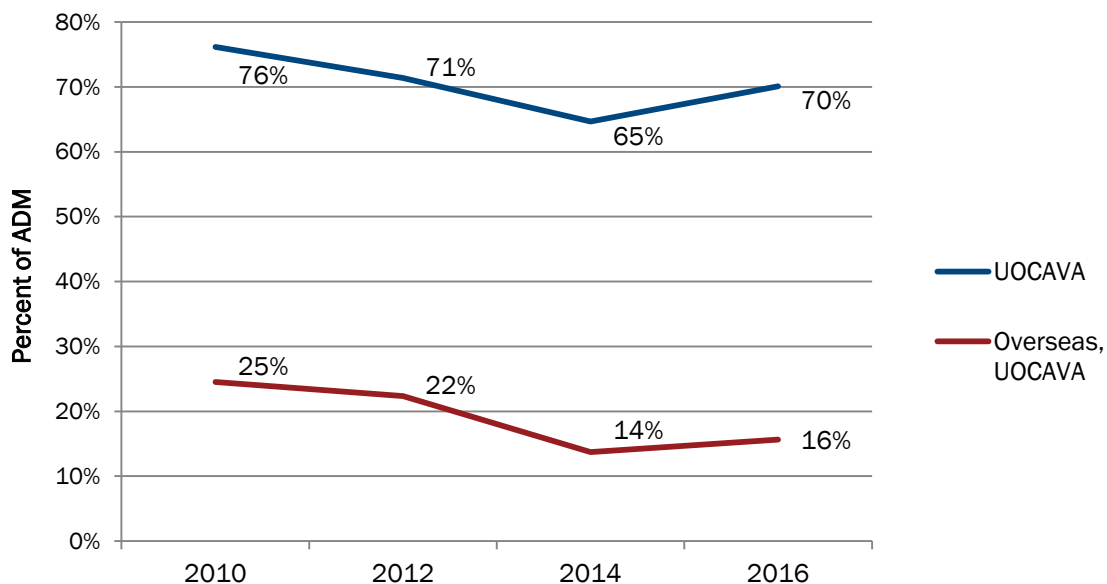
²⁰ Leighley, J. E., & Nagler, J. (2013). *Who votes now?: Demographics, Issues, Inequality, and Turnout in the United States*. Princeton University Press.

Figure 4: Difference in Average Age, Non-*UOCAVA* and *UOCAVA*



The change in relative age over time implies that younger ADM are less likely to be covered under *UOCAVA* over time, reflecting a decrease in ADM who are stationed outside an ADM's voting jurisdiction. These trends in the average age difference between *UOCAVA* and non-*UOCAVA* are mirrored by trends in the fraction of ADM who are *UOCAVA* and of *UOCAVA* ADM who were stationed overseas during the election, which are displayed in Figure 5. In evaluating demographic and geographic differences between *UOCAVA* and non-*UOCAVA*, shifts are most likely to be related to young ADM moving inside or outside their voting jurisdiction.

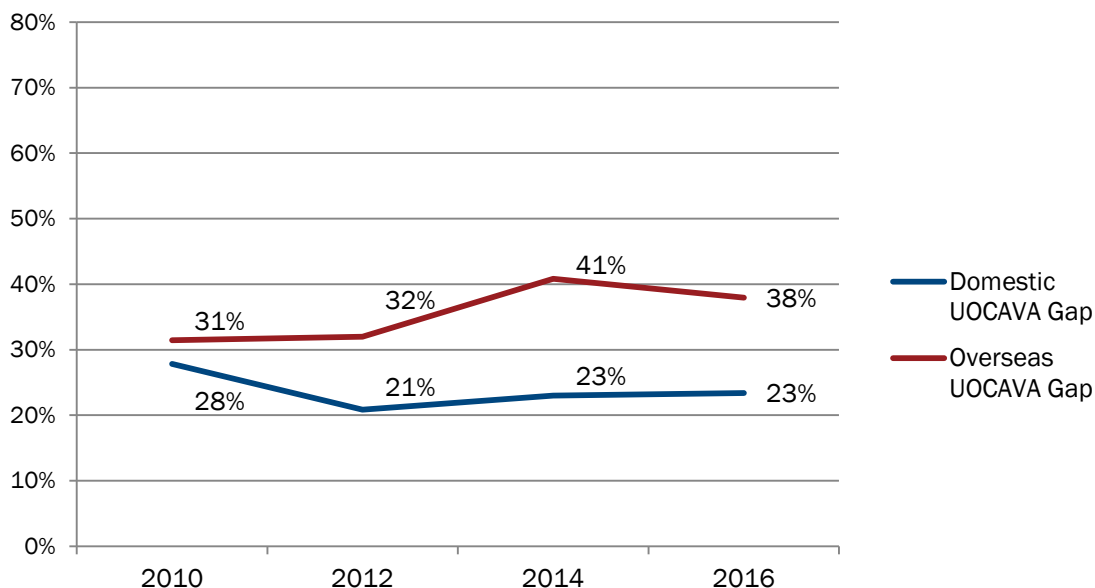
Figure 5: Trends In *UOCAVA* Status and Percentage of *UOCAVA* Stationed Overseas



