

## Comparing 2004 and 2008 Self-Reported Voter Participation

### Issue

On behalf of the Secretary of Defense, the director of the Federal Voting Assistance Program (FVAP) is responsible for administering the *Uniformed and Overseas Citizens Absentee Voting Act* (UOCAVA). The UOCAVA requires that states and territories permit members of the Uniformed Services, their family members, and United States citizens residing outside the United States to vote in the elections for federal offices. To assess FVAP support mandated by the UOCAVA, in 2004, FVAP conducted surveys of Uniformed Service members and federal civilians overseas. In 2008, FVAP requested DMDC's assistance in conducting these quadrennial surveys.<sup>1</sup> In addition to items which assessed FVAP support, survey questions were included on voter participation in the 2008 general election.

This note examines methodological differences between the 2008 and 2004 surveys. Due to these differences, no direct comparisons can be made between the results from the 2004 and 2008 surveys on military and civilian voter participation. While precluding direct comparisons between 2004 and 2008 surveys, the improved methodology produces more accurate estimates and provides a firmer benchmark for comparing voter participation rates of the general population, Uniformed Service members, and federal civilians overseas.

### Methodological Differences

#### Differences in Question Wording

To assess voting behavior on the 2008 quadrennial surveys, respondents<sup>2</sup> were asked:

*In the election held on November 4, did you definitely vote in person on election day, definitely mail or fax a completed absentee ballot on or before November 4, definitely not vote, or are you not completely sure whether you voted in that election?*

- *Definitely voted in person*
- *Definitely voted by mail or fax*
- *Definitely did not vote*
- *Not sure*<sup>3</sup>

<sup>1</sup> The three survey instruments used to assess the program were the *November 2008 Status of Forces Surveys (SOFS) of Active Duty Members and Reserve Members* and the *2008 Post-Election Voting Survey of Federal Civilians Overseas (PEV3)*.

<sup>2</sup> Respondents for the 2008 surveys include active duty and Reserve component members of the Army, Navy, Marine Corps, Air Force and Coast Guard (Uniformed Services) and federal civilian employees living and working overseas.

<sup>3</sup> Respondents who indicated they were not sure if they voted in the 2008 election will not be included in comparisons to 2004 results.

A similar item was used on the 2004 survey to assess voting behavior of Uniformed Service members (with no distinction made between active and Reserve component members) and federal civilians overseas:

*Did you vote in the November 2004 election and if so, did you vote in person or by absentee ballot?*

- *Yes, I voted in person*
- *Yes, I voted by absentee ballot*
- *No, I did not vote*

Another difference in the wording of the 2004 and 2008 surveys is that the 2008 surveys have a question which precedes the voting item:

*A lot of people were not able to vote because they weren't registered, they were sick, they didn't have time, or something else happened to prevent them from voting. And sometimes, people who USUALLY vote or who PLANNED to vote forget that something UNUSUAL happened on election day this year that prevented them from voting THIS time. So please think carefully for a minute about the election held on November 4, and past elections in which you may have voted, and answer the following questions. During the past 6 years, did you usually vote in national, state, and local elections, or did you usually not vote?*

This question uses language similar to what is included in the American National Election Surveys (ANES). The purpose of including this question is that it allows nonvoters to “save face” yet tell the truth about their failure to vote in the previous election (Presser, 1990). If a survey does not include a statement designed to lessen the stigma of nonvoting, then the survey will overestimate the percentage of people who actually did vote (Belli, Traugott, Young, & McGonagle, 1999). Even if all other factors were equal, the 2004 survey overestimated the percent who voted because the language in the 2004 survey did not include a statement designed to make it easier for respondents to admit that they did not vote in the previous election.

### **Differences in Sampling**

There were major differences in sampling between the 2004 and 2008 surveys. The sample for the *2004 Post-Election Voting Survey of Uniformed Service Members* used a simplified design allocated equally among 20 strata consisting of the five Services (Army, Navy, Marine Corps, Air Force, and Coast Guard) by enlisted/officer by CONUS/OCONUS (with only Coast Guard officers OCONUS having fewer sample members). The sample for the *2004 Post-Election Voting Survey of Federal Civilians Overseas* consisted of 3,000 overseas Department of Defense (DoD) civilians from anywhere outside the U.S. and included U.S. citizens only. Additional sample design documentation is not available.

In contrast, the 2008 Uniformed Service member samples used single-stage stratified sample designs. The allocation was nonproportional, with over-sampling of small domains and population subgroups having low response rates. The total sample size was based on precision requirements for key reporting domains. The allocation was determined by an optimization algorithm that minimized the cost of the survey while meeting the precision requirements. For the 2008 active Uniformed members, six population characteristics defined the stratification dimensions: Service, paygrade, gender,

race/ethnicity, duty location, and family status. The frame was partitioned into 217 strata, produced by cross-classification of the stratification variables. For the 2008 Reserve Uniformed members, six population characteristics defined the stratification dimensions: activation status, Reserve component, race/ethnicity, gender, paygrade, and unit of Service. The frame was partitioned into 394 strata. Within each stratum, individuals were selected with equal probability and without replacement. However, because allocation of the sample was not proportional to the size of the strata, selection probabilities varied among strata, and individuals were not selected with equal probability overall. Nonproportional allocation was used to achieve adequate sample sizes for small subpopulations of analytic interest (i.e., the survey reporting domains).

