2016

Federal Employee Viewpoint Survey

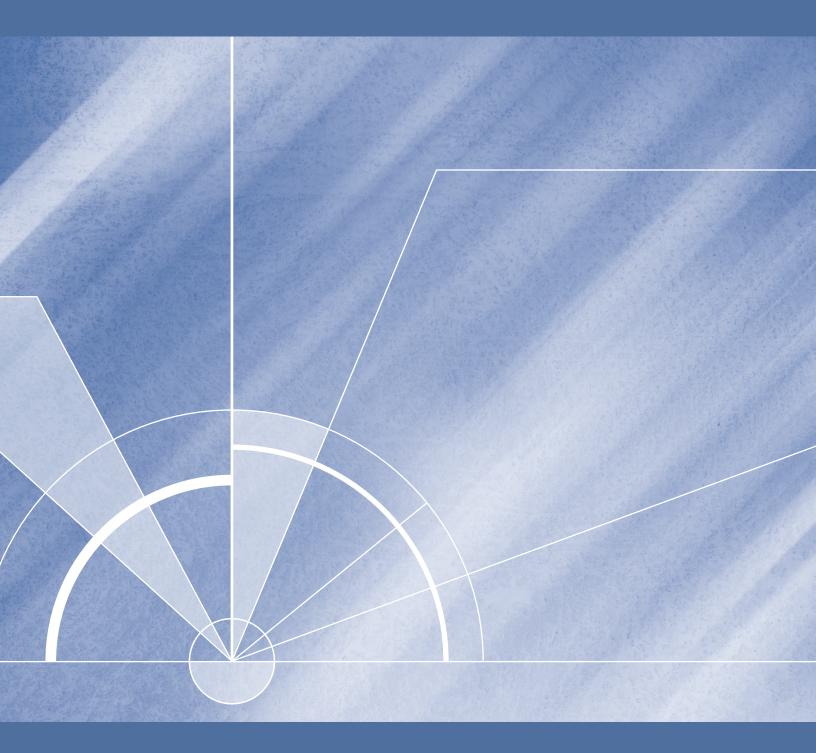*Empowering Employees. Inspiring Change.*

Technical Report

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Survey Introduction

Overview

This report provides a description of the sample design, administration, analysis, and reporting procedures for the 2016 Federal Employee Viewpoint Survey (FEVS). The U.S. Office of Personnel Management (OPM) has conducted the FEVS since 2002[1]. The survey was conducted biennially between 2002 and 2010, and annually thereafter. Westat has supported the survey since 2004.

The FEVS is a climate survey. Responses to the survey capture Federal employees' perceptions of organizational policies, practices, and procedures, and subsequent patterns of interactions and behaviors that support organizational performance. Climate is a construct and has been described as a surface manifestation of organizational culture[2]. Climate assessments like the FEVS are, consequently, important to organizational improvement largely because of the key role culture plays in directing organizational performance.

The FEVS is designed to provide agencies with employee feedback on dimensions critical to organizational performance: conditions for engagement, perceptions of leadership organizational effectiveness, outcomes related to climate (e.g., job satisfaction) and more. The 98-item survey covers the following eight topic areas:

- Personal Work Experiences,
- Work Unit,
- Agency,
- Supervisor,
- Leadership,
- Satisfaction,
- Work/Life, and
- Demographics.

The sample design for the FEVS ensures that the resulting estimates of perceptions are statistically reliable not only at the overall Federal workforce (i.e., governmentwide) level but also at the level of pre-identified work units and senior leader status (i.e., whether a member of the Senior Executive Service (SES) or equivalent).

Uses of Survey Results

The results from the survey can be used by agency leaders to assist in identifying areas in need of improvement as well as highlight important agency successes. FEVS findings allow agencies and subagencies to assess trends by comparing earlier results with the 2016 results, to compare agency results with the governmentwide results, to identify current strengths and challenges, and to focus on short-term and long-term action targets that will help agencies reach their strategic human resource management goals. The recommended approach to assessing and driving change in agencies utilizes FEVS results in conjunction with other resources, such as results from other internal surveys, administrative data, focus groups, exit interviews and so on.

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1 Prior to 2010, the survey was called the Federal Human Capital Survey (FHCS).
2 Schneider, B. (1990). The climate for service: an application of the climate construct. In B. Schneider (Ed.),Organizational climate and culture (pp. 383–412). San Francisco, CA: Jossey-Bass.

Sample Design and Selection

Sample Design

The sample design reflects OPM's commitment to providing Federal agency leaders with representative information about their employees' perceptions of workplace management practices, policies, and procedures. The survey population for the 2016 FEVS included permanently employed, non-political, non-seasonal, full- and part-time Federal employees who were employed and in pay status as of October 2015. The 2016 sample included 37 departments and large agencies as well as 45 small and independent agencies.

OPM used a probability sample based on a Graduated Proportional Sampling (GPS) plan to sample employees, and has used this method since 2013. The broad objective of this GPS sampling approach was to maintain the reporting breadth achieved by the 2012 FEVS census, but with a reduced burden in terms of the time and financial costs a census incurs. The following steps were performed to select a sample for a particular agency using the GPS plan:

1. Stratified individuals based on the lowest desired work unit or "level" identified by the agency.

2. Identified strata with less than 10 individuals and rolled these up into the next-highest applicable stratum. This rolling up was performed because even if a 100% response rate were achieved, a work unit less than 10 would be too small to receive a report. If there was no applicable higher level within the agency structure, the stratum was left as is.

3. As individuals in senior leader positions (e.g., SES or equivalent) constitute a rare subgroup of analytic interest, they were placed into a separate stratum to ensure they were sufficiently represented in the agency sample.

4. Once the final stratification boundaries were set, the sampling proportion was assigned based on the size of the stratum and the goal of attaining at least 10 respondents. We assumed a conservative 30% response rate. Exceptions to this rule were any strata in small agencies and the SES strata. These were always censused. As seen in Table 1, the minimum sampling proportion was 25%; thus, each employee had at least a one in four chance of being selected to participate.

5. After the necessary sample size was determined, the agency's ratio of employees to be sampled was examined. If more than 75% of the workforce was to be sampled, a census of the agency was conducted instead. In addition, if the determined sample was close to but less than 75%, OPM collaborated with the agency to decide whether a census should be conducted instead.

Table 1. 2016 FEVS Stratum Sampling Rate Schedule

Work Unit Population Size*	Treatment	Sample Size
<50	Census	1 to 50
51 to 75	75% Sample	38 to 56
76 to 150	50% Sample	38 to 75
>151	25% Sample	37+

*Note: Excluding SES employees.

The sampling rate, population, and sample counts of all agencies participating in the 2016 FEVS administration are given in Appendix A. The total sample size for the 2016 FEVS was 941,425 employees as compared to 903,060 in 2015 and 872,495 in 2014. The 2016 sample size was larger than previous years' samples' because a census was conducted in more agencies in 2016 than in previous years. The 2016 sample size was more than sufficient to ensure a 95 percent chance that the true population value would be between plus or minus 1 percent of any estimated percentage for the total Federal workforce.

Sampling Frame and Stratification Variables

The sampling frame is a comprehensive list of all persons in the survey population, those eligible to be selected for the survey. For the 2016 FEVS, the sampling frame was comprised of all 1,864,531 permanently employed, non-political, non-seasonal, full- and part-time Federal employees who were employed and in pay status as of October 2015 in the agencies participating in the survey. Apart from a few exceptions[3], this list was extracted from the personnel database managed by OPM as part of the Statistical Data Mart of the Enterprise Human Resources Integration (EHRI-SDM) (http://www.fedscope.opm.gov/datadefn/aehri_sdm.asp). OPM statisticians stratified the sampling frame prior to selecting a sample of Federal employees. OPM reached out to participating agencies for supplemental organization code information. This information indicated the hierarchical work unit(s) to which an employee was assigned and provided more detailed information than was available from the EHRI-SDM. Organization code information, when provided, along with information about whether an employee was a Senior Leader (SES employee), was used to create strata. The final sample consisted of 941,425 Federal employees.

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3   At the time of sample selection, EHRI-SDM did not maintain information on the following employee types eligible to participate in the survey, and so a separate data submission was arranged: (1) Department of State Foreign Service; (2) Health and Human Services Commissioned Corps; and (3) Employees of the Postal Regulatory Commission.

Survey Instrument

Survey Content

The FEVS instrument was designed to assess the climate of Federal agencies. Climate is exhibited through workplace tangibles such as behaviors and practices which employees can perceive and describe in response to survey items developed to describe aspects of climate. Like other organizational climate instruments, the Federal Employee Viewpoint Survey (FEVS) captures employee perspectives regarding workplace conditions. Research suggests that climate perceptions are associated with effectiveness related outcomes, such as turnover intentions, job satisfaction, and organizational performance[4].

The 2016 FEVS was administered completely via the Web and was 508 compliant. The 98-item survey included 14 demographic questions and 84 items that addressed the following eight topic areas (see Appendix B for a complete list of survey items):

- **Personal Work Experience:** Items 1–19 addressed employees' personal work experiences and opinions.

- **Work Unit:** Items 20–28 addressed employees' opinions regarding cooperation, recruitment, quality, and performance management in their work unit.

- **Agency:** Items 29–41 covered agency policies and practices related to job performance, performance appraisals, workplace diversity and fairness, as well as perceptions of employees' personal empowerment, safety and preparedness. This section also addresses employees' views of their agency.

- **Supervisor:** Items 42–52 addressed employees' perceptions of their supervisor. For instance, this section asked whether supervisors support work life balance, provide opportunities to demonstrate leadership skills, and promote a workplace culture that supports staff development.

- **Leadership:** Items 53–62 asked about the effectiveness of the agency's senior leaders and mangers overall, and in motivating employees, maintaining high ethical standards, communicating organizational policies, and generating respect.

- **Satisfaction:** Items 63-71 addressed employee satisfaction with various aspects of their jobs, including pay, job training, opportunities for advancement, recognition for work well done, and the policies and practices of senior leaders.

- **Work/Life:** Items 72–84 asked employees about teleworking and if they are satisfied with various employment benefits and work/life programs.

- **Demographics:** Items 85–98 covered employee information, such as location of employment (headquarters vs. field), supervisory status, gender, ethnicity/race, education, pay category/grade, Federal employment tenure, agency tenure, disability status, veteran status, and sexual orientation.

The 2016 FEVS items were the same as those in the 2014 and 2015 FEVS. In addition to the core survey items, 56 agencies opted to add extra items tailored specifically to issues of interest to the agency. Across all 56 agencies, these agency specific items added a total of 480 additional items.

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4 Patterson, M. G., West, M. A., Shackleton, V. J., Dawson, J. F., Lawthom, R., Maitlis, S., Robinson, D. L, & Wallace, A. M. (2005). Validating the organizational climate measure: links to managerial practices, productivity and innovation. *Journal of organizational behavior, 26*(4), 379-408

Data Collection

In this chapter we describe the data collection procedures OPM used to administer the Web-based survey. It includes details on the disposition codes used during data collection and those used for the calculation of response rates. This chapter concludes with a description of the procedures followed during the data collection period to address questions posed by employees invited to participate in the FEVS.

Web-Based Data Collection Procedures

The 2016 FEVS was a Web-based, self-administered survey. OPM sent emails to sampled employees with an invitation to participate in the survey. The invitation included instructions for accessing the survey (see Appendix C for sample email text). OPM also provided agencies with example survey communication materials that could be used to promote the survey and encourage participation. To improve response rates, OPM sent weekly reminder emails to non-respondents, including a final reminder sent in the morning of the final Friday of the data collection period indicating the survey would close at the end of the day.

The survey was expected to take no more than 30 minutes for the core survey items. The actual survey completion times varied from agency to agency depending upon the agency-specific items for that agency. Employees were allowed to complete the survey during official work hours.

Data Collection Period

The data collection period for the 2016 FEVS was April 26, 2016 to June 16, 2016. To spread the workload more evenly over that period, OPM arranged for surveys to be released in two waves to groups of agencies, beginning either April 26th or May 3rd (see Table 2). The data collection period for each agency spanned six work weeks.

