



Defense Research, Surveys, and Statistics Center (RSSC)

2014 Post-Election Qualitative Voting Survey of Local Election Officials

Statistical Methodology Report



Additional copies of this report may be obtained from:

Defense Technical Information Center

ATTN: DTIC-BRR

8725 John J. Kingman Rd., Suite #0944

Ft. Belvoir, VA 22060-6218

Or from:

<http://www.dtic.mil/dtic/order.html>

Ask for report by Report ID

**2014 POST-ELECTION QUALITATIVE VOTING
SURVEY OF LOCAL ELECTION OFFICIALS:
STATISTICAL METHODOLOGY REPORT**

**Mr. Jeffrey Schneider, Dr. Fawzi Al Nassir, and Mr. David McGrath
DMDC/RSSC**

**Defense Manpower Data Center
Defense Research, Surveys, and Statistics Center
4800 Mark Center Drive, Suite 04E25-01, Alexandria, VA 22350-4000**

Acknowledgments

Defense Manpower Data Center (DMDC) is indebted to numerous people for their assistance with the *2014 Post-Election Qualitative Voting Survey of Local Election Officials (2014 PEVI)*, which was conducted on behalf of the Federal Voting Assistance Program (FVAP) within the Office of the Under Secretary of Defense for Personnel and Readiness (OUSD[P&R]). The survey program is conducted under the leadership of Paul Rosenfeld, Director of the *Defense Research, Surveys, and Statistics Center (RSSC)*.

Federal Voting Assistance Program (FVAP) staff and other FVAP stakeholders contributed to the development of this survey.

DMDC's Statistical Methods Branch, under the guidance of David McGrath, Branch Chief, is responsible for the sampling and weighting methods used by RSSC. The lead statistical analyst on this survey was Jeff Schneider, who designed the sample and developed weights for this survey and was supervised by Dr. Fawzi Al-Nassir, SRA International, Inc. Susan Reinhold provided programming assistance on this survey. Jeff Schneider and Dr. Fawzi Al-Nassir wrote this methodology report.

Table of Contents

	<u>Page</u>
Introduction.....	7
Sample Design and Selection.....	8
Weighting.....	10
Location, Completion, and Response Rates	13
References.....	17

List of Tables

1.	Variables for Stratification and All Reporting Domains	9
2.	Sample Size by Registered Voters, Jurisdiction Size and Type	9
3.	Sample Allocation by Stratification.....	10
4.	Allocation Solution for Reporting Domains	10
5.	Case Dispositions for Weighting	11
6.	Complete Eligible Respondents by Stratum	11
7.	Sum of Weights by Eligibility Status.....	12
8.	Disposition Codes for Response Rates	14
9.	Comparison of the Final Sample Relative to the Drawn Sample	15
10.	Location, Completion, and Response Rates	16
11.	Rates for Full Sample and Domain Level.....	16

2014 POST-ELECTION QUALITATIVE SURVEY OF LOCAL ELECTION OFFICIALS: STATISTICAL METHODOLOGY REPORT

Introduction

The Uniformed and Overseas Citizens Absentee Voting Act of 1986, Section 101.b (1), 42 USC §1973ff, now 52 U.S.C. 20310 (UOCAVA), 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., and
- 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 the UOCAVA and evaluating the effectiveness of its programs. The FVAP Office asked DMDC to design, administer, and analyze post-election surveys on Uniformed Services 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 2014 post-election surveys were:

- (1) to gauge participation in the electoral process by citizens covered by UOCAVA,
- (2) to assess the impact of 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.

In 2014, RSSC conducted five surveys of military members, voting assistance officers, and U.S. local election officials. This report describes sampling and weighting methodologies for the *2014 PEVI* which was designed to capture the attitudes and behaviors of Local Election Officials (LEOs). 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 location, completion, and response rates for the full sample and population subgroups. Tabulated results of the survey are reported in the *2014 Post-Election Qualitative Voting Survey of Local Election Officials: Tabulation Volume*, (DMDC 2015a), and information on survey

administration can be found in the *2014 Post-Election Qualitative Voting Survey of Local Election Officials: Administration, datasets, and codebook*, (DMDC 2015b).

Sample Design and Selection

Target Population

The *2014 Post-Election Qualitative Voting Survey of Local Election Officials (2014 PEVI)* was designed to represent all local election officials from the voting jurisdictions in the United States and the four territories. The 2014 survey was a sample of 1,500 of the 7,403 total jurisdictions compared with total jurisdictions of 7,303 local election officials in *2012 PEVI*.

Sampling Frame

The sampling unit for this study is the local election voting jurisdiction, which are counties for most states, but were defined differently from state to state. For example, the state of Alaska is considered to be one voting jurisdiction, whereas, Michigan, Wisconsin and most New England states define voting jurisdiction by individual townships. RSSC developed the sample frame based on a file provided by FVAP. In total there were 7,403 unique voting jurisdictions determined.