Understanding the Mechanism Behind the UOCAVA Gap

To test whether the *UOCAVA* Gap represents a metric for the opportunity to vote, separate adjusted *UOCAVA* Gaps are estimated for the domestic and overseas *UOCAVA* populations (Figure 6). Assuming that overseas *UOCAVA* face greater obstacles to voting than domestic *UOCAVA*, one would expect that the overseas *UOCAVA* Gap would be larger than the domestic *UOCAVA* Gap. The *UOCAVA* Gap for overseas ADM is, on average, larger than the *UOCAVA* Gap for domestic ADM across the four elections ($p = .000$). Changes in either *UOCAVA* Gap from election to election or between 2010 and 2016 are not statistically significant. Furthermore, the election-to-election changes in the difference in the *UOCAVA* Gaps for overseas and domestic ADM are also insignificant. The evidence is consistent with stability in the *UOCAVA* Gaps for both domestic and overseas ADM. Although the results of this analysis are consistent with a stable *UOCAVA* Gap between 2010 and 2016, the consistently higher *UOCAVA* Gap for overseas *UOCAVA* implies that major reassignments of ADM overseas or back to the United States may be one source of fluctuations in the *UOCAVA* Gap in future elections.

Figure 6: Domestic and Overseas UOCAVA Gaps



Note: “Overseas” is defined as located overseas or on board a ship on Election Day. “Domestic” is defined as located in the United States or its territories on Election Day. UOCAVA Gaps are adjusted by demographic and geographic differences between years. The participation rate is the fraction all ADM in the PEVS-ADM who responded “yes” to a question concerning whether they voted in the general election. The UOCAVA Gap is 1 minus the ratio of the UOCAVA ADM participation rate over the non-UOCAVA participation rate.

Conclusion

Summary

FVAP seeks to ensure that all UOCAVA voters who want to vote are able to do so. To fulfill this goal, FVAP must measure and evaluate obstacles to participation faced by the UOCAVA ADM population. In previous reports, FVAP has used the ADM-wide participation rate or an adjusted comparison between the ADM and CVAP participation rates. However, tracking trends in the overall ADM participation rate does not discern between changes due to fluctuations in the motivation to vote versus changes in the opportunity to vote. The difference in the ADM and CVAP participation rates may be an unreliable metric for tracking obstacles to vote because (1) it reflects differences in the motivation to vote between the two populations, and (2) since all ADM are being compared to CVAP, it may systematically underestimate the effect of obstacles to voting specific to the UOCAVA ADM population. This research note explains how these issues might be overcome by introducing a new metric for tracking the obstacles to voting faced by UOCAVA ADM, the UOCAVA Gap, which compares the participation rate of the UOCAVA ADM population with that of non-UOCAVA ADM population. This note shows the UOCAVA Gap is an improved metric for evaluating ADM participation because it more effectively compares ADM voting absentee to a domestically similar population, isolates the effect of obstacles to voting and overcomes variability issues between presidential and midterm elections.

Key findings from this analysis include:

- After adjusting for differences in demographics and geography, the *UOCAVA* Gap was between 22 and 27 percent from 2010 to 2016, suggesting equally motivated *UOCAVA* ADM were one-fourth less likely to vote than non-*UOCAVA* population due to obstacles to voting.
- The *UOCAVA* Gap has shown a downward trend since 2010. However, this pattern appears to be a function of differences in demographic trends between the *UOCAVA* and non-*UOCAVA* ADM populations.
- Unlike the overall ADM participation rate, the *UOCAVA* Gap does not systematically fluctuate between midterm and presidential elections.
- The *UOCAVA* Gap for overseas ADM is, on average, higher than the *UOCAVA* Gap for domestic ADM, consistent with overseas individuals facing greater obstacles to voting than domestic individuals.

Policy Implications

This report provides evidence that FVAP could benefit from using the *UOCAVA* Gap to evaluate assistance toward one of its key populations, and for measuring levels and trends in obstacles to voting faced by the *UOCAVA* ADM population. FVAP's voting assistance should continue to aim to keep the *UOCAVA* Gap as small as possible. Additionally, a heavier focus on *UOCAVA*-specific measures and outcomes in future reports—such as FVAP's Post-Election Report to Congress—using this methodology can assist FVAP with evaluating the effectiveness of its assistance and resources on *UOCAVA* absentee voting. The analyses in this report provide justification for a new metric, the *UOCAVA* Gap, which can serve as a tool to direct future research.

Limitations and Future Directions

Although the *UOCAVA* Gap may be a better proxy for *UOCAVA* opportunity to vote, this report found evidence that the *UOCAVA* Gap may still fluctuate due to differential changes in the demographic composition of the *UOCAVA* and non-*UOCAVA* ADM populations. These differences appear to be related to differential changes in the age composition, which in turn may reflect changes in the fraction of ADM who are assigned to a station outside their voting jurisdiction. In future analyses, the *UOCAVA* and non-*UOCAVA* populations should always be adjusted before calculating and interpreting the *UOCAVA* Gap.