Table 2. 2016 FEVS Survey Launch Date and Final Close-Out Date, by Agency

	Launch Date	Close Date
Department of Agriculture	April 27	June 16
Department of Commerce	May 3	June 14
Department of Defense		
Department of the Air Force	May 4	June 16
Department of the Army	April 26	June 16
U.S. Army Corps of Engineers	May 3	June 16
Department of the Navy	April 28	June 16
U.S. Marine Corps	May 5	June 16
DoD 4th Estate	April 27	June 16
Department of Education	May 4	June 15
Department of Energy	April 28	June 9

Table 2. 2016 FEVS Survey Launch Date and Final Close-Out Date, by Agency (continued)

	Launch Date	Close Date
Department of Health and Human Services	May 5	June 16
Department of Homeland Security	May 5	June 16
Department of Housing and Urban Development	May 3	June 14
Department of Justice	April 26	June 7
Department of Labor	April 28	June 9
Department of State	May 3	June 14
Department of the Interior	April 27	June 8
Department of the Treasury	April 26	June 7
Department of Transportation	April 27	June 8
Department of Veterans Affairs	May 4	June 15
Environmental Protection Agency	April 26	June 7
Farm Credit System Insurance Corporation	May 3	June 14
Federal Trade Commission	April 27	June 8
General Services Administration	April 26	June 7
National Aeronautics and Space Administration	May 5	June 16
National Archives and Records Administration	May 3	June 14
National Credit Union Administration	April 26	June 7
National Labor Relations Board	April 27	June 8
National Science Foundation	May 3	June 14
Nuclear Regulatory Commission	April 28	June 9
Office of Management and Budget	May 3	June 14
Office of Personnel Management	May 5	June 16
Railroad Retirement Board	April 28	June 9

	Launch Date	Close Date
Small Business Administration	April 28	June 9
Social Security Administration	May 5	June 16
U.S. Agency for International Development	April 28	June 9
Small/Independent Agencies	May 3	June 14

Survey Disposition Codes

During the data collection period, each case in the sample frame is assigned a status or disposition code to indicate the result of specific survey contact attempts (e.g., refusal, complete, ineligible). Two types of disposition codes were assigned to indicate the status of each case: interim disposition codes and final disposition codes.

Interim Disposition Codes

Throughout data collection, each case was assigned a numeric interim disposition code if the case was not yet considered closed. These are summarized in Table 3. Upon the close of data collection, a final disposition code was assigned to each case (see Table 4).

Table 3. 2016 FEVS Interim Disposition Codes

Interim code	Description of Interim Disposition Code
00	Pending, non-response
CO	Complete
IE	Ineligible (e.g., deceased, retired, no longer with agency)
Undeliverable	
11	1st Undeliverable
12	2nd Undeliverable
13	3rd Undeliverable
14	4th Undeliverable
15	5th Undeliverable
16	6th Undeliverable

Table 3. 2016 FEVS Interim Disposition Codes (continued)

Interim code	Description of Interim Disposition Code
17	7th Undeliverable
18	8th or More Undeliverable messages
20	No longer at email address, no forwarding information
NE	No email address
Out-of-office	
41	1st Out-of-office
42	2nd Out-of-office
43	3rd Out-of-office
44	4th Out-of-office
45	5th Out-of-office
46	6th Out-of-office
47	7th Out-of-office
48	8th Out-of-office
Other	
80	Refusal conversions
90	Request Reset URL
RF	Refusal
DU	Duplicate entry

During data collection, if the respondent's out-of-office email indicated that they were out of the office during the entire data collection period, they were given an interim disposition code of Unavailable (UA).

Converting Interim Codes to Final Disposition Codes

This section reviews the rules that were applied when converting interim disposition codes to final disposition codes.

Survey Completes and Incompletes.

All respondents who viewed the survey were considered an interim complete. However, to be considered a final complete (CO), a respondent had to provide at answers to at least 21 of the 84 non-demographic items. That is, they needed to complete at least 25% of the survey. If the respondent answered between 1 and 20 items of the 84 non-demographic items, the respondent was coded as an Incomplete (IN). If the respondent did not respond to any of the 84 items, they were coded as a no response (NR).

Once the respondents were coded into completes or incompletes, the following rules were applied to the survey population in hierarchical order:

- **Refusals.** Respondents who were initially coded as a Refusal Conversion and never completed the survey are considered a Refusal. On the other hand, respondents who were initially coded as a Refusal Conversion (code 80) but later completed the survey were considered a complete. While cases that were initially coded as a Refusal (code RF) remained so, even if they completed the survey.

- **Ineligibles.** Cases were coded as ineligible based on the following criteria; the person was discovered after sampling to be:
  - retired;
  - no longer with the agency as of April 30, 2016;
  - unavailable during the data collection period (UA) (i.e., out on maternity leave, out of the country, on leave for any other reason during the entire data collection period);
  - determined to be active duty, activated military, a political appointee, or a contractor; or
  - deceased.

Undeliverable Emails.

If a respondent had an undeliverable email bounce back, we counted the number of undeliverable messages received and this number provided the interim undeliverable code of 11 through 18 (i.e. 1 through 8 or more undeliverable messages). The following rule applied to determine the respondent's undeliverable (UD) status: if the total number of contacts with the respondent's agency equaled at least ½ the number of undeliverable bounce backs, then the respondent was considered UD. If less than ½ the number total contacts were undeliverable bounce backs, the case was designated as NR. For example, if OPM had 7 potential contacts (invitations or reminders), any OPM respondent with at least 4 (7 contacts divided by 2 = 3.5 rounded up) interim undeliverable emails (codes 14 through 18) would be coded as UD, otherwise they would be designated NR.

Final Disposition Codes

Table 4 lists the final disposition codes, with the number of cases per code, for the 2016 FEVS. The codes abide by the American Association of Public Opinion Research's (AAPOR) 2015 guidelines for Internet surveys of specifically named persons[5]. Final disposition codes were used when calculating survey response rates, survey analysis weights, and which cases should be included in the final analysis dataset. Only cases with a disposition code of complete (CO) were retained in the final analysis dataset. All other cases were removed.

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5   The American Association for Public Opinion Research. (2015). *Standard Definitions: Final Dispositions of Case Codes and Outcome Rates for Surveys.* (8th ed.) AAPOR. Retrieved June 12, 2017: https://www.aapor.org/AAPOR_Main/media/MainSiteFiles/Standard-Definitions2015_8thEd.pdf

Table 4. 2016 FEVS Final Disposition Codes and Case Count per Disposition Code

Final Disposition codes	Description	No. of cases
CO	**Complete** – respondent answered at least 21 of the first 84 non-demographic items	407,789
IN	**Incomplete** – respondent answered at least 1 but less than 21 of the first 84 non-demographic items	7,060
RF	Refusal	86
NR	No response	474,655
IE	Ineligible (e.g., deceased or no longer with agency)	25,068
NE	No email address	8,778
UA	Unavailable during the fielding period	444
UD	Undeliverable email	17,545
Total		**941,425**

Response Rates

Westat calculated response rates in two ways: 1) using the formula that has been used for reporting in previous administrations of the survey and 2) using AAPOR's Response Rate 3 formula, an industry-standard method that allows a more accurate comparison to other surveys as shown in Appendix D. The two formulas lead to different results due to differences in the allocations of final disposition codes among the four main groupings of survey cases:

- Eligible respondents (ER = surveyed and responded),
- Eligible non-respondents (ENR = known eligible cases that did not return completed surveys),
- Unknown eligibility (UNK), and
- Ineligible cases (IE).

The distributions of final disposition codes among these four groupings are summarized in Table 5.

The governmentwide and agency response rates, calculated using the FEVS formula, are presented in Table 6.

Table 5. Case Assignment Allocation to Response Rate Groups

Response Rate (RR) Group	FEVS Method Allocation	FEVS Method Counts
Eligible Respondents (ER)	CO	407,789
Eligible Non-respondents (ENR)	NR, RF, IN	481,801
Unknown Eligibility (UNK)	---	
Ineligible (IE)	IE, UD, NE, UA	51,835
Total		**941,425**

Using the counts in Table 5 the response rate is calculated and used in final reporting as follows:

FEVS formula:

Number of eligible employees returning completed surveys / Number of eligible employees:

$RR = ER / (ER + ENR) * 100$

$RR = 407,789/ (407,789+ 481,801) * 100$

$RR = (407,789/889,590)* 100$

RR = 45.8 percent (down from 49.7 percent in 2015)

Table 6. 2016 FEVS Agency Response Rates

	Number of Completed Surveys	Response Rate
Governmentwide	407,789	45.8%
Presidential Management Council Agencies		
Department of Agriculture	22,878	61.3%
Department of Commerce	9,784	51.6%
Department of Defense	58,630	26.1%
United States Department of the Air Force	15,586	22.9%
United States Department of the Army*	17,086	24.9%
United States Army Corps of Engineers	3,599	46.7%
United States Department of the Navy**	12,361	23.9%
United States Marine Corps	1,215	27.6%
OSD, Joint Staff, Defense Agencies, and Field Activities	13,597	37.2%
Department of Education	2,862	76.2%
Department of Energy	8,075	64.6%
Department of Health and Human Services	40,345	55.3%
Department of Homeland Security	46,991	50.1%
Department of Housing and Urban Development	5,464	77.0%
Department of Justice	16,501	37.3%
Department of Labor	11,262	74.6%
Department of State	5,256	48.3%
Department of Transportation	14,871	49.8%
Department of Veterans Affairs	30,313	34.1%
Department of the Interior	23,098	50.1%
Department of the Treasury	45,497	55.9%

* United States Department of the Army numbers include United States Army Corps of Engineers

** United States Department of the Navy numbers include United States Marine Corps

Table 6. 2016 FEVS Agency Response Rates (continued)

	Number of Completed Surveys	Response Rate
Governmentwide	407,789	45.8%
Presidential Management Council Agencies (continued)		
Environmental Protection Agency	10,156	72.3%
General Services Administration	7,081	67.3%
National Aeronautics and Space Administration	11,202	67.9%
National Science Foundation	854	74.1%
Office of Management and Budget	351	82.0%
Office of Personnel Management	3,196	68.0%
Small Business Administration	1,383	67.7%
Social Security Administration	8,907	49.0%
U.S. Agency for International Development	2,285	64.5%
Large Agencies		
Broadcasting Board of Governors	904	63.3%
Court Services and Offender Supervision Agency	618	54.9%
Equal Employment Opportunity Commission	1,510	70.2%
Federal Communications Commission	648	41.8%
Federal Energy Regulatory Commission	1,150	82.3%
Federal Trade Commission	641	60.9%
National Archives and Records Administration	1,870	69.0%
National Credit Union Administration	661	57.2%
National Labor Relations Board	882	58.9%
Nuclear Regulatory Commission	2,152	61.8%
Pension Benefit Guaranty Corporation	569	64.8%
Railroad Retirement Board	320	38.0%
Securities and Exchange Commission	3,213	76.2%

Table 6. 2016 FEVS Agency Response Rates (continued)

	Number of Completed Surveys	Response Rate
Governmentwide	407,789	45.8%
Small/Independent Agencies		
AbilityOne Commission	7	31.8%
African Development Foundation	23	76.7%
American Battle Monuments Commission	11	50.0%
Chemical Safety and Hazard Investigation Board	33	91.7%
Commission on Civil Rights	23	88.5%
Commodity Futures Trading Commission	505	73.0%
Consumer Product Safety Commission	317	64.7%
Corporation for National and Community Service	494	84.3%
Defense Nuclear Facilities Safety Board	81	84.4%
Export-Import Bank of the United States	231	62.4%
Farm Credit Administration	217	81.3%
Farm Credit System Insurance Corporation	8	80.0%
Federal Election Commission	155	51.3%
Federal Housing Finance Agency	364	68.4%
Federal Labor Relations Authority	98	83.1%
Federal Maritime Commission	80	70.8%
Federal Mediation and Conciliation Service	169	80.5%
Federal Retirement Thrift Investment Board	179	82.9%
Institute of Museum and Library Services	45	86.5%
Inter-American Foundation	29	90.6%
International Boundary and Water Commission	157	77.0%
Marine Mammal Commission	10	76.9%
Merit Systems Protection Board	141	70.5%

Table 6. 2016 FEVS Agency Response Rates (continued)

	Number of Completed Surveys	Response Rate
Governmentwide	407,789	45.8%
Small/Independent Agencies (continued)		
National Capital Planning Commission	23	74.2%
National Endowment for the Arts	53	48.6%
National Endowment for the Humanities	76	63.9%
National Gallery of Art	527	72.9%
National Indian Gaming Commission	67	71.3%
National Mediation Board	28	73.7%
National Transportation Safety Board	270	70.3%
Nuclear Waste Technical Review Board	4	33.3%
Occupational Safety and Health Review Commission	26	57.8%
Office of Navajo and Hopi Indian Relocation	24	72.7%
Office of the U.S. Trade Representative	98	53.3%
Overseas Private Investment Corporation	191	87.6%
Postal Regulatory Commission	50	83.3%
Selective Service System	67	67.7%
Surface Transportation Board	71	53.0%
U.S. Access Board	12	52.2%
U.S. International Trade Commission	272	85.0%
U.S. Office of Government Ethics	45	77.6%
U.S. Office of Special Counsel	102	91.9%
U.S. Trade and Development Agency	26	70.3%

Help Center

A Help Center was set up during the data collection of the FEVS to assist Federal employees with questions about the survey. Use of the center was intended to ensure that all inquiries were handled promptly, accurately, professionally, and in a consistent manner. Providing a Help Center also helps achieve higher response rates during data collection by allowing respondents to obtain answers to questions, voice concerns, ensure the legitimacy of the survey, and remedy any technical issues with the survey. The Help Center served as a central point for coordinating and managing reported problems and issues. Employees could email their questions/concerns or call a toll-free number to contact Help Center staff. Thirty-one email accounts were set up, one for each of the 29 large departments/agencies, one for the small/independent agencies, and one for the large independent agencies. Westat's Help Center staff included three trained team staff members, one Help Center Supervisor, and one assistant Help Center Supervisor; with all operations overseen by the Data Collection Task Manager.