For the 2008 survey of overseas federal civilians, the sample was designed to represent all American federal civilian employees living and working overseas. The sample frame was divided into three segments: 1) Department of State employees, 2) DoD employees, and 3) employees for all other federal agencies.<sup>4</sup> The frame was stratified by geographic region. The five geographic regions used were Africa, East Asia/Pacific Islands, Europe, Northeast and South Central Asia, and Western Hemisphere. Within each stratum, individuals were selected with equal probability without replacement. However, because the allocation of the sample was not proportional to the size of strata, selection probabilities varied among strata, and individuals were not selected with equal probability overall. Nonproportional allocation was used to achieve adequate sample sizes for relatively small subpopulations of analytic interest (i.e., geographic region).

### Differences in Weighting of Survey Estimates

The 2008 surveys used sophisticated weighting procedures for the active-duty, Reserve component, and federal employees overseas. Results for the 2008 surveys were weighted to dampen potential biasing from nonlocation and nonresponse by using the industry standard three-stage process. This form of weighting produces survey estimates of population totals, proportions, and means (as well as other statistics) that are representative of their respective populations. The three-stage process of weighting consists of the following steps:

- *Adjustment for selection probability*—Probability samples, such as the sample for this survey, are selected from lists, and each member of the list has a known nonzero probability of selection. For example, if a list contained 10,000 members in a demographic subgroup and the desired sample size for the subgroup was 1,000, one in every tenth member of the list would be selected. During weighting, this selection probability (1/10) is taken into account. The base, or first weight, used to adjust the sample is the reciprocal of the selection probability. In this example, the adjustment for selection probability (base weight) is 10 for members of this subgroup.
- *Adjustments for nonresponse*—Some sampled members do not respond to the survey. Continuing the previous example, suppose only half of sample members (i.e., 500 out of 1,000) completed and returned a survey. Because the unweighted sample size would only be 500, weights are needed to project the sample up to the subgroup population total (10,000). In this case, the base-weighted respondents would sum to only 5,000 weighted respondents. To adjust for nonresponse, the base weights are multiplied by the reciprocal

<sup>4</sup> Other federal agencies were included in the sample only if there were 20 or more overseas employees.

of the nonresponse rate. In this example, the base weight (10) is multiplied by the reciprocal of the nonresponse rate (2) to create a new weight of 20. The weighted sample sums to the subgroup population total of 10,000.

- *Adjustment to known population values*—The first of the two previous weighting adjustments are applied according to the demographic groupings used in designing the subgroups for the sample. The second is based on population characteristics that are known to be related to whether a sample person responds to the survey. Because the sample design and adjustments for nonresponse cannot take into account all demographic differences related to who responds to a survey and how they respond, auxiliary information is used to increase the precision of survey estimates. For this reason, a final weighting adjustment is computed that reproduces population totals for important demographic groupings related to who responds to a survey and how they might answer the survey. Suppose in our example the population for the subgroup was 8,500 men and 1,500 women but the nonresponse-adjusted weighted estimates from the respondents was 7,000 men and 3,000 women. To reduce this possible bias and reproduce known population totals, the weights would be adjusted by 1.21 for men and 0.5 for women so that the final weights for men and women would be 24.3 and 10 which would give unbiased estimates of the total and of women and men in the subgroup.

In contrast, the 2004 survey of civilians employees overseas included only DOD employees overseas and was not weighted. Thus, the percentages reported are percentages of respondents and may not reflect population estimates. The unweighted response rate taking into account location and completion was 16.7%.

The 2008 survey of civilians employees overseas was weighted to account for unequal probabilities of selection that reflected the populations in the three segments within the geographic regions. The weighted response rate taking into account location and completion was 21.3%.

The 2004 survey of Uniformed Service Members applied a direct adjustment to the number of respondents by combining elements of steps 1 and 2. Thus the percent of respondents in each of the 20 sampling cells received a weight to adjust the cell percent to be the percent that cell represents in the population. For example, Army enlisted overseas were 20.6% of the population but 1.9% of the respondents. A weight of 10.73 was calculated by dividing 20.6 by 1.92. Each of the 50 respondents were weighted by this factor to represent 537 in the respondents. The total number of respondents was kept constant at about 2606 in order to control for inflating apparent precision by increasing the number of respondents. This approach ignored eligibility issues, variance problems from nonproportional sampling, and population characteristics that are known to be related to whether a sample person responds to the survey. The unweighted response rate taking into account location and completion was 17.8%.

The 2008 survey of Uniformed Service Members was weighted to account for unequal probabilities of selection and varying response rates among population subgroups. The adjusted weights were poststratified to match the population totals and to reduce bias unaccounted for by the first two stages of the weighting process. The weighted response rate for active Uniformed members was 31.9% and for Reserve Uniformed members was 29.1%.

### References

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