However, although this analysis used a set of demographic and geographic variables consistent with prior ADM-to-ADM or ADM-to-CVAP comparisons performed by FVAP, future work may explore the use of other characteristics to adjust for differences between the two populations, such as service and paygrade. More generally, whereas the assumption of similar levels of motivation to vote may be more realistic when comparing *UOCAVA* and non-*UOCAVA* ADM than comparing ADM to CVAP, there may always be unobservable differences in characteristics between the two populations that impact motivation.²¹ These differences may not merely reflect differences in demographics and geography, but also reflect an effect of *UOCAVA* status on motivation to vote. Examining what effect, if any, *UOCAVA* status has on self-reported motivation to vote would be another direction for future research.

²¹ The portion of the *UOCAVA* Gap left unexplained by demographic and geographic variables varies from election to election. See Figure B2 in Appendix B for a comparison of the adjusted and unadjusted Gaps from 2010 to 2016.

A potential limitation of using the *UOCAVA* Gap as an instrument to gauge the effectiveness of FVAP policies is that, even if the Gap accurately reflects obstacles to voting for the *UOCAVA* ADM population in a given election, the size of the Gap might change between elections because of changes in the composition of the ADM population. If, for instance, the obstacles to *UOCAVA* voting were greater for younger, less experienced voters and the *UOCAVA* population became younger relative to the non-*UOCAVA* population between elections, one would expect to see the *UOCAVA* Gap grow. Or, if in a later election a larger fraction of *UOCAVA* were stationed outside of the United States, overall mail reliability would decrease for *UOCAVA*, thus increasing the *UOCAVA* Gap. The effect of this limitation is likely insubstantial in this research note's analysis because the *UOCAVA* ADM population was held fixed across elections with respect to observable demographics. However, if the *UOCAVA* Gap is incorporated in future reports to Congress, it will presumably be calculated separately for each election, and thus comparisons with previous elections will not hold the composition of *UOCAVA* ADM constant. When examining trends in the *UOCAVA* Gap, it is important to pool data from previous reports and generate an estimate of the *UOCAVA* Gap to account for changes in the composition of the *UOCAVA* population.

Related to this last point, future FVAP outreach efforts could estimate separate *UOCAVA* Gaps for relevant subsamples of the *UOCAVA* population. Doing so would help FVAP obtain more reliable support for inferences about the trends in the effectiveness of FVAP/DoD voting assistance resources. Estimating subgroup-specific *UOCAVA* Gaps may also help FVAP explore how to tailor materials to specific subsets of the *UOCAVA* ADM population, which may improve the effectiveness of voting assistance. The PEVS-ADM could also be evaluated to capture more detail on the differences between *UOCAVA* and non-*UOCAVA* ADM with the addition of questions based on *UOCAVA* status. Overall, future efforts could benefit from embracing a focus on *UOCAVA* status in FVAP research.

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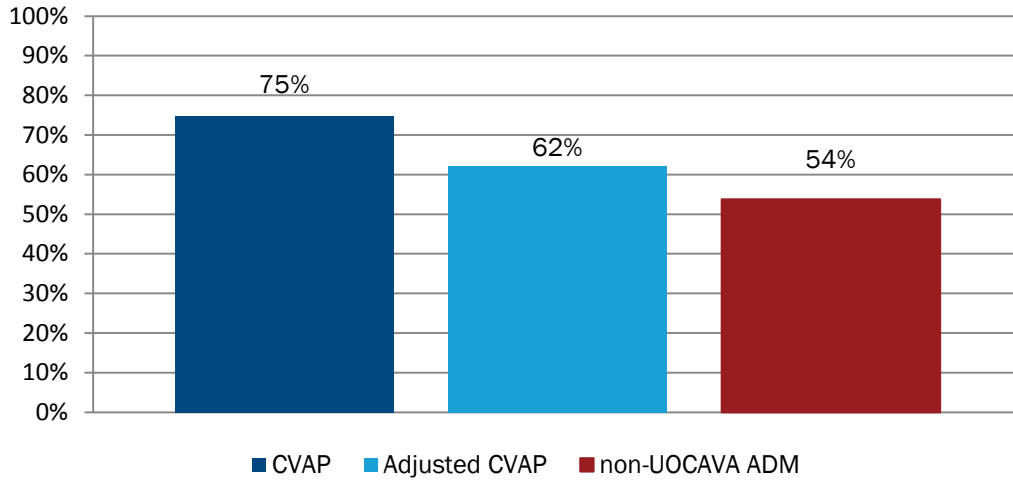
Appendix A: Variable Definitions