The Help Center opened with the launch of the first survey invitation on April 26, 2016 and closed on the last day of the fielding period, June 16, 2016. Hours of operation were 8:30 a.m. to 5 p.m. Eastern Time, Monday through Friday. The Help Center was located at the Westat campus in Rockville, Maryland.

Staff Training

The Help Center Supervisor conducted a 2-hour staff training session prior to the launch of the survey. The training session included an introduction to the project, a review of the 2016 FEVS Contractor Answer Book prepared by OPM, a technical session on how to use the Web-based Help Center Application (see next section for details on this application), and procedures for handling emails and toll-free calls from employees. After the technical session, all trainees used test accounts and cases that were set up within the Web-based application to apply what they had learned in a set of example resolution exercises. The training session closed with questions from Help Center staff.

The formal 2-hour training was followed-up with one-on-one training sessions between the Help Center supervisor and the Help Center staff. One-on-one sessions further helped the Help Center staff understand eligibility requirements, refusal conversion techniques, and how to properly code dispositions. During the survey administration period, the Help Center supervisor frequently reviewed the survey support inboxes, Help Center staff workload, and replies to respondents to ensure responses were not only timely but appropriate.

Web-based Help Center Application

The Web-based Help Center Application or Survey Management System (SMS) is an application enabling Help Center staff to respond to emails, facilitate quick handling of respondent inquiries, and optimize technical assistance response times. The SMS managed email and phone inquiries from survey participants and provided other support functions such as tracking disposition codes, updating contact information, capturing real-time survey submissions, and generating response rate reports. The SMS was linked to the OPM survey platform enabling Help Center staff to unsubscribe employees who explicitly refused to take the survey or who were designated as ineligible so that these individuals did not continue to receive reminder notifications. The SMS also automatically received response data twice daily from the survey platform to keep response rate reporting as accurate and up-to-date as possible.

Response Rate Reporting Website

Since 2014, FEVS agency points of contact have been provided access to a Response Rate Reporting Website to view their agency's real-time survey completion rate information during the data collection period[6]. This website provided the following information: launch date of the survey, sample size, number of completed surveys (based on an interim disposition code), and the response rate to date. It also provided the final response rates for the previous two survey administrations as well as the response rate to date in the same period of survey data collection for the previous year.

Agency leaders could also drill down in their organization to see what subagencies within the organization might be driving lower response rates. Finally, the website provided a dashboard feature which allowed agencies to graphically see response rates over time and in comparison to governmentwide, the top 3 and bottom 3 subagencies, and the number of daily completes daily and the number of weekly completes and response rates with the option to show comparative data for the previous two years where applicable. (See Figure 1) This information was used by agency managers and executives to help monitor and promote participation in the FEVS.

Figure 1. Sample Views in FEVS Response Rate Website

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6   The completion rate differs from the response rate as it does not take into consideration ineligible respondents, and surveys submitted that do not completion criteria. It is the number of submitted surveys divided by the sample size.

Help Center Operational Procedures

This section details the Help Center operational procedures, as well as the volume and types of inquiries received.

Emails. Figure 2 illustrates the operational procedures for handling emails at the Help Center. When an email was received within the SMS, the Help Center Staff had the option to reply with an appropriate response from the FEVS Contractor Answer Book or forward to OPM for further assistance. The Help Center processed over 400,000 emails within the Help Center SMS across the 31 email accounts (see Table 7).

Of the 420,256 emails received by the Help Center, 267,989 were undeliverable notifications, 136,416 were automated out-of-office replies, and 8,053 were inquiries or comments from individuals. Of the 267,989 undeliverable notifications, 47,719 were from unique respondents. Of the 136,416 automated out-of-office replies, Westat staff worked through and programmatically processed 25,071 from unique respondents to gather information to help assign final disposition codes to cases during survey closeout. Information from these emails helped to code a small percentage of the cases as ineligible or unavailable during the data collection period. Help Center staff reviewed all inquiries and comments in the inbox and determined that 7,789 of the 8,054 emails required a response. The other 264 emails consisted of comments from users that did not require a response, such as letting the Help Center know that the respondent intended to complete the survey or thanking Help Center Staff for their assistance. Of the 7,789 emails that required a response, 157 (2.02 percent of the total) were sent to one of the following: the OPM Technical email box, OPM Content email box, for additional assistance.

Figure 2. 2016 FEVS Help Center Email Procedures

Table 7. Number of Emails Handled by Help Center and OPM, by Agency

	Inbox	Out of Office	Undeliverable	Sent Items	Total
		Folder			
Department of Agriculture	110	7,182	7,137	106	14,535
Department of Commerce	88	2,555	3,401	88	6,132
Department of Defense					
Department of the Air Force	133	1,686	18,289	137	20,245
Department of the Army	421	18,384	32,651	409	51,865
U.S. Army Corps of Engineers	24	17	979	36	1,056
Department of the Navy	217	16,763	29,649	219	46,848
U.S. Marine Corps	4	223	916	5	1,148
DoD 4th Estate	210	9,212	12,427	224	22,073
Department of Education	101	1,148	751	115	2,115
Department of Energy	179	2,565	2,254	218	5,216
Department of Health and Human Services	2,098	18,716	19,984	1,897	42,695
Department of Homeland Security	457	11,543	619	473	13,092
Department of Housing and Urban Development	323	2,105	2,385	291	5,104
Department of Justice	134	6,184	22,722	74	29,114
Department of Labor	445	2,810	2,223	413	5,891
Department of State	90	4,023	1,322	65	5,500
Department of the Interior	175	271	18,022	179	18,647
Department of the Treasury	473	6,411	19,943	478	27,305

Table 7. Number of Emails Handled by Help Center and OPM, by Agency (continued)

	Inbox	Out of Office	Undeliverable	Sent Items	Total
		Folder			
Department of Transportation	217	4,865	1,392	214	6,688
Department of Veterans Affairs	536	5,200	45,972	538	52,246
Environmental Protection Agency	191	2,931	3,368	181	6,671
General Services Administration	116	91	3,387	114	3,708
Large independent agencies	217	3,396	4,864	214	8,691
National Aeronautics and Space Administration	549	2,790	3,812	558	7,709
National Science Foundation	4	370	264	4	642
Office of Management and Budget	2	156	54	5	217
Office of Personnel Management	47	768	813	48	1,676
Small Business Administration	11	687	682	16	1,396
Social Security Administration	420	1,853	5,075	420	7,768
U.S. Agency for International Development	33	69	919	28	1,049
Small/Independent agencies	28	1,442	1,713	31	3,214
Totals	**8,053**	**136,416**	**267,989**	**7,798**	**420,256**

Toll-Free Calls. The Help Center staff also handled calls made to the survey's toll-free hotline by respondents with questions or comments about the survey. During the Help Center hours (8:30 a.m. to 5 p.m. Eastern Time, Monday through Friday), the majority of calls were answered as they came in by Help Center staff. A voicemail box was set up for calls received outside of regular Help Center hours and when Help Center staff were unable to answer the phone. All voicemail messages were returned within 1 business day. A total of 1,593 calls were received during the data collection period. A daily telephone log was maintained to record all incoming calls received.

Types of Inquiries Received. The types of inquiries received are listed below and demonstrate the frequently asked questions that the Help Center responded to through email and telephone. The Help Center Staff answered all inquiries using the appropriate response from the FEVS Contractor Answer Book, which consisted of 54 questions, which mostly fell into the following categories:

- Individuals reporting they were no longer Federal employees;
- Individuals verifying the survey was legitimate;
- Individuals who recently moved positions within the government;
- Individuals who had lost their survey URL;
- Individuals who had received a reminder from within their agency (not from OPM), who were not in the sample and so did not get a survey invitation and were wondering how to take the survey;
- Individuals with questions about confidentiality, particularly for members of small subgroups; and
- Individuals having difficulty accessing the survey.

Data Cleaning and Weighting

This chapter outlines the data cleaning and recoding performed on the analysis dataset as well as weighting of survey cases to represent the Federal employee population.

Data Cleaning and Recoding

Given that the FEVS is a Web-based survey, programs to inspect the data for various response errors or out of range values were built into the instrument; thus, data cleaning was a continuous operation throughout the data collection period. After data collection, the data cleaning and editing process involved assigning final disposition codes and recoding some of the variables for analysis purposes. Since 2012, the satisfaction with work/life program items (Q79-84) were recoded such that, if the respondent did not participate in the work/life program (based on responses to Q73-78), their responses to the satisfaction with that work/life program were set to missing. Other variables were recoded for reporting purposes, such as the race and ethnicity variables were recoded into a minority and non-minority variable.

Weighting

The process of weighting refers to the development of an analysis weight assigned to each respondent to the 2016 FEVS. The weights are necessary to achieve the survey objective of making unbiased inferences regarding the perceptions of the full population of Federal employees. Without the weights, two characteristics of the FEVS could result in biased population estimates. First, the 2016 FEVS was a census in some strata and a probability sample in other strata. Hence, an employee's probability of being invited to participate in the FEVS varied across agencies and agency subgroups. Because of the variable probabilities of selection across the subgroups, sample members in, say, subgroup A each represent X number of Federal employees, whereas sample members in subgroup B each represent Y number of employees. Weights are calculated to adjust for those differences.

Another survey characteristic that is a source of potential bias in the 2016 FEVS estimates is nonresponse. In an ideal scenario, all members of the survey sample receive the survey invitation and complete the survey. In actuality, however, some survey cases cannot be located (e.g., undeliverable emails) and others who receive the survey do not complete it. Undeliverable survey invitations as well as varying response rates across subgroups of employees were experienced during the 2016 FEVS. Analysis of data from the 2016 FEVS requires the use of weights to adjust not only for variable selection probabilities but also for survey nonresponse.

For the 2016 FEVS, final disposition codes and information from the sampling frame were used to develop the weights. The disposition codes were used to determine whether each employee returned a completed questionnaire or if information was obtained indicating the employee was ineligible to participate in the FEVS. Variables utilized from the sampling frame include the stratum identifier and a set of demographic variables known for both respondents and non-respondents[7].

Statisticians used a three-stage, industry-standard procedure to develop the full-sample weights. First, they calculated base weights for each sampled employee equaling the reciprocal of each individual's selection probability. Second, statisticians adjusted the base weights for nonresponse within agency subgroups. Those adjustments inflate the weights of survey respondents to represent all employees in the subgroup, including non-respondents and ineligible employees. Third, statisticians used a procedure known as raking to ensure weighted distributions matched known population distributions by gender, sub-agency, and minority status within agencies. This technique can increase the precision of survey estimates. Unless otherwise noted, the full-sample weights were used to compute all FEVS estimates the full-sample weights were also used to compute measures of precision by using Taylor linearization in all analyses, except for agency and governmentwide trend analyses. For these two types of analyses, the measures of precision were computed by using replicate weights, which were developed using the JKn method. See Appendix E for detailed information on the 2016 FEVS weighting processes and Appendix F for an illustration of the weight adjustment operation.