Sample Design

The *2014 PEVI* used a stratified sample design to select 1,500 jurisdictions. The population was grouped into six strata based on size. Because Michigan and Wisconsin have considerably more jurisdictions than other states due to the classification of towns and villages as jurisdictions, these states were classified in their own strata for smaller jurisdictions. The strata definitions are as follows:

- (1) Jurisdictions in Michigan and Wisconsin with fewer than 1,000 registered voters,
- (2) Jurisdictions in all other states with fewer than 1,000 registered voters,
- (3) Jurisdictions in Michigan and Wisconsin with 1,000-4,999 registered voters,
- (4) Jurisdictions in all other states with 1,000-4,999 registered voters,
- (5) Jurisdictions in all states with 5,000-25,000 registered voters, and
- (6) Jurisdictions in all states with more than 25,000 registered voters.

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 jurisdictions were not selected with equal probability overall. Non-proportional allocation was used to achieve adequate sample sizes for subpopulations of analytic interest; i.e., survey reporting domains. Stratifying variables and key reporting domain variables are shown in Table 1.

Sample Allocation

The total sample size was based on achieving precision requirements for key reporting domains. Anticipated eligibility and response rates were based on the *2012 Post-Election Qualitative Survey of Local Election Officials*.

Four domains were defined for *2014 PEVI*, where the goal was to achieve a reasonable precision for each of these domains. Generally, the precision requirement was that an estimated prevalence rate of 0.5 have a 95 percent confidence interval half-width no greater than 0.05. In addition, an attempt was made not to overburden LEOs within Michigan and Wisconsin.

The total *2014 PEVI* sample size was 1,500. Sample sizes are shown in Table 2 for the levels of the stratification dimensions. The sample allocation is shown in Table 3; the allocation solution for the reporting domains is shown in Table 4.

Table 1.
Variables for Stratification and Reporting Domains

Variable	Categories
Registered Voters*	Less than 1,000 registered voters 1,000-4,999 registered voters 5,000-25,000 registered voters More than 25,000 registered voters
State*	Michigan and Wisconsin All other states
Jurisdiction Size	Less than 5,000 registered voters 5,000+ registered voters
Jurisdiction Type	County ^a Sub-county

Note. * denotes stratification variable.
^aCounty describes all jurisdictions at the county level or higher, including territories and parishes.

Table 2.
Sample Size by Registered Voters, Jurisdiction Size and Type

Registered Voters	County	Sub-County	Total
Less than 5,000 Registered Voters	160	840	1,000
5,000+ Registered Voters	397	103	500
Total	557	943	1,500

Table 3.
Sample Allocation by Stratification

Stratum	Stratum Size	Expected Respondents	Sample Size	Percent Sampled
MI & WI, Fewer than 1,000 registered voters	2,393	210	350	15
All other states, fewer than 1,000 registered voters	302	90	150	50
MI & WI, 1,000-4,999 registered voters	772	150	250	32
All other states, 1,000-4,999 registered voters	820	150	250	30
All states, 5,000-25,000 registered voters	1,943	150	250	13
All states, more than 25,000 registered voters	1,173	150	250	21
Total	7,403	900	1,500	20

Table 4.
Allocation Solution for Reporting Domains

Domain	Population Count	Expected Responses	Sample Size	Percent Sampled
All Domains	7,403	900	1,500	20
Less than 5,000 Registered Voters	4,287	600	1,000	23
5,000+ Registered Voters	3,116	300	500	16
County	2,851	332	553	19
Sub-County	4,452	568	947	21

Weighting

Case Dispositions

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

Final case dispositions for weighting were determined using information from personnel records, field operations (the Survey Control System or SCS), and returned surveys. Final case disposition codes are shown in Table 5.

Table 5.
Case Dispositions for Weighting

Case Disposition (SAMP_DC)	Information Source	Conditions	Sample Size
3. Ineligible by survey self-report	Survey eligibility questions	LEO indicated “No UOCAVA voters”	281
4. Eligible, complete response	Item response rate	Item response is at least 50 percent.	675
5. Eligible, incomplete response	Item response rate	Survey isn’t blank but item response is less than 50 percent.	40
8. Active refusal	SCS	Refused for any reason.	65
9. Blank return	SCS	No reason given.	16
10. PND	SCS	Postal non-deliverable or original non-locatable.	3
11. Non-respondent	Remainder	Remainder	420
Total			1,500

^aThis standard RSSC disposition does not apply to this survey and only Case Dispositions that map to this survey are shown.