Variable	Description
<i>UOCAVA</i>	1 for living 50+ miles outside location where registered to vote; 0 for living less than 50 miles from location where registered to vote
Voted	1 for reported definitely voting in person or by mail, email, online website, or fax on November 8, 2016; 0 for not
Overseas	1 for located overseas or on board a ship; 0 for located in the United States/territories on November 8, 2016
Mobility	1 if changed residential address in past year; 0 if in residential address one year or longer
Male	1 for male; 0 for female
Family Status	1 if single with children; 2 if single without children; 3 if married with children; 4 if married without children
Education	1 for no college education; 2 for some college or associate degree; 3 for bachelor's degree in college; 4 for MA/Ph.D./professional degree
Age	Continuous age of respondent on Election Day
Age Square	Square of continuous age of respondent on Election Day
Race/Ethnicity	1 for non-minority; 2 for non-Hispanic Black; 3 for Hispanic; 4 for all others
Region	10 U.S. Census Bureau Regions ²²

²² New England (CT, ME, MA, NH, RI, VT), Middle Atlantic (NJ, NY, PA), East North Central (IN, IL, MI, OH, WI), West North Central (IA, KS, MN, MO, NE, ND, SD), South Atlantic (DE, DC, FL, GA, MD, NC, SC, VA, WV), East South Central (AL, KY, MS, TN), West South Central (AR, LA, OK, TX), Mountain (AZ, CO, ID, NM, MT, UT, NV, WY), Pacific (AK, CA, HI, OR, WA), Other Territories (AS, GU, PR, VI).

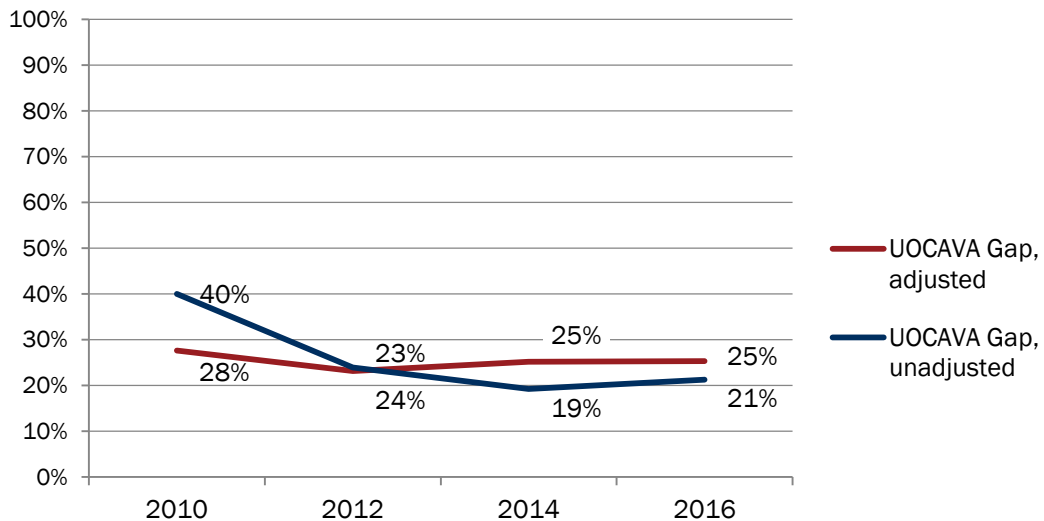
Appendix B: Additional Figures

Figure B1: CVAP and non-*UOCAVA* ADM Voting Rates in 2016, Adjusted and Unadjusted Comparison



Note: The methodology used to match non-*UOCAVA* ADM to observationally similar CVAP is discussed in the results section. The CVAP and non-*UOCAVA* ADM participation rates in Figure B1 differ from the prior FVAP analysis due to differences in the sample. Data requirements for this analysis necessitate the exclusion of observations in the PEVS-ADM and November CPS, resulting in different participation rates than reported in descriptive reports. See Appendix A for variables for which missing data will result in exclusion. Detailed decomposition results are available upon request.

Figure B2: Adjusted and Unadjusted *UOCAVA* Gaps



Note: Unadjusted *UOCAVA* Gap is 1 minus the *UOCAVA* ADM participation rate over the non-*UOCAVA* ADM participation rate. Adjusted *UOCAVA* Gap is the same calculation, but controls for the demographic and geographic variables presented in Appendix A.

Appendix C: Estimating the *UOCAVA* Gap

The discussion in the report body lays out the logic of the *UOCAVA* Gap, but the argument can be laid out in a slightly more technical manner. A simple model of the voting rate is:

$$1) V_i = O_i * M$$

In which V is the probability of voting for group i , O is the probability of voting conditional on being motivated to vote, or the opportunity to vote, and M is the probability that an individual is motivated to vote, which is assumed to be constant across groups. The difference between the *UOCAVA* and non-*UOCAVA* ADM voting rates can be written as:

$$2) V_{UOCAVA} - V_{NUOCAVA} = O_{UOCAVA} * M - O_{NUOCAVA} * M = (O_{UOCAVA} - O_{NUOCAVA}) * M$$

Note that the simple difference is a function of motivation, and thus will change with level of ADM motivation. However, rearranging:

$$3) O_{UOCAVA} = \frac{(V_{UOCAVA} - V_{NUOCAVA})}{M} + O_{NUOCAVA}$$

Assume $O_{NUOCAVA} = 1$, that is, non-*UOCAVA* ADM have the maximum opportunity to vote. Then it follows from Equation 1 that $V_{NUOCAVA} = M$. Substituting these equations into Equation 3 yields:

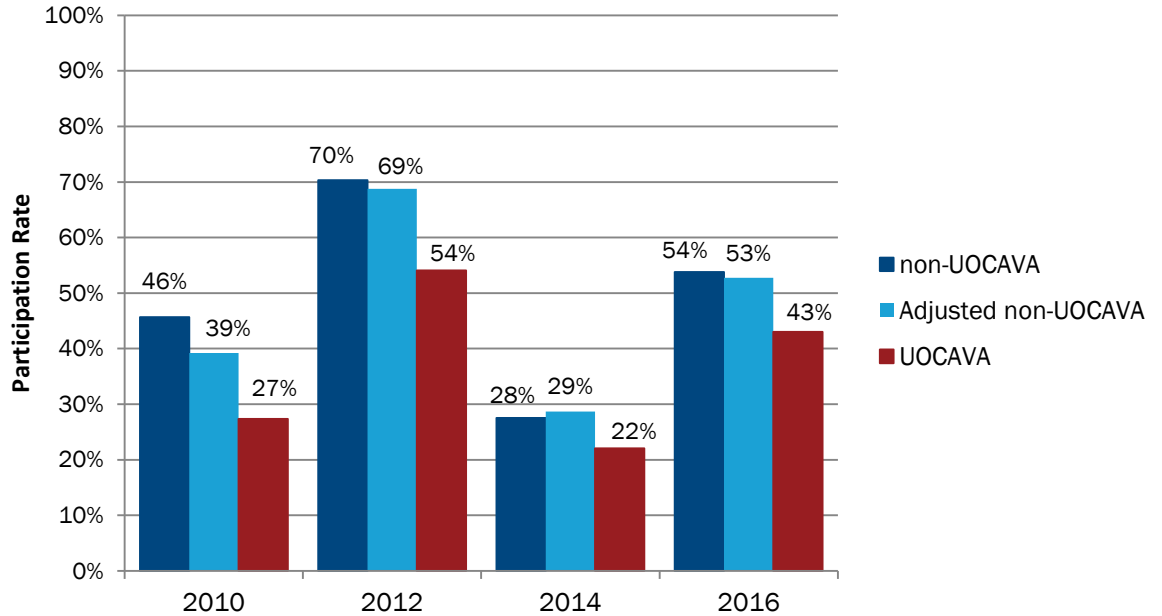
$$4) O_{UOCAVA} = \frac{(V_{UOCAVA} - V_{NUOCAVA})}{V_{NUOCAVA}} + 1 = \frac{V_{UOCAVA}}{V_{NUOCAVA}}$$

Thus, we can derive a quantity that only varies over time due to *UOCAVA* opportunity to vote based on the ratio of the observed voting rates of *UOCAVA* and non-*UOCAVA*. Alternatively, if we relax the assumption that $O_{NUOCAVA} = 1$, we can still interpret Equation 4 as *UOCAVA* ADM's opportunity to vote as a percentage of the maximum potential ADM voting rate (that of non-*UOCAVA*). Given that FVAP's voting assistance resources are targeted toward *UOCAVA* ADM, a rise in the use or effectiveness of FVAP resources should, all else being equal, be reflected in a rise in the *UOCAVA* to non-*UOCAVA* voting rate. The *UOCAVA* Gap can then be written as:

$$5) UOCAVA \text{ GAP} = 1 - O_{UOCAVA}$$

Appendix D: Decomposition Results by Election

Figure D1: *UOCAVA* and non-*UOCAVA* ADM Participation Rates, Adjusted and Unadjusted Comparisons



Note: The *UOCAVA* and non-*UOCAVA* ADM participation rates for this analysis will differ from that of the ADM population due to differences in the sample. Data requirements for this analysis necessitate the exclusion of observations in the PEVS-ADM, resulting in different turnout rates. See Appendix A for specific exclusion criteria.

Table D1: Decomposition of Difference Between *UOCAVA* and non-*UOCAVA* Participation Rates, 2010 Election

VARIABLE	FREQUENCY/DIFFERENCE (PERCENT SCALE)	STANDARD ERROR	95% CI LOWER BOUND	95% CI UPPER BOUND
TOTAL DIFFERENCE (ADM, 2012–ADM, 2016)				
Non- <i>UOCAVA</i>	45.65***	2.18	41.37	49.93
<i>UOCAVA</i>	27.37***	1.24	24.95	29.80
Difference	18.27***	2.51	13.35	23.19
EXPLAINED DIFFERENCE (NON-<i>UOCAVA</i>–MODELED NON-<i>UOCAVA</i>)				
Mobility	0.02	0.13	-0.23	0.26
Male	0.03	0.13	-0.23	0.29
Family	0.37	0.77	-1.15	1.88
Education	0.09	0.31	-0.52	0.70
Age	4.02***	1.24	1.59	6.46
Race	-0.01	0.35	-0.70	0.68
Region	1.92*	1.01	-0.07	3.90
Total Explained	6.43***	1.56	3.36	9.50
UNEXPLAINED DIFFERENCE (MODELED NON-<i>UOCAVA</i>–<i>UOCAVA</i>)				
Total Unexplained	11.84***	2.90	6.16	17.52