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7   The sampling-frame variables are obtained from administrative data in the EHRI-SDM database.

Data Analysis

This chapter outlines the statistical methodology used to analyze the 2016 FEVS survey responses received from all 407,789 respondents.

Frequency Distributions

As in prior administrations, the primary data analysis in 2016 included calculating governmentwide, agency, and subagency frequency distributions for each survey question. In addition, frequency distributions were calculated for various demographic groups and select work-related characteristics. All percentages and statistical analyses were based on weighted data unless noted otherwise.

Distributions of Positive, Negative, and Neutral Responses

Many of the FEVS item answer sets formed 5-point Likert-type response scales. Three such scales were used: (a) *Strongly Agree, Agree, Neither Agree nor Disagree, Disagree, Strongly Disagree*; (b) *Very Satisfied, Satisfied, Neither Satisfied nor Dissatisfied, Dissatisfied, Very Dissatisfied*; and (c) *Very Good, Good, Fair, Poor, Very Poor.*

Analysts collapsed the positive and negative response options to facilitate managers' use of the data. Analysts produced governmentwide, agency, subagency, and other subgroup estimates of the collapsed positive and negative responses. The proportion of positive, neutral, and negative responses are defined as follows:

- **Percent Positive:** the combined percentages of respondents who answered Strongly Agree or Agree; Very Satisfied or Satisfied; or Very Good or Good, depending on the item's response categories.

- **Percent Neutral:** the percentage of respondents choosing the middle response option in the 5-point scale (Neither Agree nor Disagree, Neither Satisfied nor Dissatisfied, Fair).

- **Percent Negative:** the combined percentages of respondents answering Strongly Disagree or Disagree; Very Dissatisfied or Dissatisfied; or Very Poor or Poor, depending on the item's response categories.

Do Not Know and No Basis to Judge Responses

For items 9-19, 21-27, 29-39, 41-47, 53-62, and 79-84 of the survey, respondents had the additional option of answering Do Not Know or No Basis to Judge. The responses Do Not Know or No Basis to Judge were not included in the calculation of response percentages for those items.

Missing Data

Any missing data, or items that were not answered by respondents, were not included in the calculation of response percentages for those items.

Testing for Statistically Significant Differences

Analysts tested for two types of statistically significant differences: differences between estimates for subgroups in 2016 and differences between estimates across survey administration years. The following sections describe these two types of analyses.

Subgroup Comparisons

Estimates for all percent positive responses were calculated at the governmentwide level for the following subgroups: age group, gender, race/ethnicity, disability status, previous military experience or veteran status, and workforce attributes (supervisor status and work location). Analysts calculated the standard errors for the collapsed percent positive estimates, which were then used to calculate Student's t statistics that test for significant differences between estimates for two comparison groups. The analysts performed statistical testing to identify statistically significant differences in responses across subgroups containing more than 30 respondents. To reduce the likelihood of incorrectly concluding that significant differences exist when there are multiple subgroup comparisons (such as supervisory status), analysts used SAS's Proc Multtest (the false discovery rate [FDR] method) to adjust the significance-test probability.

Trend Analyses

Trend analyses were conducted for 77 items that had percent positive calculations and that were included in at least two consecutive years of FEVS administration from 2010 to 2016. For each of these non-demographic items, analysts calculated the percent positive responses for each year and displayed whether there were statistically significant increases or decreases, or no statistically significant changes, in positive responses from year to year. These statistical testing results were based on t-test analyses between the two percent positive response estimates for each year when there were more than 30 respondents in both years.

Indices

Four sets of indices were reported on for the 2016 FEVS. These composite measures join specific observations in more general dimensions or constructs, and include: Employee Engagement Index, Global Satisfaction Index, the New Inclusion Quotient (New IQ) Index, and the Human Capital Assessment and Accountability Framework (HCAAF) Index. The next sections review each index in turn.

Engagement Index

The Employee Engagement Index is a measure of the conditions conducive to engagement. The index consists of 15 items grouped into three subindices: Leaders Lead, Supervisors, and Intrinsic Work Experience (see Table 8).

Subindex scores are calculated by averaging the unrounded percent positive of each of the items in the subindex. Averaging the three unrounded subindex scores creates the overall Employee Engagement score. Index and subindex scores were rounded for reporting purposes.

Table 8. Employee Engagement Index (15 items)

Engagement Index (3 Subindices)

Leaders Lead (5 items)

53. In my organization, senior leaders generate high levels of motivation and commitment in the workforce.

54. My organization's senior leaders maintain high standards of honesty and integrity.

56. Managers communicate the goals and priorities of the organization.

60. Overall, how good a job do you feel is being done by the manager directly above your immediate supervisor?

61. I have a high level of respect for my organization's senior leaders.

Supervisors (5 items)

47. Supervisors in my work unit support employee development.

48. My supervisor listens to what I have to say.

49. My supervisor treats me with respect.

51. I have trust and confidence in my supervisor.

52. Overall, how good a job do you feel is being done by your immediate supervisor?

Intrinsic Work Experience (5 items)

3. I feel encouraged to come up with new and better ways of doing things.

4. My work gives me a feeling of personal accomplishment.

6. I know what is expected of me on the job.

11. My talents are used well in the workplace.

12. I know how my work relates to the agency's goals and priorities.

Global Satisfaction Index

Global Satisfaction Index is a combination of four items assessing employees' satisfaction with their job, their pay, and their organization, plus their willingness to recommend their organization as a good place to work (see Table 9).

Overall Global Satisfaction Index scores are calculated by averaging the unrounded percent positive of each of the four items. Index scores were rounded for reporting purposes.

Table 9. Global Satisfaction Index (4 items)

Global Satisfaction (4 items)
40. I recommend my organization as a good place to work.
69. Considering everything, how satisfied are you with your job?
70. Considering everything, how satisfied are you with your pay?
71. Considering everything, how satisfied are you with your organization?

The New Inclusion Quotient (The New IQ) Index

The New IQ was built on the concept that individual behaviors, repeated over time, form the habits that create the essential building blocks of an inclusive environment. These behaviors can be learned, practiced, and developed into habits of inclusiveness and subsequently improve the inclusive intelligence of organizational members. Workplace inclusion is a contributing factor to employee engagement and organizational performance. The New IQ consists of 20 items that are related to inclusive environments (see Table 10). These 20 items are grouped into "5 Habits of Inclusion":

- Fair,
- Open,
- Cooperative,
- Supportive, and
- Empowering.

Subindex scores are calculated by averaging the unrounded percent positive of each of the items in the subindex. Averaging the five unrounded subindex scores creates the overall New IQ score. Index and subindex scores were rounded for reporting purposes.

Table 10. The New IQ Index Items (20 items)

The New IQ Index (5 Subindices)
Fair (5 items)
23. In my work unit, steps are taken to deal with a poor performer who cannot or will not improve.
24. In my work unit, differences in performance are recognized in a meaningful way.
25. Awards in my work unit depend on how well employees perform their jobs.
37. Arbitrary action, personal favoritism and coercion for partisan political purposes are not tolerated.
38. Prohibited Personnel Practices (for example, illegally discriminating for or against any employee/applicant, obstructing a person's right to compete for employment, knowingly violating veterans' preference requirements) are not tolerated.
Open (4 items)
32. Creativity and innovation are rewarded.
34. Policies and programs promote diversity in the workplace (for example, recruiting minorities and women, training in awareness of diversity issues, mentoring).
45. My supervisor is committed to a workforce representative of all segments of society.
55. Supervisors work well with employees of different backgrounds.
Cooperative (2 items)
58. Managers promote communication among different work units (for example, about projects, goals, needed resources).
59. Managers support collaboration across work units to accomplish work objectives.
Supportive (5 items)
42. My supervisor supports my need to balance work and other life issues.
46. My supervisor provides me with constructive suggestions to improve my job performance.
48. My supervisor listens to what I have to say.
49. My supervisor treats me with respect.
50. In the last six months, my supervisor has talked with me about my performance.
Empowering (4 items)
2. I have enough information to do my job well.
3. I feel encouraged to come up with new and better ways of doing things.
11. My talents are used well in the workplace.
30. Employees have a feeling of personal empowerment with respect to work processes.

Human Capital Assessment and Accountability Framework (HCAAF)

To guide Governmentwide efforts to support agency mission results with strong human capital strategies, OPM created the Human Capital Assessment and Accountability Framework (HCAAF).

The results of the FEVS provide a single source of information for evaluating success in the three HCAAF implementation systems: Leadership and Knowledge Management, Results-Oriented Performance Culture, and Talent Management (see Table 11). The HCAAF consists of 39 items that are grouped into four indices:

- Leadership and Knowledge Management,
- Results-Oriented Performance Culture,
- Talent Management, and
- Job Satisfaction.

Each of the four HCAAF Index scores is calculated by averaging the unrounded percent positive of the items that make up the index. Scores were rounded for reporting purposes

Table 11. HCAAF Index Items (39 items)

Leadership & Knowledge Management Index (12 items)
10.   My workload is reasonable.
35.   Employees are protected from health and safety hazards on the job.
36.   My organization has prepared employees for potential security threats.
51.   I have trust and confidence in my supervisor.
52.   Overall, how good a job do you feel is being done by your immediate supervisor?
53.   In my organization, senior leaders generate high levels of motivation and commitment in the workforce.
55.   Supervisors work well with employees of different backgrounds.
56.   Managers communicate the goals and priorities of the organization.
57.   Managers review and evaluate the organization's progress toward meeting its goals and objectives.
61.   I have a high level of respect for my organization's senior leaders.
64.   How satisfied are you with the information you receive from management on what's going on in your organization?
66.   How satisfied are you with the policies and practices of your senior leaders?

Table 11. HCAAF Index Items (39 items) (continued)

Results-Oriented Performance Culture Index (13 items)

12. I know how my work relates to the agency's goals and priorities.

14. Physical conditions (for example, noise level, temperature, lighting, cleanliness in the workplace) allow employees to perform their jobs well.

15. My performance appraisal is a fair reflection of my performance.

20. The people I work with cooperate to get the job done.

22. Promotions in my work unit are based on merit.

23. In my work unit, steps are taken to deal with a poor performer who cannot or will not improve.

24. In my work unit, differences in performance are recognized in a meaningful way.

30. Employees have a feeling of personal empowerment with respect to work processes.

32. Creativity and innovation are rewarded.

33. Pay raises depend on how well employees perform their jobs.

42. My supervisor supports my need to balance work and other life issues.

44. Discussions with my supervisor about my performance are worthwhile.

65. How satisfied are you with the recognition you receive for doing a good job?

Talent Management Index (7 items)

1. I am given a real opportunity to improve my skills in my organization.

11. My talents are used well in the workplace.

18. My training needs are assessed.

21. My work unit is able to recruit people with the right skills.

29. The workforce has the job-relevant knowledge and skills necessary to accomplish organizational goals.

47. Supervisors in my work unit support employee development.

68. How satisfied are you with the training you receive for your present job?

Table 11. FEVS HCAAF Index Items (39 items) (continued)

Job Satisfaction Index (7 items)
4. My work gives me a feeling of personal accomplishment.
5. I like the kind of work I do.
13. The work I do is important.
63. How satisfied are you with your involvement in decisions that affect your work?
67. How satisfied are you with your opportunity to get a better job in your organization?
69. Considering everything, how satisfied are you with your job?
70. Considering everything, how satisfied are you with your pay?

Index Rankings

The agencies were rank ordered on the different indices in a variety of ways. First, the 37 departments/large agencies were rank ordered separately from the other agencies. The other small/independent agencies were then rank ordered separately. Finally, the agencies were rank ordered based on five size groupings:
1) Less than 100 employees; 2) 100-999 employees; 3) 1,000-9,999 employees; 4) 10,000 – 74,999 employees; and 5) more than 75,000 employees.

In all cases, the rankings were calculated from the rounded percent positive results for the overall index, which allowed for ties. The rankings ranged from '1' for the highest percent positive (if there was a tie, all tied agencies would be ranked 1st) to '37' (for the departments/large agencies) for the lowest percent positive (even if there was a tie). When ranking the departments/large agencies, Army, Army Corps of Engineers, Air Force, Navy, Marine Corps, and Other Defense agencies/activities, were rolled into Department of Defense (DOD) and did not receive their own ranking but received the DOD ranking overall.