Eligible Completed Cases

The total number of eligible, complete cases for weighting is shown in Table 6. During the fielding of the survey there were 281 responding jurisdictions that did not complete the first survey question. Jurisdictions needed to respond that they had UOCAVA voters to be considered eligible. Note that this eligibility criterion is different from the prior iteration of the survey (2012PEVI), where jurisdictions needed to respond that they had UOCAVA voters as well as answered “Yes”, their jurisdiction used FVAP services. Sample members that did not respond to these questions were considered as having unknown eligibility and classified as nonrespondents.

Table 6.
Complete Eligible Respondents by Stratum

Stratum	Complete Eligible Respondents
Michigan and Wisconsin, fewer than 1,000 registered voters	63
All other states, fewer than 1,000 registered voters	44
Michigan and Wisconsin, 1,000-4,999 registered voters	124
All other states, 1,000-4,999 registered voters	126
All states, 5,000-25,000 registered voters	144
All states, more than 25,000 registered voters	174
Total	675

Nonresponse Adjustments and Final Weights

After case dispositions were resolved, the sampling weights defined as the inverse of selection probability were adjusted for nonresponse. The sample weights were adjusted for nonresponse in two steps within six stratification cells:

- Step 1: Adjust weights for nonresponse as follows:
 - Transfer the weight of the 504 nonrespondents from the last four rows of Table 5 to the survey respondents (both complete and incompletes). To create the adjustment factor, RSSC formed a ratio of the frame count divided by the survey respondents (both complete and incompletes) within each cell.
- Step 2: Adjust weights for survey completion as follows:
 - Transfer the weight of the 40 incomplete survey responses to the 675 complete-eligible respondents (see Table 5 for counts).
 - To create the completion adjustment factor, RSSC formed a ratio of the complete eligible respondents (both complete and incompletes) divided by the complete respondents within each cell.
 - RSSC calculated the final weight as the product of adjustment factors (ratios) in Steps 1 and 2.

Distribution of Weights and Adjustment Factors: Table 7 provides a summary of the distributions of the sampling weights, intermediate weights and final weights by eligibility status. Eligible respondents are those individuals who were not only eligible to participate in the survey, but also completed at least 50 percent of the survey items. There were no record ineligible cases according to administrative records.

Table 7.
Sum of Weights by Eligibility Status

Eligibility Category	Sum of Sampling Weights	Sum of Eligibility Status Adjusted Weights	Sum of Complete Eligible Response Adjusted Weights
Eligible Weighted	3,251	4,864	5,144
Ineligible Weighted	1,281	2,259	2,259
Eligible Unweighted	2,871	280	0
Record Ineligible Unweighted	0	0	0
Total	7,403	7,403	7,403

Variance Estimation

Analysis of the 2014 PEVI data required a variance estimation procedure that accounted for the complex sample design. The final step of the weighting process was to define variance strata for variance estimation by Taylor series linearization. The 2014 PEVI survey variance estimation strata were defined identically to the sampling strata.

Location, Completion, and Response Rates

Location, completion, and response rates were calculated in accordance with the recommendations of the American Association for Public Opinion Research (AAPOR, 2011 Standard Definitions), which estimates the proportion of eligible respondents among cases of unknown eligibility.

The *location rate* (LR) uses AAPOR standard formula CON2 and is defined as

$$LR = \frac{(I + P) + R}{(I + P) + R + NC + e(UO)} = \frac{\text{adjusted located sample}}{\text{adjusted eligible sample}} = \frac{N_L}{N_E}.$$

The *completion rate* (CR) uses AAPOR standard formula COMR and is defined as

$$CR = \frac{(I + P)}{(I + P) + (R + NC)} = \frac{\text{usable responses}}{\text{adjusted located sample}} = \frac{N_R}{N_L}.$$

The *response rate* (RR) uses AAPOR standard formula RR4 and is defined as

$$RR = \frac{(I + P)}{(I + P) + (R + NC + O) + e(UO)} = \frac{\text{usable responses}}{\text{adjusted eligible sample}} = \frac{N_R}{N_E}.$$

Where

- I = Fully complete responses according to RR4 (> 80 percent complete)
- P = Partially complete responses according to RR4 (50 – 80 percent complete)
- R = Refusal and break-off according to RR4 (< 50 percent complete)
- NC = Non-contact
- $e(UO)$ = Estimated eligibility of cases unknown
- N_L = Adjusted located sample
- N_E = Adjusted eligible sample
- N_R = Usable responses

To identify cases that contribute to the components of LR, CR, and RR, the disposition codes were grouped as shown in Table 8.

Table 8.
Disposition Codes for Response Rates

Response Category	SAMP_DC Values
Eligible Sample	4, 5, 8, 9, 10, 11
Located Sample	4, 5, 8, 9, 11
Usable Response	4
Not Returned	11
Eligibility Determined Cases	3, 4, 5, 8, 9
Self Report Ineligible Cases	3

^a Only Case Dispositions that apply to this survey are shown.