* $p < .10$, ** $p < .05$, *** $p < .01$

Table D2: Decomposition of Difference Between *UOCAVA* and non-*UOCAVA* Participation Rates, 2012 Election

VARIABLE	FREQUENCY/DIFFERENCE (PERCENT SCALE)	STANDARD ERROR	95% CI LOWER BOUND	95% CI UPPER BOUND
TOTAL DIFFERENCE (ADM, 2012–ADM, 2016)				
Non- <i>UOCAVA</i>	70.31***	1.45	67.46	73.16
<i>UOCAVA</i>	54.07***	0.89	52.33	55.81
Difference	16.24***	1.71	12.90	19.58
EXPLAINED DIFFERENCE (NON-<i>UOCAVA</i>–MODELED NON-<i>UOCAVA</i>)				
Mobility	0.68*	0.39	-0.09	1.45
Male	-0.00	0.05	-0.11	0.10
Family	0.41	0.42	-0.42	1.23
Education	-0.69	0.42	-1.52	0.14
Age	1.45***	0.44	0.59	2.31
Race	-0.54	0.28	-1.10	0.01
Region	0.24	0.48	-0.70	1.17
Total Explained	1.54	1.04	-0.49	3.57
UNEXPLAINED DIFFERENCE (MODELED NON-<i>UOCAVA</i>–<i>UOCAVA</i>)				
Total Unexplained	14.70***	1.77	11.23	18.18

* $p < .10$, ** $p < .05$, *** $p < .01$

Table D3: Decomposition of Difference Between *UOCAVA* and non-*UOCAVA* Participation Rates, 2014 Election

VARIABLE	FREQUENCY/DIFFERENCE (PERCENT SCALE)	STANDARD ERROR	95% CI LOWER BOUND	95% CI UPPER BOUND
TOTAL DIFFERENCE (ADM, 2012-ADM, 2016)				
Non- <i>UOCAVA</i>	27.52***	1.17	25.23	29.81
<i>UOCAVA</i>	22.08***	0.75	20.61	23.54
Difference	5.44***	1.39	2.73	8.16
EXPLAINED DIFFERENCE (NON-<i>UOCAVA</i>-MODELED NON-<i>UOCAVA</i>)				
Mobility	-0.09	0.14	-0.37	0.18
Male	0.07	0.07	-0.07	0.21
Family	0.15	0.12	-0.08	0.39
Education	-0.85***	0.28	-1.40	-0.31
Age	-0.73*	0.43	-1.58	0.11
Race	-0.31	0.28	-0.85	0.24
Region	0.59	0.44	-0.27	1.45
Total Explained	-1.17	0.76	-2.66	0.32
UNEXPLAINED DIFFERENCE (MODELED NON-<i>UOCAVA</i>-<i>UOCAVA</i>)				
Total Unexplained	6.62***	1.36	3.96	9.28

* $p < .10$, ** $p < .05$, *** $p < .01$

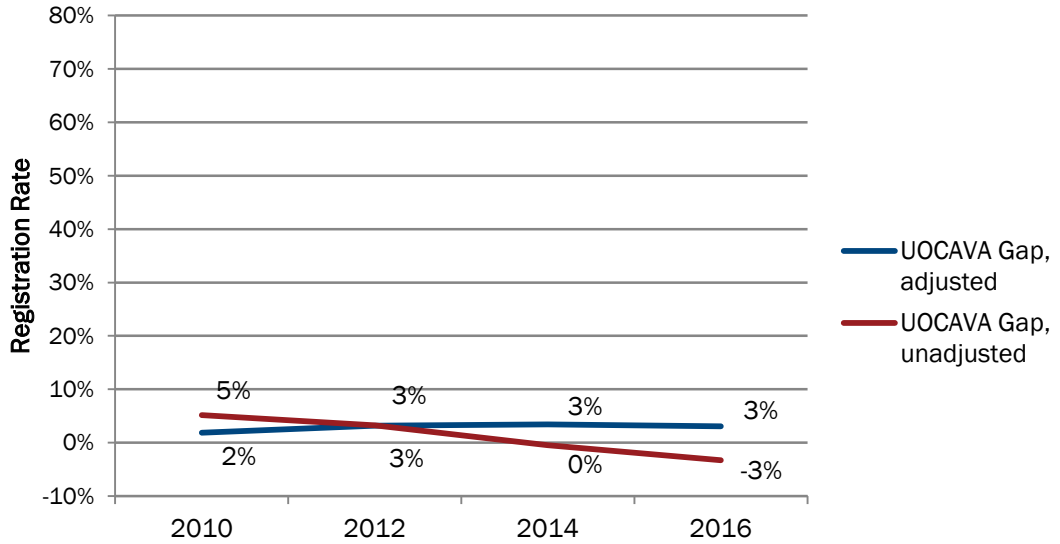
Table D4: Decomposition of Difference Between *UOCAVA* and non-*UOCAVA* Participation Rates, 2016 Election