The 37 Departments/Large Agencies

Departments/Agencies

Department of Agriculture

Department of Commerce

Department of Defense

Department of Education

Department of Energy

Department of Health and Human Services

Department of Homeland Security

Department of Housing and Urban Development

Department of the Interior

Department of Justice

Department of Labor

Department of State

Department of Transportation

Department of the Treasury

Department of Veterans Affairs

Environmental Protection Agency

General Services Administration

National Aeronautics and Space Administration

National Science Foundation

Office of Management and Budget

Office of Personnel Management

Small Business Administration

Social Security Administration

U.S. Agency of International Development

Large Agencies

Broadcasting Board of Governors

Court Services & Offender Supervision Agency

Equal Employment Opportunity Commission

Federal Communications Commission

Federal Energy Regulatory Commission

Federal Trade Commission

National Archives and Records Administration

National Credit Union Administration

National Labor Relations Board

Nuclear Regulatory Commission

Pension Benefit Guaranty Corporation

Railroad Retirement Board

Securities and Exchange Commission

Presentation of Results

This chapter details the seven types of reports that are produced from the 2016 FEVS as well as the tools for report dissemination and performing online analyses on demand. OPM distributed survey findings in the following 7 reports[8]:

- Governmentwide reports
- Annual Employee Survey (AES) reports
- Management reports
- Subagency reports
- Trend reports
- Agency-specific item reports
- Demographic comparison reports

A listing of the reports with the approximate number of each type produced is shown in Table 12. The Government-wide reports were posted on the 2016 FEVS public website (www.opm.gov/FEVS), and individual agency reports were distributed via the FEVS Online Analysis and Reporting Tool (WesDaX hosted by Westat). These reports are described in more detail in the sections below.

Table 12. FEVS Reports

	Number of Reports			
	2013	2014	2015	2016
Governmentwide Reports (508 compliant)	**4**	**4**	**4**	**4**
Governmentwide Management Report	1	1	1	1
Report by Agency	1	1	1	1
Report by Demographics	1	1	1	1
Unweighted Report by Demographics by Agency	1	1	1	1
Annual Employee Survey (AES) Reports (Excel)	**80**	**82**	**82**	**625**
Agency level	80	82	82	80
1st level	—	—	—	545
Management Reports (508 compliant)	**84**	**84**	**84**	**83**
Agency Management Reports (AMR)	43	43	43	43
Small Agency Management Reports	41	41	41	40

— Signifies the product was not produced that year.

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8   In addition to these reports, OPM produces a Public Release Data File (PRDF) that may be released for further analyses or research purposes. A separate technical report provides details on this data file.

Table 12. FEVS Reports (continued)

	Number of Reports			
	2013	2014	2015	2016
Subagency Reports	**16,446**	**20,892**	**24,589**	**25,181**
1st level comparison	46	50	54	56
1st level breakout	431	458	534	543
2nd level comparison	291	350	408	425
2nd level breakout	1,967	2,218	2,203	2,399
3rd level comparison	932	1,038	1,132	1,228
3rd level breakout	4,541	5,496	5,700	5,848
4th level comparison	974	1,070	1,418	1,563
4th level breakout	3,055	3,876	4,991	5,182
5th level comparison	570	779	947	1,083
5th level breakout	1,489	2,187	2,686	2,943
6th level comparison	254	396	537	566
6th level breakout	821	1,220	1,497	1,263
7th level comparison	324	400	382	247
7th level breakout	751	850	994	798
8th level comparison	—	178	333	260
8th level breakout	—	296	677	509
9th level comparison	—	14	43	93
9th level breakout	—	16	53	175
Trend Reports	**629**	**645**	**680**	**728**
Agency Trend Reports	82	82	82	83
1st level Trend Reports	547	563	599	645
Agency Specific Item Reports	**115**	**130**	**104**	**58**
Demographic Comparison Reports	**—**	**841**	**930**	**950**
WesDaX	Unlimited	Unlimited	Unlimited	Unlimited
Total	**17,358**	**22,678**	**26,473**	**27,629**

— Signifies the product was not produced that year.

Governmentwide Reports

TThere are four 508 compliant Governmentwide reports. The main Governmentwide report (*Government Management Report*) includes an overview of the respondents, response rates over time, top performing agencies on the Employee Engagement and New IQ indices, and the key drivers for employee engagement. The report has 7 appendices providing participating agencies by employee population size, trend analyses, work/life program results, response rates, respondent characteristics, response rates by demographics, and FEVS index results. Many of the appendices are also provided in Excel.

Three other Governmentwide data reports are:

- **Report by Agency:** Displays question-by-question counts and percentages for each response option for the 2016, 2015, and 2014 FEVS by participating agency and also governmentwide. Counts of respondents are unweighted, but the percentage estimates for each question are weighted.

- **Report by Demographics:** Displays question-by-question counts and percentages for each response option for the 2016, 2015, and 2014 FEVS by demographic groups and also governmentwide. Counts of respondents are unweighted, but the percentage estimates for each response category are weighted.

- **Report on Demographic Questions by Agency (Unweighted):** Displays counts and percentages by participating agencies' demographic and workforce profile (e.g., work location, supervisory status, sex, age, pay category, intention to retire) for 2016, 2015, and 2014. Both respondent counts and percentage estimates are unweighted.

Annual Employee Survey Reports

The Annual Employee Survey (AES) Reports provides weighted agency-specific data for all the non-demographic items on the FEVS, with the items mandated by 5 CFR part 250 asterisked. These reports include the number and proportion of responses in each response category, the proportion of positive and negative responses to each survey item (where relevant), and the unweighted responses to the demographic questions. A new dashboard interface was added to the 2016 AES reports to allow users to select and display highest and lowest percent positive or negative items as well as highlight how many items were identified as strengths or challenges. A second dashboard, available for agencies that administered demographic items, spotlights the respondent demographic profile. The dashboard also includes background information such as the survey field period, the number of respondents, response rate, and if the agency frame was a census or sample. Finally, for the 56 agencies that added agency-specific items to the FEVS, the results for these items were also included in the AES. The AES report was produced in Microsoft® Excel, and generated for the 80 agencies with at least 4 respondents. New for 2016, the AES report was also generated for the 545 1st level subagencies with at least 10 respondents.

Management Reports

For the 2016 FEVS, OPM's data presentation for the Management Reports included:

- 43 Agency Management Reports for the Departments/large agencies
- 40 Small Agency Management Reports for the small and independent agencies

The Agency Management Report (AMR) and Small Agency Management (SAM) Reports provide similar content, the AMRs for large agencies and the SAMs for the small agencies. The following sections provide more information about these reports.

Agency Management Report (AMR)

The AMRs are designed to help agency directors and managers identify what they can do to improve management in their agencies. The agency management reports include the following information:

- A guide to understanding and using the results from the FEVS;
- A section entitled "Respondent Overview." This section provide survey administration information (data collection period, sample size, agency and subagency response rates, agency results margin of error), and highlights of the 2016 FEVS agency respondent characteristics;
- A series of sections that display scores, rankings, and trends for:
  - Employee Engagement Index
  - The New IQ Index
- A new section ranking the key drivers of the Employee Engagement Index for the agency;
- A series of Decision Aid tables that present all items that increased, decreased, or did not change since 2015 as well as items considered a strength, challenge or caution item, when items became a new strength or were a past strength, and a new feature highlighting if the was in the top 10 positive or negative items;
- Two appendices that show results for all items, benchmarked against the governmentwide percent positive, and an appendix that presents the agency's work/life programs and demographic results.

Small Agency Management Report (SAM)

The SAMs are almost identical to the AMRs but are designed specifically for small agencies, and provide comparisons to other small agencies, rather than the governmentwide averages. The Small Agency Management reports include:

- A guide to understanding and using the results from the FEVS;
- A section for agencies that administered respondent characteristic and demographic questions entitled "Respondent Overview". This section provide survey administration information (data collection period, sample size, agency and subagency response rates, agency results margin of error), and highlights of the 2016 FEVS agency respondent characteristics;
- A series of sections that displays scores, rankings, and trends for:
  - Employee Engagement Index
  - The New IQ Index
- A new section providing the key drivers of the Employee Engagement Index for all small agencies combined;
- A series of Decision Aid tables that present all items that increased, decreased, or did not change since 2015 as well as items considered a strength, challenge or caution item, when items became a new strength or were a past strength, and a new feature highlighting if the was in the top 10 positive or negative items;
- Three appendices that provide results for all items, benchmarked against the small agencies, an appendix that presents the agency's work/life program results, and an appendix on demographic results (where applicable).

Subagency Reports

Each agency and their components or subagencies (down to the 9th level where applicable) received separate reports showing the percent positive, neutral, and negative results for each item across the subagencies. These results include weighted percentage data for all survey items and the unweighted demographic responses.

The subagency reports for each level (1st – 9th) include both a comparison and a breakout report.

- The Comparison Reports provide the governmentwide, agency, and the specific level results (e.g., the 2nd level comparison had the governmentwide, agency, 1st level, and all 2nd level subagencies' results). In the reports for the 4th level subagency and lower, the higher level results were dropped for simplicity.

- The Breakout Reports provide the governmentwide, agency, and one specific level result (e.g., the 2nd level Breakout report had the governmentwide, agency, 1st level, and one 2nd level subagency results rather than comparing all 2nd level subagencies as in the comparison reports). In the reports for the 4th level subagency and lower, the higher level results (e.g., governmentwide, agency) were dropped for simplicity. In 2016, these reports also include two new sections which highlighted the level's top 10 positive and negative items, as well as items in which they are leading or trailing the level directly above their level (e.g., 2nd level would be compared to the 1st level subagency).

In 2016, these reports also include an embedded Microsoft® Excel® file which provide the results in electronic form to allow agency leaders to sort the data as needed.

No reports were produced when a subagency had fewer than 10 respondents.

Trend Reports

The trend reports provide weighted results for each item from 2010-2016 as well as the current year's demographic results. The trend reports display significant increases, decreases, or instances with no change in positive percentages from the previous year. Arrows slanting up indicate a statistically significant increase, and arrows slanting down indicate a statistically significant decrease. Horizontal arrows indicate the change was not statistically significant. For example, in the row with the 2016 results, if the arrow was slanting up (↗), there was a significant increase in positive percentages from 2015 to 2016. If there were fewer than 30 respondents for a given year, the column showing the 'Difference from previous year' will show '--' to signify that no test was performed due to small sample size. Items 72 to 78 are on a different response scale and were not included in the significance testing. 2010 response percentages are shown to provide context for the significance test from 2011 (see Figure 3 for a sample report excerpt).

Figure 3. Sample Trend Report Excerpt

Agency X
Trend Report

This 2016 Federal Employee Viewpoint Survey Report provides trend results for your department or agency.

Response Summary

	Surveys Completed
2016 Governmentwide	407,789
2016 Agency X	**23,496**
2015 Agency X	21,545
2014 Agency X	21,399
2013 Agency X	19,545
2012 Agency X	41,109
2011 Agency X	7,753
2010 Agency X	5,095

Figure 3. Sample Trend Report Excerpt (continued)

My Work Experience

1. I am given a real opportunity to improve my skills in my organization.

	N	Positive	Neutral	Negative	Difference from previous year
2016 Governmentwide	406,992	62.6%	16.3%	21.1%	
2016 Agency X	**46,913**	**50.4%**	**17.7%**	**32.0%**	↗
2015 Agency X	42,999	46.3%	18.9%	34.8%	→
2014 Agency X	42,719	46.8%	18.4%	34.8%	↘
2013 Agency X	39,021	48.4%	19.4%	32.2%	↘
2012 Agency X	82,061	52.2%	18.2%	29.7%	↘
2011 Agency X	15,484	56.0%	18.5%	25.4%	→
2010 Agency X	10,172	57.6%	18.3%	24.1%	

Agency-Specific Item Reports

In 2016, 56 agencies administered items that were specific to their agency in addition to the core survey item. These agencies received separate agency-specific item reports. There were four general types of agency specific item reports:

Area of Emphasis Reports

These reports provide the counts and the percent positive, negative, and neutral for each survey item by each area of emphasis in the agency.

Occupation Reports

These reports provide the counts and the percent positive, negative, and neutral for each survey item for respondent-reported occupation groups.

Agency-Specific Work Location Reports

These reports provide the counts and the percent positive, negative, and neutral for each survey item by work location in the agency.

