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2010 Post-Election Voting Survey of Department of State Voting Assistance Officers

Statistical Methodology Report

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**2010 POST-ELECTION VOTING SURVEY OF
DEPARTMENT OF STATE VOTING ASSISTANCE
OFFICERS:
STATISTICAL METHODOLOGY REPORT**

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Human Resources Strategic Assessment Program
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Acknowledgments

Defense Manpower Data Center (DMDC) is indebted to numerous people for their assistance with the *2010 Post-Election Survey of Department of State Voting Assistance Officers (2010 PEV6)*, which was conducted on behalf of the Office of the Under Secretary of Defense for Personnel and Readiness (OUSD [P&R]). The survey program is conducted under the leadership of Timothy Elig, Director, *Human Resources Strategic Assessment Program (HRSAP)*.

Policy officials from the Federal Voting Assistance Program (FVAP) contributed to the development of this survey include Bob Carey, Director, Paul Drugan, Deputy Director for Research, and Alan White, Survey Specialist.

DMDC's Personnel Survey Branch, under the guidance of David McGrath, Branch Chief, is responsible for sampling and weighting methods used in the survey program. The lead statistician on this survey was Dorothy Kester Jackman, SRA International, Inc., supervised by Eric Falk, DMDC and Fawzi Al Nassir, SRA International, Inc.

2010 POST-ELECTION VOTING SURVEY OF DEPARTMENT OF STATE VOTING ASSISTANCE OFFICERS: STATISTICAL METHODOLOGY REPORT

Executive Summary

The Uniformed and Overseas Citizens Absentee Voting Act of 1986 (UOCAVA), 42 USC 1973ff, and the Military and Overseas Voter Empowerment (MOVE) Act, a subtitle of the National Defense Authorization Act for Fiscal Year 2010, permits members of the Uniformed Services and Merchant Marine, and their eligible family members and all citizens residing outside the United States who are absent from the United States and its territories to vote in the general election for federal offices. These groups include:

- Members of the Uniformed Services (including Army, Navy, Air Force, Marine Corps, Coast Guard)
- U.S. citizens employed by the Federal Government residing outside the U.S.
- All other private U.S. citizens residing outside the U.S.

The Federal Voting Assistance Program (FVAP), under the guidance of USD (P&R), is charged with implementing and evaluating the effectiveness of UOCAVA and MOVE laws' programs. The FVAP office asked DMDC to design, administer, and analyze post-election surveys on Uniformed Services voter participation, overseas nonmilitary voter participation, and local election officials. Without such surveys, the Department will not be able to assess and improve voter access. In addition, such surveys fulfill 1988 Executive Order 12642 that names the Secretary of Defense as the "Presidential designee" for administering the UOCAVA and requires surveys to evaluate the effectiveness of the program in presidential election years.

The objectives of the 2010 post-election surveys are: (1) to gauge participation in the electoral process by citizens covered by UOCAVA, (2) to assess the impact of the FVAP's efforts to simplify and ease the process of voting absentee, (3) to evaluate other progress made to facilitate voting participation, and (4) to identify any remaining obstacles to voting by these citizens. Surveys were done of military members, spouses of military members, U.S. citizens overseas, voting assistance personnel, and local election officials in the U.S.

This report focuses on the 2010 Post-Election Voting Survey of Department of State Voting Assistance Officers (*2010 PEV6*), which was designed to capture the attitudes and behaviors of Department of State Voting Assistance Officers assigned to Department of State Voting Assistance Officers (DoSVAOs) throughout the world. This report describes the sampling and weighting methodologies used in the *2010 PEV6*. Calculation of response rates is described in the final section.

The *2010 PEV6* was a census of all the posts where Department of State Voting Assistance Officers are assigned to U.S. embassies and consulates throughout the world. The total population size was 238 Department of State Voting Assistance Officers. The survey

administration period lasted from November 22, 2010 to February 2, 2011. There were 213 usable questionnaires.