VARIABLE	FREQUENCY/DIFFERENCE (PERCENT SCALE)	STANDARD ERROR	95% CI LOWER BOUND	95% CI UPPER BOUND
TOTAL DIFFERENCE (ADM, 2012-ADM, 2016)				
Non- <i>UOCAVA</i>	53.78***	2.10	49.67	57.90
<i>UOCAVA</i>	42.99***	1.36	40.33	45.66
Difference	10.79***	2.50	5.89	15.69
EXPLAINED DIFFERENCE (NON-<i>UOCAVA</i>-MODELED NON-<i>UOCAVA</i>)				
Mobility	0.03	0.28	-0.52	0.59
Male	-0.01	0.08	-0.17	0.15
Family	0.93	0.68	-0.42	2.27
Education	-0.47	0.38	-1.21	0.27
Age	1.63**	0.80	0.07	3.20
Race	-1.45**	0.60	-2.63	-0.27
Region	0.39	0.92	-1.41	2.19
Total Explained	1.05	1.68	-2.25	4.35
UNEXPLAINED DIFFERENCE (MODELED NON-<i>UOCAVA</i>-<i>UOCAVA</i>)				
Total Unexplained	9.74***	2.34	5.14	14.33

* $p < .10$, ** $p < .05$, *** $p < .01$

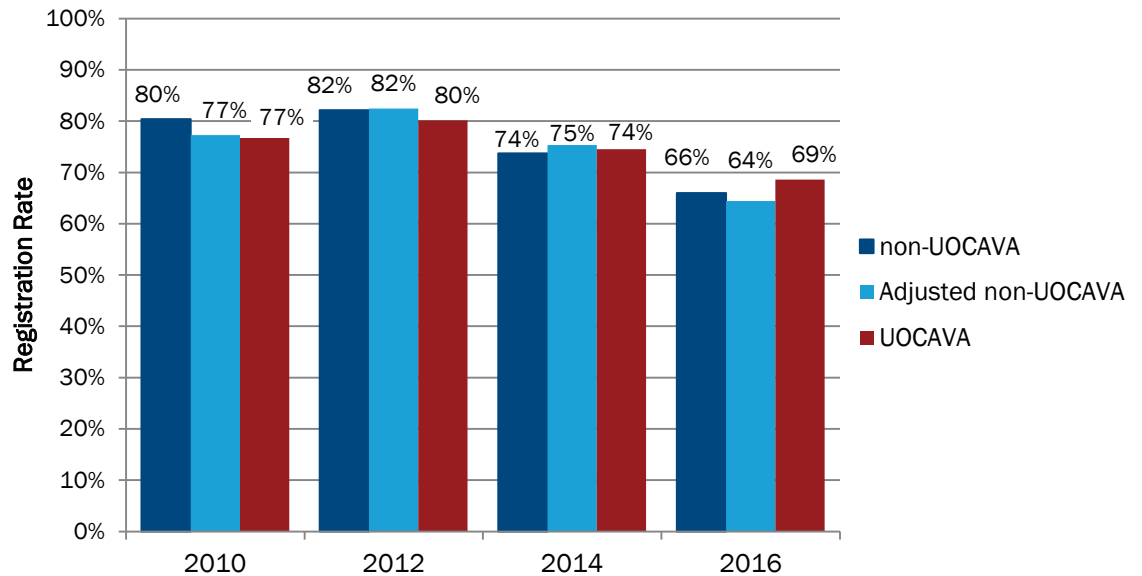
Appendix E: The *UOCAVA* Registration Gap

Figure E1: Adjusted and Non-Adjusted *UOCAVA* Registration Gap by Election



Note: The figure presents adjusted and unadjusted *UOCAVA* registration gaps, defined as 1 minus the ratio of *UOCAVA* over non-*UOCAVA* registration rates.

Figure E2: *UOCAVA* and non-*UOCAVA* ADM Registration Rates, Adjusted and Unadjusted Comparisons



Note: The *UOCAVA* and non-*UOCAVA* ADM registration rates for this analysis will differ from that of the ADM population due to differences in the sample. Data requirements for this analysis necessitate the exclusion of observations in the PEVS-ADM and November CPS, resulting in different turnout rates. See Appendix A for specific exclusion criteria.