The counts were all unweighted and the percentages were weighted for non-demographic type items only. In 2016, agency-specific item reports also include an embedded Microsoft® Excel® file which provided the results in electronic form to allow agency leaders to sort the data as needed.

Demographic Comparison Reports

The demographic comparison reports provide item level results by demographic characteristics for each of the 63 agencies that answered the demographic section of the survey. The results include weighted percentage data for all survey items by the 16 demographic variables:

- Work Location
- Supervisory Status
- Gender
- Ethnicity
- Race
- Education Level
- Pay Category
- Federal Tenure

- Agency Tenure
- Retirement Plans
- Turnover Intentions
- Sexual Orientation and Gender Identity
- Military Service Status
- Disability Status
- Age Group
- Generations

For the demographic reports, several suppression rules applied for confidentiality reasons.

- If there were fewer than 10 respondents in a demographic response category, the results by item for that demographic category were suppressed.
- If there were fewer than 10 respondents for a demographic response category for any given item, the results for that item and that category were suppressed.
- If there would be only one demographic category (e.g., Female) with data for all the survey items based on the suppression rules, the report was not generated.
- For the sexual orientation and gender identity report only, there also needed to be at least 30 respondents in the agency in order for the report to be produced. Further, if there were fewer than 10 respondents in the LGBT response option for the sexual orientation and gender identity item, that report was not generated.

In 2016, these reports also include an embedded Microsoft® Excel® file which provides the results in electronic form to allow agency leaders to sort the data as needed.

Web Reports and Tables

OPM posts reports to the FEVS public website (www.opm.gov/fevs). This website provides the Governmentwide reports, response percentages by question, response rates for each agency, trend analyses from 2012- 2016 results, and a series of demographic comparison results.

Governmentwide Web Reports

The Governmentwide Web reports show the number and percentage of respondents who chose each response option to each survey item. The reports present both weighted and unweighted FEVS results. The reports also show governmentwide responses by the demographic variables. The Web reports allow users to view the results of statistical significance tests demonstrating nonrandom or significant differences between demographic groups. The following web reports were generated:

- Unweighted results of the survey
  - Governmentwide response percentages by item
  - Response rates for each agency

- Weighted results of the survey
  - Overall Results and Comparisons
  - Governmentwide response percentages by item
  - Items rank ordered by positive responses
  - Trend analysis
  - Annual Employee Survey items
  - Demographic Results
  - Age group comparison (%) by item
  - Disability status comparison (%) by item
  - Education level (%) by item
  - Gender comparison (%) by item
  - Hispanic comparison (%) by item
  - Race comparison (%) by item
  - Supervisory status comparison (%) by item
  - Work Location comparison (%) by item
  - Military service status comparison (%) by item

Delivery of Agency Results, Reports and Ad Hoc Analyses – WesDaX

The FEVS Online Analysis and Reporting tool is run by Westat's Data Xplorer (WesDaX), and is an online query and analysis system. It allows OPM and Federal agency users to view and download their reports by following the links as illustrated in Figure 4.

Figure 4. FEVS Online Analysis and Reporting Tool – Main Menu

Governmentwide Reports

Users were able to view/download the following 508 compliant PDF reports:

- Governmentwide Management Report
- Report by Agency
- Report by Demographics
- Unweighted Report by Demographic Questions by Agency

Agency Level Reports

Users were able to view/download their agency level reports. These included the

- Annual Employee Survey (AES) reports,
- Agency Management Report (AMR), or Small Agency Management (SAM) Report (508 compliant),
- Agency Trend Report, and,

1st Level Reports

Users were able to drill down and view/download, in PDF format, for any 1st level subagency reports provided. These included the:

- 1st Level Annual Employee Survey (AES) Report,
- 1st Level Subagency Comparison and Breakout Reports, and
- 1st Level Trend Reports.

Lower Level Reports

Users were able to drill down and view/download, in PDF format, any applicable 2nd -9th level subagency comparison and breakout.

Demographic Comparison Reports

For the 63 agencies that answered the demographic section of the survey, users were able to view/download, in PDF format, the different types of demographic comparison reports available to them.

Agency-Specific Item Reports

For the 56 agencies that added agency-specific items to the end of the core FEVS, users were able to view/download, in PDF format, the different types of agency specific item reports. If an agency did not have any agency-specific items, this option did not show on the menu.

Preconfigured Reports

Users were able to manually configure many of the preceding agency reports to several formats, including PDF, Excel, HTML, and RTF. These included 1st - 9th level subagency comparison and breakout reports, and the agency and 1st level trend reports. In addition to these reports, the following were also available via a pre-configured report

- Agency and 1st level occupational series reports;
- All levels response rate reports;
- All levels all indices report;
- Agency and 1st level indices reports (Employee Engagement, Global Satisfaction, the New IQ, and HCAAF indices);
- Agency and 1st level Index Creation reports whereby users could create their own index scores, and;
- New in 2016 was the Employee Engagement Key Driver Reports – Users were able to output the ranking and standardized regression coefficients for the key drivers of the Employee Engagement Index. Only the departments and large agencies were able to see this and any department or large agency with a 1st level with at least 550 respondents.

Cart

Similar to online shopping carts, this feature allowed users to add multiple reports from the different report options to a cart to download at one time. The feature zips all selected reports into one file for downloading to a location of the user's choice.

In addition to being able to view and download the above reports through WesDaX, users have access to Analysis on Demand feature:

Analysis on Demand

This feature allowed users to drill down into the data to explore relationships of interest. Users can subset the data by year, select variables from a list and produce simple frequency distributions, two-way tables (cross-tabulation), three-way tables, and trend analysis. Two new features were added in 2016. First, users no longer have to choose the type of data set they want to use (Lite Version/Full version), rather the system analyzes what the user is requesting and chooses the smallest dataset to use to expedite the processing speed of the requests. The second feature added was to allow users to create two-way and three-way tables including the indices, not just the items on the survey or the organizational characteristics (e.g., subagency, agency size).

Figure 5. FEVS Online Analysis and Reporting Tool – Analysis on Demand Main Menu

After selecting the year(s), users can choose the type of table for a simple frequency, or two-way or three-way table or trends over time, they can also select their variables of interest, as well as types of statistics desired (e.g., weighted number of responses, cell, row, or column percentages, standard errors, confidence intervals, etc.). Optional features are to filter the data by a subagency, demographic, or responses to an item, and/or benchmark to compare results to the entire dataset or specific agencies.

Users are able to tailor the type of analysis to their interests and download the analysis output. Since 2014, users are able to create charts from results in Analysis on Demand. Users were able to select various chart type (bar, pie, donut, line, and area), chart size, color palette, and data cells. Users could also specify whether or not to show the data values within the chart. Figure 5 provides the main menu for Analysis on Demand.

Account Access

All agency level and 1st level points of contacts and users were carried over from 2015 and provided access to 2016 data. POCs had the capability to grant access to the online reporting tool to others in their agency. This access could be given for all agency results or to only certain 1st level subagencies. For 1st level access, the individual would only be able to view or review data for his/her 1st level subagency, the agency as a whole, and governmentwide results.

Summary of Quality Control Process

In order to ensure the highest accuracy and validity of the data, each number within each report goes through two levels of quality control (QC). The first level of QC for the reports was the electronic quality control with the use of SAS®. Two programmers created the numbers independently and electronically compared the numbers to ensure they matched. The second level of QC was performed by staff members who compare the input (SAS®-produced results) to the output (the actual report with the data incorporated into it). Each type of report has a streamlined process for quality control checks to ensure the highest level of accuracy.

Appendix A

Appendix A: Sampling Rate by Agency

	Population	Sample Size	Portion Sampled/ Sampling Rate	Census (Yes or No)
Presidential Management Council Agencies				
Department of Agriculture	81,591	38,947	47.7%	N
Department of Commerce	38,131	19,450	51.0%	N
Department of Defense	636,987	246,216	38.7%	N
United States Department of the Air Force	138,862	71,419	51.4%	N
United States Department of the Army*	208,765	73,567	35.2%	N
United States Army Corps of Engineers	30,116	7,966	26.5%	N
United States Department of the Navy**	196,777	62,103	31.6%	N
United States Marine Corps	17,685	5,052	28.6%	N
OSD, Joint Staff, Defense Agencies, and Field Activities (DoD 4th Estate)	92,583	39,127	42.3%	N
Department of Education	3,891	3,891	100.0%	Y
Department of Energy	13,118	13,118	100.0%	Y
Department of Health and Human Services	75481	75,481	100.0%	Y
Department of Homeland Security	176,669	96,170	54.4%	N
Department of Housing and Urban Development	7,467	7,467	100.0%	Y
Department of Justice	111,887	46,688	41.7%	N
Department of Labor	15,552	15,552	100.0%	Y
Department of State	23,286	11,235	48.2%	N
Department of Transportation	53,948	30,403	56.4%	N
Department of Veterans Affairs	341,345	96,848	28.4%	N
Department of the Interior	49,578	49,578	100.0%	Y
Department of the Treasury	84,468	84,468	100.0%	Y

*United States Department of the Army numbers include United States Army Corps of Engineers

**United States Department of the Navy numbers include United States Marine Corps

Appendix A: Sampling Rate by Agency (continued)

	Population	Sample Size	Portion Sampled/ Sampling Rate	Census (Yes or No)
Presidential Management Council Agencies (continued)				
Environmental Protection Agency	14,555	14,555	100.0%	Y
General Services Administration	10,886	10,886	100.0%	Y
National Aeronautics and Space Administration	17,030	17,030	100.0%	Y
National Science Foundation	1,222	1,222	100.0%	Y
Office of Management and Budget	436	436	100.0%	Y
Office of Personnel Management	4,836	4,836	100.0%	Y
Small Business Administration	2,173	2,173	100.0%	Y
Social Security Administration	64,219	18,999	29.6%	N
U.S. Agency for International Development	3,687	3,687	100.0%	Y
Large Agencies				
Broadcasting Board of Governors	1,453	1,453	100.0%	Y
Court Services and Offender Supervision Agency	1,165	1,165	100.0%	Y
Equal Employment Opportunity Commission	2,294	2,294	100.0%	Y
Federal Communications Commission	1,613	1,613	100.0%	Y
Federal Energy Regulatory Commission	1,404	1,404	100.0%	Y
Federal Trade Commission	1,096	1,096	100.0%	Y
National Archives and Records Administration	2,810	2,810	100.0%	Y
National Credit Union Administration	1,209	1,209	100.0%	Y
National Labor Relations Board	1,570	1,570	100.0%	Y
Nuclear Regulatory Commission	3,504	3,504	100.0%	Y
Pension Benefit Guaranty Corporation	899	899	100.0%	Y
Railroad Retirement Board	884	884	100.0%	Y
Securities and Exchange Commission	4,321	4,321	100.0%	Y

Appendix A: Sampling Rate by Agency (continued)

	Population	Sample Size	Portion Sampled/ Sampling Rate	Census (Yes or No)
Small Agencies				
AbilityOne Commission	22	22	100.0%	Y
African Development Foundation	31	31	100.0%	Y
American Battle Monuments Commission	28	28	100.0%	Y
Chemical Safety and Hazard Investigation Board	38	38	100.0%	Y
Commission on Civil Rights	26	26	100.0%	Y
Commodity Futures Trading Commission	715	715	100.0%	Y
Consumer Product Safety Commission	506	506	100.0%	Y
Corporation for National and Community Service	653	653	100.0%	Y
Defense Nuclear Facilities Safety Board	97	97	100.0%	Y
Export-Import Bank of the United States	377	377	100.0%	Y
Farm Credit Administration	278	278	100.0%	Y
Farm Credit System Insurance Corporation	10	10	100.0%	Y
Federal Election Commission	317	317	100.0%	Y
Federal Housing Finance Agency	548	548	100.0%	Y
Federal Labor Relations Authority	124	124	100.0%	Y
Federal Maritime Commission	118	118	100.0%	Y
Federal Mediation and Conciliation Service	226	226	100.0%	Y
Federal Retirement Thrift Investment Board	219	219	100.0%	Y
Institute of Museum and Library Services	58	58	100.0%	Y
Inter-American Foundation	32	32	100.0%	Y
International Boundary and Water Commission	228	228	100.0%	Y
Marine Mammal Commission	13	13	100.0%	Y
Merit Systems Protection Board	208	208	100.0%	Y