Ineligibility Rate

The ineligibility rate (IR) is defined as:

$$IR = \text{Self Report Ineligible} / \text{Eligibility Determined}.$$

The IR equation is calculated for both weighted and unweighted response rates.

Estimated Ineligible Postal Non-Deliverable/Not Located Rate

The estimated ineligible postal non-deliverable or not located (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:

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

Adjusted Completion Rate

The adjusted completion rate (ACR) is defined as:

$$ACR = (\text{Eligible Response}) / (\text{Located Sample} - \text{EINR}).$$

Adjusted Response Rate

The adjusted response rate (ARR) is defined as:

$$\text{ARR} = (\text{Eligible Response}) / (\text{Eligible Sample} - \text{IPNDR} - \text{EINR}).$$

Unweighted and weighted sample counts used to compute the overall response rates are shown in Table 9. Weighted rates were computed using the original base weights.

The final response rate is the product of the location rate and the completion rate. Both weighted and unweighted location, completion, and response rates for the 2014 PEVI survey are shown in Table 10.

Weighted location, completion, and response rates for the full sample by domain levels are shown in Table 11.

Table 9.
Comparison of the Final Sample Relative to the Drawn Sample

Case Disposition Categories	Sample Counts		Weighted Estimates ¹	
	n	Percent	n	Percent
Drawn sample & Population	1,500		7,403	
Ineligible on population files	0	0	0	0
Self-reported ineligible	-281	19	-1,281	17.3
Total: Ineligible	-281	19	-1,281	17.3
Eligible sample	1,219	81	6,122	82.7
Not located (estimated ineligible)	-1	0.05	-5	0.06
Not located (estimated eligible)	-2	0.15	-14	0.19
Total not located	-3	0.20	-19	0.25
Located sample	1,216	81.1	6,104	82.5
Refused, requested removal from survey mailings	-65	4.3	-332	4.5
Returned blank	-16	1.1	-82	1.1
Skipped key questions	-40	2.7	-190	2.6
Did not return a survey (estimated ineligible) ²	-110	7.3	-561	7.6
Did not return a survey (estimated eligible) ²	-310	20.7	-1,688	22.8
Total: Nonresponse	-541	36.1	-2,853	38.5
Usable responses	675	45	3,251	43.9

¹ The observed counts of the various response categories are somewhat skewed by the oversampling employed in the sample design. Consequently, weighted counts are also provided because they are more representative of response propensity in the entire population.

² The categories labeled 'Not located . . .' and 'Did not return a survey . . .' have been broken down into additional subcategories labeled '(estimated ineligible)' and '(estimated eligible)'. The ineligible counts are based on an ineligible rate = Self-report ineligibles / (Eligible Respondents + Unusable responses + Self-reported ineligibles). Unusable responses include sample members who requested removal, returned blank surveys, or skipped key questions. The eligible counts are the complement of the ineligible count.

Table 10.
Location, Completion, and Response Rates

Type of Rate	Computation	Unweighted Rate	Weighted Rate
Location	Adjusted located sample/Adjusted eligible sample	99.8	99.8
Completion	Usable responses/Adjusted located sample	61.0	58.7
Response	Usable responses/Adjusted eligible sample	60.9	58.5

Table 11.
Rates for Full Sample and Domain Level

Domain Variable	Domain	Sample	Usable Responses	Sum of Weights	Location Percent	Completion Percent	Response Percent
Sample	Sample	1,500	675	7,403	99.8	58.7	58.5
Jurisdiction Size	Less than 5,000 Registered Voters	1,000	357	4,287	99.7	52.6	52.4
	5,000+ Registered Voters	500	318	3,116	99.9	65.7	65.6
Jurisdiction Type	County	555	319	2,920	99.6	54.2	54.0
	Sub-County	945	356	4,483	100	64.5	64.5

References

- American Association for Public Opinion Research. (2011). *Standard definitions: Final dispositions of case codes and outcome rates for surveys (7th edition)*. AAPOR.
- DMDC. (2015a). *2014 Post-Election Qualitative Voting Survey of Local Election Officials: Tabulations of responses* (Report No. 2015-001). Alexandria, VA: Author.
- DMDC. (2015b). *2014 Post-Election Qualitative Voting Survey of Local Election Officials: Administration, datasets, and codebook* (Report No. 2015-003). Alexandria, VA: Author.

This page is reserved for insertion of Standard Form 298, page 1 -- this is best accomplished by replacing this page after the document has been converted to PDF



**Defense Research, Surveys,
and Statistics Center (RSSC)**