After the determination of eligibility for the survey and completion of a survey, analytic weights were created to account for varying response rates among population subgroups. First, the sampling weights (the inverse of the selection probabilities) were computed. Since the *2010 PEV6* was a census, the initial weight equals 1.0. Second, the base weights were adjusted to account for survey nonresponse.

Location, completion, and response rates are provided in the final section of this report for both the full sample and for population subgroups. These rates were computed according to the recommendations of the Council of American Survey Research Organizations (CASRO, 1982) and the American Association for Public Opinion Research (AAPOR, 2008). The location, completion, and response rates were 100%, 90%, and 90%.

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2010 POST-ELECTION VOTING SURVEY OF DEPARTMENT OF STATE VOTING ASSISTANCE OFFICERS: STATISTICAL METHODOLOGY REPORT

Introduction

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This report describes sampling and weighting methodologies for the *2010 Post-Election Voting Survey of Department of State Voting Assistance Officers (2010 PEV6)*. The first section describes the design and selection of the sample. The second section describes weighting and variance estimation. The final section describes the calculation of response rates, location rates, and completion rates for the full sample and for population subgroups. The design for this survey was based originally on the 2004 Department of State Voting Assistance Officer (DoSVAO) survey and *2008 Post-Election Voting Survey of Department of State Voting Assistance Officers*. Tabulated results of the survey are reported by DMDC (2011).

Sample Design and Selection

Target Population

The 2010 PEV6 was a census of all the posts where Department of State Voting Assistance Officers are assigned to U.S. embassies and consulates throughout the world. The total population size was 238 Department of State Voting Assistance Officers.

Sampling Frame

Since the 2010 PEV6 is more precisely a survey of an office or activity and several persons at an embassy or consulate can be assigned VAO duties, it was important to have the survey completed by the most appropriate person. In consultation with the Department of State (DoS), it was decided that this would most often be the senior American VAO. Therefore, materials were directed to the senior VAO at each embassy or consulate.

It was also realized that, at the time of the survey, the senior VAO could be new to the post and not aware of VAO activities before the presidential election. Therefore, in communications with the Department of State Voting Assistance Officers, the primary sampling unit, at the 238 embassies and consulates world-wide, DoS e-mails and other communications, while directed toward the senior VAO, made clear that the most experienced and appropriate person should collaborate in the completion of the survey. Table 1 shows the distribution of Department of State Voting Assistance Officers by geographic region.

Sample Design

The 2010 PEV6 was a census of all Department of State Voting Assistance Officers at DoS embassies and consulates throughout the world. One population characteristic defined the population, region, and is defined in Table 1.

Table 1.
Department of State Voting Assistance Officers by Region

| Region | Count | Percent (%) |
|----------------------------------|--------------|--------------------|
| Total | 238 | 100.0 |
| Africa | 46 | 19.3 |
| East Asia/Pacific | 41 | 17.2 |
| Europe | 61 | 25.6 |
| Near East/South and Central Asia | 41 | 17.2 |
| Western Hemisphere | 49 | 20.6 |

Weighting

Analytical weights for the 2010 PEV6 were created to account for varying response rates among population subgroups presented in Table 1. Base sampling weights were computed as the inverse of the selection probabilities and then adjusted for nonresponse. Since the 2010 PEV6 was a census, the initial weight is 1.0.

Case Dispositions

First, case dispositions were assigned for weighting based on eligibility for the survey and completion of the return (Table 2). Execution of the weighting process and computation of response rates both depend on this classification.

Final case dispositions for weighting were determined using information from the Survey Control System and returned surveys. Final case dispositions for the 2010 PEV6 are shown in Table 3.