Table E1: Decomposition of Difference Between *UOCAVA* and non-*UOCAVA* Registration Rates, 2010 Election

VARIABLE	FREQUENCY/DIFFERENCE (PERCENT SCALE)	STANDARD ERROR	95% CI LOWER BOUND	95% CI UPPER BOUND
TOTAL DIFFERENCE (ADM, 2012-ADM, 2016)				
Non- <i>UOCAVA</i>	80.39***	2.00	76.48	84.30
<i>UOCAVA</i>	76.73***	1.24	74.30	79.17
Difference	3.66	2.35	-0.95	8.27
EXPLAINED DIFFERENCE (NON-<i>UOCAVA</i>-MODELED NON-<i>UOCAVA</i>)				
Mobility	0.02	0.15	-0.27	0.31
Male	0.14	0.16	-0.18	0.46
Family	1.33*	0.79	-0.22	2.88
Education	0.64*	0.37	-0.08	1.36
Age	1.17	0.90	-0.59	2.94
Race	-0.56	0.39	-1.32	0.19
Region	0.39	0.91	-1.40	2.17
Total Explained	3.13**	1.50	0.20	6.07
UNEXPLAINED DIFFERENCE (MODELED NON-<i>UOCAVA</i>-<i>UOCAVA</i>)				
Total Unexplained	0.53	2.92	-5.19	6.25

* $p < .10$, ** $p < .05$, *** $p < .01$

Table E2: Decomposition of Difference Between *UOCAVA* and non-*UOCAVA* Registration Rates, 2012 Election

VARIABLE	FREQUENCY/DIFFERENCE (PERCENT SCALE)	STANDARD ERROR	95% CI LOWER BOUND	95% CI UPPER BOUND
TOTAL DIFFERENCE (ADM, 2012-ADM, 2016)				
Non- <i>UOCAVA</i>	82.15***	1.29	79.63	84.68
<i>UOCAVA</i>	80.11***	0.80	78.55	81.67
Difference	2.04	1.51	-0.93	5.01
EXPLAINED DIFFERENCE (NON-<i>UOCAVA</i>-MODELED NON-<i>UOCAVA</i>)				
Mobility	0.47	0.35	-0.22	1.16
Male	-0.00	0.05	-0.10	0.10
Family	0.11	0.38	-0.63	0.84
Education	-0.52	0.34	-1.18	0.15
Age	0.67**	0.29	0.10	1.24
Race	-0.88***	0.32	-1.50	-0.26
Region	-0.14	0.39	-0.91	0.63
Total Explained	-0.29	0.81	-1.87	1.29
UNEXPLAINED DIFFERENCE (MODELED NON-<i>UOCAVA</i>-<i>UOCAVA</i>)				
Total Unexplained	2.33	1.54	-0.68	5.34

* $p < .10$, ** $p < .05$, *** $p < .01$

Table E3: Decomposition of Difference Between *UOCAVA* and non-*UOCAVA* Registration Rates, 2014 Election

VARIABLE	FREQUENCY/DIFFERENCE (PERCENT SCALE)	STANDARD ERROR	95% CI LOWER BOUND	95% CI UPPER BOUND
TOTAL DIFFERENCE (ADM, 2012-ADM, 2016)				
Non- <i>UOCAVA</i>	73.71***	1.24	71.27	76.14
<i>UOCAVA</i>	74.50***	0.89	72.74	76.25
Difference	-0.79	1.53	-3.79	2.21
EXPLAINED DIFFERENCE (NON-<i>UOCAVA</i>-MODELED NON-<i>UOCAVA</i>)				
Mobility	-0.02	0.04	-0.09	0.06
Male	-0.01	0.07	-0.14	0.12
Family	0.10	0.15	-0.19	0.39
Education	-0.58**	0.23	-1.04	-0.13
Age	-0.56*	0.32	-1.19	0.07
Race	-0.85**	0.34	-1.51	-0.19
Region	0.30	0.48	-0.65	1.25
Total Explained	-1.61**	0.71	-2.99	-0.23
UNEXPLAINED DIFFERENCE (MODELED NON-<i>UOCAVA</i>-<i>UOCAVA</i>)				
Total Unexplained	0.82	1.50	-2.12	3.75

* $p < .10$, ** $p < .05$, *** $p < .01$

Table E4: Decomposition of Difference Between *UOCAVA* and non-*UOCAVA* Registration Rates, 2016 Election

VARIABLE	FREQUENCY/DIFFERENCE (PERCENT SCALE)	STANDARD ERROR	95% CI LOWER BOUND	95% CI UPPER BOUND
TOTAL DIFFERENCE (ADM, 2012-ADM, 2016)				
Non- <i>UOCAVA</i>	66.00***	2.01	62.06	69.94
<i>UOCAVA</i>	68.58***	1.38	65.87	71.29
Difference	-2.59	2.44	-7.37	2.20
EXPLAINED DIFFERENCE (NON-<i>UOCAVA</i>-MODELED NON-<i>UOCAVA</i>)				
Mobility	0.14	0.27	-0.39	0.67
Male	-0.06	0.10	-0.27	0.14
Family	1.45**	0.69	0.09	2.82
Education	-0.32	0.29	-0.88	0.25
Age	1.03*	0.59	-0.12	2.19
Race	-1.39**	0.70	-2.76	-0.03
Region	0.70	0.94	-1.15	2.54
Total Explained	1.56	1.63	-1.63	4.74
UNEXPLAINED DIFFERENCE (MODELED NON-<i>UOCAVA</i>-<i>UOCAVA</i>)				
Total Unexplained	-4.14*	2.45	-8.95	0.67

* $p < .10$, ** $p < .05$, *** $p < .01$