Appendix A: Sampling Rate by Agency (continued)

	Population	Sample Size	Portion Sampled/ Sampling Rate	Census (Yes or No)
Small Agencies (continued)				
National Capital Planning Commission	32	32	100.0%	Y
National Endowment for the Arts	125	125	100.0%	Y
National Endowment for the Humanities	124	124	100.0%	Y
National Gallery of Art	770	770	100.0%	Y
National Indian Gaming Commission	100	100	100.0%	Y
National Mediation Board	38	38	100.0%	Y
National Transportation Safety Board	399	399	100.0%	Y
Nuclear Waste Technical Review Board	12	12	100.0%	Y
Occupational Safety and Health Review Commission	47	47	100.0%	Y
Office of Navajo and Hopi Indian Relocation	34	34	100.0%	Y
Office of the U.S. Trade Representative	194	194	100.0%	Y
Overseas Private Investment Corporation	227	227	100.0%	Y
Postal Regulatory Commission	61	61	100.0%	Y
Selective Service System	110	110	100.0%	Y
Surface Transportation Board	139	139	100.0%	Y
U.S. Access Board	26	26	100.0%	Y
U.S. International Trade Commission	335	335	100.0%	Y
U.S. Office of Government Ethics	61	61	100.0%	Y
U.S. Office of Special Counsel	119	119	100.0%	Y
U.S. Trade and Development Agency	42	42	100.0%	Y
Total	**1,864,531**	**941,425**	**50.5%**	**--**

Appendix B: 2016 Federal Employee Viewpoint Survey Instrument

	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree
My Work Experience					
1. I am given a real opportunity to improve my skills in my organization.	☐	☐	☐	☐	☐
2. I have enough information to do my job well.	☐	☐	☐	☐	☐
3. I feel encouraged to come up with new and better ways of doing things.	☐	☐	☐	☐	☐
4. My work gives me a feeling of personal accomplishment.	☐	☐	☐	☐	☐
5. I like the kind of work I do.	☐	☐	☐	☐	☐
6. I know what is expected of me on the job.	☐	☐	☐	☐	☐
7. When needed I am willing to put in the extra effort to get a job done.	☐	☐	☐	☐	☐
8. I am constantly looking for ways to do my job better.	☐	☐	☐	☐	☐

	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree	Do Not Know
9. I have sufficient resources (for example, people, materials, budget) to get my job done.	☐	☐	☐	☐	☐	☐
10. My workload is reasonable.	☐	☐	☐	☐	☐	☐
11. My talents are used well in the workplace.	☐	☐	☐	☐	☐	☐
12. I know how my work relates to the agency's goals and priorities.	☐	☐	☐	☐	☐	☐
13. The work I do is important.	☐	☐	☐	☐	☐	☐
14. Physical conditions (for example, noise level, temperature, lighting, cleanliness in the workplace) allow employees to perform their jobs well.	☐	☐	☐	☐	☐	☐
15. My performance appraisal is a fair reflection of my performance.	☐	☐	☐	☐	☐	☐
16. I am held accountable for achieving results.	☐	☐	☐	☐	☐	☐

Appendix B: 2016 Federal Employee Viewpoint Survey Instrument (continued)

	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree	Do Not Know
17. I can disclose a suspected violation of any law, rule or regulation without fear of reprisal.	☐	☐	☐	☐	☐	☐
18. My training needs are assessed.	☐	☐	☐	☐	☐	☐

	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree	No Basis to Judge
19. In my most recent performance appraisal, I understood what I had to do to be rated at different performance levels (for example, Fully Successful, Outstanding).	☐	☐	☐	☐	☐	☐

My Work Unit

	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree
20. The people I work with cooperate to get the job done.	☐	☐	☐	☐	☐

	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree	Do Not Know
21. My work unit is able to recruit people with the right skills.	☐	☐	☐	☐	☐	☐
22. Promotions in my work unit are based on merit.	☐	☐	☐	☐	☐	☐
23. In my work unit, steps are taken to deal with a poor performer who cannot or will not improve.	☐	☐	☐	☐	☐	☐
24. In my work unit, differences in performance are recognized in a meaningful way.	☐	☐	☐	☐	☐	☐
25. Awards in my work unit depend on how well employees perform their jobs.	☐	☐	☐	☐	☐	☐
26. Employees in my work unit share job knowledge with each other.	☐	☐	☐	☐	☐	☐
27. The skill level in my work unit has improved in the past year.	☐	☐	☐	☐	☐	☐

	Very Good	Good	Fair	Poor	Very Poor	
28. How would you rate the overall quality of work done by your work unit?	☐	☐	☐	☐	☐	

My Agency

	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree	Do Not Know
29. The workforce has the job-relevant knowledge and skills necessary to accomplish organizational goals.	☐	☐	☐	☐	☐	☐
30. Employees have a feeling of personal empowerment with respect to work processes.	☐	☐	☐	☐	☐	☐
31. Employees are recognized for providing high quality products and services.	☐	☐	☐	☐	☐	☐
32. Creativity and innovation are rewarded.	☐	☐	☐	☐	☐	☐
33. Pay raises depend on how well employees perform their jobs.	☐	☐	☐	☐	☐	☐
34. Policies and programs promote diversity in the workplace (for example, recruiting minorities and women, training in awareness of diversity issues, mentoring).	☐	☐	☐	☐	☐	☐
35. Employees are protected from health and safety hazards on the job.	☐	☐	☐	☐	☐	☐
36. My organization has prepared employees for potential security threats.	☐	☐	☐	☐	☐	☐
37. Arbitrary action, personal favoritism and coercion for partisan political purposes are not tolerated.	☐	☐	☐	☐	☐	☐
38. Prohibited Personnel Practices (for example, illegally discriminating for or against any employee/applicant, obstructing a person's right to compete for employment, knowingly violating veterans' preference requirements) are not tolerated.	☐	☐	☐	☐	☐	☐
39. My agency is successful at accomplishing its mission.	☐	☐	☐	☐	☐	☐

Appendix B: 2016 Federal Employee Viewpoint Survey Instrument (continued)

	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree
40. I recommend my organization as a good place to work.	☐	☐	☐	☐	☐

	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree	Do Not Know
41. I believe the results of this survey will be used to make my agency a better place to work.	☐	☐	☐	☐	☐	☐

My Supervisor

	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree	Do Not Know
42. My supervisor supports my need to balance work and other life issues.	☐	☐	☐	☐	☐	☐
43. My supervisor provides me with opportunities to demonstrate my leadership skills.	☐	☐	☐	☐	☐	☐
44. Discussions with my supervisor about my performance are worthwhile.	☐	☐	☐	☐	☐	☐
45. My supervisor is committed to a workforce representative of all segments of society.	☐	☐	☐	☐	☐	☐
46. My supervisor provides me with constructive suggestions to improve my job performance.	☐	☐	☐	☐	☐	☐
47. Supervisors in my work unit support employee development.	☐	☐	☐	☐	☐	☐

	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree
48. My supervisor listens to what I have to say.	☐	☐	☐	☐	☐
49. My supervisor treats me with respect.	☐	☐	☐	☐	☐
50. In the last six months, my supervisor has talked with me about my performance.	☐	☐	☐	☐	☐
51. I have trust and confidence in my supervisor.	☐	☐	☐	☐	☐

Appendix B: 2016 Federal Employee Viewpoint Survey Instrument (continued)

	Very Good	Good	Fair	Poor	Very Poor	
52. Overall, how good a job do you feel is being done by your immediate supervisor?	☐	☐	☐	☐	☐	

	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree	Do Not Know
Leadership						
53. In my organization, senior leaders generate high levels of motivation and commitment in the workforce.	☐	☐	☐	☐	☐	☐
54. My organization's senior leaders maintain high standards of honesty and integrity.	☐	☐	☐	☐	☐	☐
55. Supervisors work well with employees of different backgrounds.	☐	☐	☐	☐	☐	☐
56. Managers communicate the goals and priorities of the organization.	☐	☐	☐	☐	☐	☐
57. Managers review and evaluate the organization's progress toward meeting its goals and objectives.	☐	☐	☐	☐	☐	☐
58. Managers promote communication among different work units (for example, about projects, goals, needed resources).	☐	☐	☐	☐	☐	☐
59. Managers support collaboration across work units to accomplish work objectives.	☐	☐	☐	☐	☐	☐

	Very Good	Good	Fair	Poor	Very Poor	Do Not Know
60. Overall, how good a job do you feel is being done by the manager directly above your immediate supervisor?	☐	☐	☐	☐	☐	☐

	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree	Do Not Know
61. I have a high level of respect for my organization's senior leaders.	☐	☐	☐	☐	☐	☐
62. Senior leaders demonstrate support for Work/Life programs.	☐	☐	☐	☐	☐	☐

Appendix B: 2016 Federal Employee Viewpoint Survey Instrument (continued)

	Very Satisfied	Satisfied	Neither Satisfied nor Dissatisfied	Dissatisfied	Very Dissatisfied
My Satisfaction					
63. How satisfied are you with your involvement in decisions that affect your work?	☐	☐	☐	☐	☐
64. How satisfied are you with the information you receive from management on what's going on in your organization?	☐	☐	☐	☐	☐
65. How satisfied are you with the recognition you receive for doing a good job?	☐	☐	☐	☐	☐
66. How satisfied are you with the policies and practices of your senior leaders?	☐	☐	☐	☐	☐
67. How satisfied are you with your opportunity to get a better job in your organization?	☐	☐	☐	☐	☐
68. How satisfied are you with the training you receive for your present job?	☐	☐	☐	☐	☐
69. Considering everything, how satisfied are you with your job?	☐	☐	☐	☐	☐
70. Considering everything, how satisfied are you with your pay?	☐	☐	☐	☐	☐
71. Considering everything, how satisfied are you with your organization?	☐	☐	☐	☐	☐

Work/Life

72. Have you been notified whether or not you are eligible to telework?

☐ Yes, I was notified that I was eligible to telework.

☐ Yes, I was notified that I was not eligible to telework.

☐ No, I was not notified of my telework eligibility.

☐ Not sure if I was notified of my telework eligibility.

73. Please select the response below that BEST describes your current teleworking situation.

☐ I telework 3 or more days per week.

☐ I telework 1 or 2 days per week.

☐ I telework, but no more than 1 or 2 days per month.

☐ I telework very infrequently, on an unscheduled or short-term basis.

☐ I do not telework because I have to be physically present on the job (e.g., Law Enforcement Officers, Park Rangers, Security Personnel).

☐ I do not telework because I have technical issues (e.g., connectivity, inadequate equipment) that prevent me from teleworking.

☐ I do not telework because I did not receive approval to do so, even though I have the kind of job where I can telework.

☐ I do not telework because I choose not to telework.

	Yes	No	Not Available to Me
74-78. Do you participate in the following Work/Life programs?			
74. Alternative Work Schedules (AWS)	☐	☐	☐
75. Health and Wellness Programs (for example, exercise, medical screening, quit smoking programs)	☐	☐	☐
76. Employee Assistance Program (EAP)	☐	☐	☐
77. Child Care Programs (for example, daycare, parenting classes, parenting support groups)	☐	☐	☐
78. Elder Care Programs (for example, support groups, speakers)	☐	☐	☐

	Very Satisfied	Satisfied	Neither Satisfied nor Dissatisfied	Dissatisfied	Very Dissatisfied	No Basis to Judge
79-84. How satisfied are you with the following Work/Life programs in your agency?						
79. Telework	☐	☐	☐	☐	☐	☐
80. Alternative Work Schedules (AWS)	☐	☐	☐	☐	☐	☐
81. Health and Wellness Programs (for example, exercise, medical screening, quit smoking programs)	☐	☐	☐	☐	☐	☐
82. Employee Assistance Program (EAP)	☐	☐	☐	☐	☐	☐
83. Child Care Programs (for example, daycare, parenting classes, parenting support groups)	☐	☐	☐	☐	☐	☐
84. Elder Care Programs (for example, support groups, speakers)	☐	☐	☐	☐	☐	☐

Appendix B: 2016 Federal Employee Viewpoint Survey Instrument (continued)

Demographics

85. Where do you work?

   ☐ Headquarters

   ☐ Field

86. What is your supervisory status?

   ☐ Non-Supervisor: You do not supervise other employees.