Table 2.
Case Dispositions for Weighting

| Case Disposition (Samp_DC) | Information Source | Conditions |
|--|---|--|
| 1 Record ineligible | Personnel record | Sample ineligible – deceased or no address available. |
| 2 Ineligible by self- or proxy-report | Survey Control System (SCS) | "Person who was Department of State Voting Assistance Officer on November 2, 2010 is no longer available." |
| 3 Ineligible by survey self- report | First survey question | "Not a Department of State Voting Assistance Officer on November 2, 2010." |
| 4 Eligible, complete response | Item response rate | Item response is at least 50%. |
| 5 Eligible, incomplete response | Item response rate | Survey isn't blank but item response is less than 50%. |
| 6 Unknown eligibility, complete response | Personnel record, first survey question, item response rate | Incomplete personnel record and first survey item is missing and item response is at least 50%; |
| 7 Unknown eligibility, incomplete response | Personnel record, first survey question, and item response rate | Incomplete personnel record AND first survey question is missing AND return is not blank AND item response is less than 50%; |
| 8 Active refusal | SCS | Reason refused is any Reason ineligible is "other" Reason survey is blank is "refused-too long", "refused-inappropriate/intrusive", "refused-other", "ineligible-other", "unreachable at this address", "refused by current resident", "concerned about security/confidentiality." |
| 9 Blank return | SCS | No reason given. |
| 10 PND | SCS | Postal non-deliverable or original non-locatable. |
| 11 Non-respondent | Remainder | Remainder |

Table 3.
Sample Size by Case Disposition Categories

| Case Disposition Category and (Code Value) | Population Size |
|---|------------------------|
| Total | 238 |
| Record Ineligible (1) | 0 |
| Ineligible Response | |
| Self/Proxy-report (2) | 0 |
| Survey Self report (3) | 1 |
| Eligible Response | |
| Complete (4) | 213 |
| Incomplete (5) | 0 |
| Unknown Eligibility Response | |
| Complete (6) | 0 |
| Incomplete (7) | 0 |
| Refused/Deployed/Other (8) | 0 |
| Blank (9) | 10 |
| Postal Non-Delivery (10) | 0 |
| Non-respondents (11) | 14 |

Nonresponse Adjustments and Final Weights

After the determination of completion of a survey, analytic weights were created to account for varying response rates among population subgroups. The weighting of responses for 2010 PEV6 is straightforward. As the survey was a census, the base weight for all cases is 1.0. Since all DoSVAOs who held that position on November 2, 2010 are eligible, disposition codes are effectively limited to receiving a completed survey vs. did not receive a completed survey. The nonresponse adjustment was computed in weighting classes defined by geographic region. For example, the population count for Africa is 46 and the respondent count is 36, the adjustment for the Africa cell is $46/36$ or a final weight of 1.278. Table 4 presents the respondent counts and final weights for all geographic regions.

Table 4.

Department of State Voting Assistance Officers Respondent Counts and Final Weights by Region

| Region | Population | Respondents | Final Weight |
|----------------------------------|-------------------|--------------------|---------------------|
| Total | 238 | 214 | n/a |
| Africa | 46 | 36 | 1.278 |
| East Asia/Pacific | 41 | 38 | 1.079 |
| Europe | 61 | 60 | 1.017 |
| Near East/South and Central Asia | 41 | 34 | 1.206 |
| Western Hemisphere | 49 | 46 | 1.065 |

Variance Estimation

Analysis of the 2010 PEV6 data requires a variance estimation procedure that accounts for the weighting procedures. The final step of the weighting process was to define strata for variance estimation by Taylor series linearization. The 2010 PEV6 variance estimation strata correspond to the geographic regions. It was not necessary to collapse any strata since there were at least 25 cases with non-zero final weights in each stratum. Five variance estimation strata were defined for the 2010 PEV6.

Location, Completion, and Response Rates

Location, completion, and response rates were calculated in accordance with guidelines established by The Council of American Survey Research Organizations (CASRO). The procedure is based on recommendations for Sample Type II response rates (Council of American Survey Research Organizations, 1982). This definition corresponds to The American Association for Public Opinion Research (AAPOR) RR3 (AAPOR, 2008), which estimates the proportion of eligible cases among cases of unknown eligibility.

Location, completion, and response rates were computed for 2010 PEV6 as follows:

The location rate (LR) is defined as

$$LR = \frac{\text{adjusted located sample}}{\text{adjusted eligible sample}} = \frac{N_L}{N_E}.$$

The completion rate (CR) is defined as

$$CR = \frac{\text{usable responses}}{\text{adjusted located sample}} = \frac{N_R}{N_L}.$$

The response rate (RR) is defined as

$$RR = \frac{\text{usable responses}}{\text{adjusted eligible sample}} = \frac{N_R}{N_E}$$

where

- N_L = Adjusted located sample.
- N_E = Adjusted eligible sample.
- N_R = Usable responses.

To identify the cases that contribute to the components of LR, CR, and RR, the disposition codes were grouped as shown in Table 5

Table 5.
Disposition Codes for CASRO Response Rates

| Case Disposition Category | Code Value^a |
|----------------------------------|-------------------------------|
| Eligible Sample | 4, 5, 8, 9, 10, 11 |
| Located Sample | 4, 5, 8, 9, 11 |
| Eligible Response | 4 |
| No Return | 11 |
| Eligibility Determined | 2, 3, 4, 5, 8, 9 |
| Self-Report Ineligible | 2, 3 |

Ineligibility Rate

The ineligibility rate (IR) is defined as

$$IR = \frac{\text{self report ineligible cases}}{\text{eligible determined cases}}$$

Estimated Ineligible Postal Non-Deliverable/Not Located Rate

The estimated ineligible postal non-deliverable/not located rate (IPNDR) is defined as

$$IPNDR = (\text{Eligible Sample} - \text{Located Sample}) * IR.$$

Estimated Ineligible Nonresponse

The estimated ineligible nonresponse (EINR) is defined as

$$EINR = (\text{Not returned}) * IR.$$

Adjusted Location Rate

The adjusted location rate (ALR) is defined as

$$ALR = \frac{(\text{Located Sample} - EINR)}{(\text{Eligible Sample} - IPNDR - EINR)}.$$

Adjusted Completion Rate

The adjusted completion rate (ACR) is defined as

$$ACR = \frac{(\text{Eligible response})}{(\text{Located Sample} - EINR)}.$$

Adjusted Response Rate

The adjusted response rate (ARR) is defined as

$$ARR = \frac{(\text{Eligible response})}{(\text{Eligible Sample} - IPNDR - EINR)}.$$

Weighted location, completion, and response rates by region for 2010 PEV6 are shown in Table 6.

Table 6.
Rates for Full Sample and Stratification Levels

| Domain | Population Size | Usable Responses | Sum of Weights | Location Rate (%) | Completion Rate (%) | Response Rate (%) |
|--------------------|------------------------|-------------------------|-----------------------|--------------------------|----------------------------|--------------------------|
| Sample | 238 | 213 | 238 | 100.0 | 90.3 | 89.9 |
| Region | | | | | | |
| Africa | 46 | 35 | 46 | 100.0 | 80.0 | 78.3 |
| East Asia/Pacific | 41 | 38 | 41 | 100.0 | 92.7 | 92.7 |
| Europe | 61 | 60 | 61 | 100.0 | 98.4 | 98.4 |
| NE and SC Asia | 41 | 34 | 41 | 100.0 | 82.9 | 82.9 |
| Western Hemisphere | 49 | 46 | 49 | 100.0 | 93.9 | 93.9 |

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- American Association for Public Opinion Research. (2011). *Standard definitions: Final dispositions of case codes and outcome rates for surveys*. 7th edition, AAPOR.
- Council of American Survey Research Organizations. (1982). *On the definition of response rates* (special report of the CASRO task force on completion rates, Lester R Frankel, Chair). Port Jefferson, NY: Author.
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