   ☐ Team Leader: You are not an official supervisor; you provide employees with day-to-day guidance in work projects, but do not have supervisory responsibilities or conduct performance appraisals.

   ☐ Supervisor: You are a first-line supervisor who is responsible for employees' performance appraisals and leave approval.

   ☐ Manager: You are in a management position and supervise one or more supervisors.

   ☐ Senior Leader: You are the head of a department/agency or a member of the immediate leadership team responsible for directing the policies and priorities of the department/agency. May hold either a political or career appointment, and typically is a member of the Senior Executive Service or equivalent.

87. Are you:

   ☐ Male

   ☐ Female

88. Are you Hispanic or Latino?

   ☐ Yes

   ☐ No

89. Please select the racial category or categories with which you most closely identify (mark as many as apply).

   ☐ American Indian or Alaska Native

   ☐ Asian

   ☐ Black or African American

   ☐ Native Hawaiian or Other Pacific Islander

   ☐ White

Appendix B: 2016 Federal Employee Viewpoint Survey Instrument (continued)

90. What is the highest degree or level of education you have completed?

Less than High School

☐ High School Diploma/GED or equivalent

☐ Trade or Technical Certificate

☐ Some College (no degree)

☐ Associate's Degree (e.g., AA, AS)

☐ Bachelor's Degree (e.g., BA, BS)

☐ Master's Degree (e.g., MA, MS, MBA)

☐ Doctoral/Professional Degree (e.g., Ph.D., MD, JD)

91. What is your pay category/grade?

☐ Federal Wage System (for example, WB, WD, WG, WL, WM, WS, WY)

☐ GS 1-6

☐ GS 7-12

☐ GS 13-15

☐ Senior Executive Service

☐ Senior Level (SL) or Scientific or Professional (ST)

☐ Other

92. How long have you been with the Federal Government (excluding military service)?

☐ Less than 1 year

☐ 1 to 3 years

☐ 4 to 5 years

☐ 6 to 10 years

☐ 11 to 14 years

☐ 15 to 20 years

☐ More than 20 years

93. How long have you been with your current agency (for example, Department of Justice, Environmental Protection Agency)?

☐ Less than 1 year

☐ 1 to 3 years

☐ 4 to 5 years

☐ 6 to 10 years

☐ 11 to 20 years

☐ More than 20 years

94. Are you considering leaving your organization within the next year, and if so, why?

   ☐ No

   ☐ Yes, to retire

   ☐ Yes, to take another job within the Federal Government

   ☐ Yes, to take another job outside the Federal Government

   ☐ Yes, other

95. I am planning to retire:

   ☐ Within one year

   ☐ Between one and three years

   ☐ Between three and five years

   ☐ Five or more years

96. Do you consider yourself to be one or more of the following? (mark as many as apply).

   ☐ Heterosexual or Straight

   ☐ Gay or Lesbian

   ☐ Bisexual

   ☐ Transgender

   ☐ I prefer not to say

97. What is your US military service status?

   ☐ No Prior Military Service

   ☐ Currently in National Guard or Reserves

   ☐ Retired

   ☐ Separated or Discharged

98. Are you an individual with a disability?

   ☐ Yes

   ☐ No

Appendix C: Sample Emails

Sample Invitation Email

Subject: 2016 Federal Employee Viewpoint Survey

2016 Federal Employee Viewpoint Survey: Employees Influencing Change

The Federal Employee Viewpoint Survey (FEVS) is a safe and confidential way for you to voice your opinions about critical aspects of your job and working environment. Please take this important opportunity to help guide your agency's focus in the coming years.

Click here to access your survey:

XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

If the link does not take you directly to the survey, copy and paste the following into a browser window:

XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

Please DO NOT forward this e-mail, as it contains your personalized link to the survey. Answering the questions will take about 25 minutes, and you may use official time. While participation is voluntary, your feedback is important. Your individual responses are confidential.

Reply to this message if you have any questions or difficulties accessing the survey, or call our Survey Support Center toll free at: 1-855-OPM-FEVS (1-855-676-3387).

Thank you for taking the time to complete the survey.

Sample Reminder Email

Inspire Change through your participation in the Federal Employee Viewpoint Survey!

What matters most to you as a Federal employee? If you had the opportunity to speak directly with your agency's senior leaders, what would you say?

If you have not yet completed the 2016 FEVS, take this opportunity to fill out the survey. This is your chance to voice your opinions and let your leadership know which issues are most critical to you.

Click here to access your survey

XXXX

If the link does not take you directly to the survey, copy and paste the following into a browser window:

XXXX

Please DO NOT forward this e-mail, as it contains your personalized link to the survey.

Please reply to this message if you have any questions or difficulties accessing the survey, or call our Survey Support Center toll free at: 1-855-OPM-FEVS (1-855-676-3387).

Appendix D: AAPOR Response Rate

The following presents the calculation of the FEVS response rate using the AAPOR Response Rate 3 formula.

Table D1. Case Assignment Allocation to Response Rate Groups, by the AAPOR RR3 Method

Response Rate (RR) Group	AAPOR RR3 Method Allocation	AAPOR RR3 Method Counts
Eligible Respondents (ER)	CO	407,789
Eligible Non-respondents (ENR)	UA, RF, IN	7,590
Unknown Eligibility (UNK)	UD, NR, NE	500,978
Ineligible (IE)	IE	25,068
		941,425

AAPOR Response Rate 3 formula

Number of eligible employees returning completed surveys / (Number of known eligible employees + estimated number of eligible employees among cases of unknown eligibility):

$RR3_{AAPOR} = ER / (ER + ENR + UNK_{elig}) * 100$,

where UNK_{elig} = the estimated number of eligible cases

among cases of unknown eligibility. It was calculated as follows:

$P_{elig} = (ER + ENR) / (ER + ENR + IE)$ = proportion of eligible cases among cases of known eligibility

$P_{elig} = (407,789 + 7,590) / (407,789 + 7,590 + 25,068)$

$P_{elig} = 0.943085093$

$UNK_{elig} = P_{elig} * UNK = 0.943085093 * 500,978 = 472,465$

Thus,

$RR3_{AAPOR} = 407,789 / (407,789 + 7,590 + 472,465) * 100$

$RR3_{AAPOR} = 407,789 / 887,844 * 100$

$RR3_{AAPOR} = 45.9$ percent

Appendix E: Weighting of the Survey Data

Base Weights

The base weight for a sampled employee is defined as the reciprocal of the employee's probability of selection into the FEVS stratified random sample. As noted in the main report, the sample frame for each agency was a list of all employees in the agency who were eligible for the survey. Within each major agency frame, employees were grouped (stratified) by the lowest desired work unit and by executive status (see Sample Design section of main report). The total number of resulting subgroups (strata) created by the stratification was 30,754, with $H=30,754$ representing the total number of subgroups and h indexing a particular subgroup. Thus, there were H non-overlapping groups consisting of N_h employees in each subgroup so that

$$N = \sum_{h=1}^{H} N_h$$

where N is the total frame count—that is, the number of employees listed in the agency sample frame.

Within each subgroup a random sample was selected without replacement. The probability of selection varied by subgroup to ensure adequate representation of subgroup members in the sample. Given this design, the base weight for the ith sample employee in subgroup h was calculated as:

$$w_{hi} = \frac{N_h}{n_h}$$

where n_h is the sample size for the hth subgroup and N_h is the frame count for the hth subgroup.

For each employee classified in subgroup h, the base weight is the ratio of the total number of employees in the subgroup to the subgroup sample size (equals the inverse of the probability of selection). The base weight is attached to each sample unit (employee) in the data file. Note that n_h is the number of employees initially sampled in subgroup h—all sample members, not just survey responders, receive a base weight.
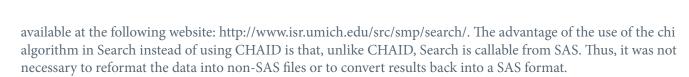
Survey Nonresponse Adjustment

Some sample members did not respond to the survey, usually because they chose not to participate, they considered themselves ineligible, or their surveys were undeliverable. The base weights were adjusted to reduce bias in survey estimates that occurs when the respondent population and the survey population no longer match on important characteristics. In other words, the adjustments are generally used to increase the base weights of respondents to account for non-respondents.

Nonresponse adjustments were calculated separately for individual agencies or sets of subagencies. Prior to 2015, NR adjustments were calculated separately for each agency. For 2015, noresponse adjustments were calculated separately for subagencies that have 2,500 or more employees and for an agency's set of subagencies that each has fewer than 2,500 employees. Within each agency, weighting cells were constructed to group respondents and non-respondents with similar characteristics into the same cells for adjustment. The variables used to form the weighting cells included a sub-agency identifier, supervisory status, sex, minority status, age group, tenure as a Federal employee, full- or part-time status, and location (headquarters vs. field office). Large subgroups were divided into smaller weighting cells to increase variation across the cells. A categorical search algorithm was used to divide the data into smaller cells, with the goal of having response rates differ as much as possible across the cells. Cells with similar response rates were combined when necessary to achieve a minimum cell size of 30 respondents.

For the 2006 survey administration, the algorithm called CHAID (Chi-squared Automatic Interaction Detector; Kass, 1980) was used to divide the data into smaller cells. Since that time (i.e., for the 2008, 2010, 2011, 2012, 2013, 2014, 2015, and 2016 survey administrations), the chi algorithm in the Search software developed and maintained by the University of Michigan was used. The chi algorithm is an ancestor of CHAID. Search is a freeware product,

available at the following website: http://www.isr.umich.edu/src/smp/search/. The advantage of the use of the chi algorithm in Search instead of using CHAID is that, unlike CHAID, Search is callable from SAS. Thus, it was not necessary to reformat the data into non-SAS files or to convert results back into a SAS format.

After the weighting cells were formed, statisticians calculated two nonresponse adjustment factors. The following formula was used to compute the first nonresponse adjustment factor for each weighting cell:

$$f_c^{1,nr} = \frac{\sum_{i \in ER_c} w_i + \sum_{i \in ENR_c} w_i + \sum_{i \in I_c} w_i + \sum_{i \in U_c} w_i}{\sum_{i \in ER_c} w_i + \sum_{i \in ENR_c} w_i + \sum_{i \in I_c} w_i}$$

where $\sum_{i \in ER_c} w_i$ is the sum of base weights for eligible respondents in weighting cell c, $\sum_{i \in ENR_c} w_i$ is the sum of base weights for eligible non-respondents in weighting cell c, $\sum_{i \in I_c} w_i$ is the sum of base weights for known ineligibles in weighting cell c, and $\sum_{i \in U_c} w_i$ is the sum of base weights for non-respondents of unknown eligibility in weighting cell c. The first adjustment factor was used to distribute the base weights of non-respondents of unknown eligibility to units of known eligibility. The statisticians refer to this type of weight adjustment as a Type 1A weight adjustment (see Appendix F). This was achieved by multiplying the base weights of eligible respondents, known ineligibles, and non-respondents known to be eligible by the first adjustment factor and setting the final weight of the non-respondents of unknown eligibility to zero.

The following formula was used to compute the second nonresponse adjustment factor for each weighting cell:
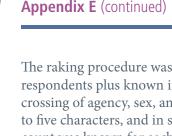
$$f_c^{2,nr} = \frac{\sum_{i \in ER_c} w_i' + \sum_{i \in ENR_c} w_i'}{\sum_{i \in ER_c} w_i'}$$

where w_i' is the adjusted weight resulting from multiplying the base weight for unit i by the first adjustment factor. The second adjustment factor was used to distribute the adjusted weights of non-respondents of known eligibility to the eligible respondents. The statisticians refer to this type of adjustment as a Type 1B adjustment. (See Appendix F.) The final weights were calculated by multiplying the base weights of the eligible respondents by both adjustment factors and by setting the final weight of the non-respondents of known eligibility to zero. Thus, the nonresponse adjusted weights were $w_i^{nr} = f_c^{1,nr} * w_i$ for known ineligibles and $w_i^{nr} = f_c^{1\,nr} f_c^{2,nr} * w_i$ for eligible respondents.

Raking

The precision of survey estimates is improved if known information about the total population is used during the weighting process. For the final stage of weighting, statisticians used a method called raking that incorporated available information on the demographic characteristics of the FEVS sample population. For this third adjustment step, the sample file was subset to include only eligible respondents and known ineligibles. Then, the adjusted base weights were further adjusted so they sum to control totals computed from the sampling-frame variables. The known ineligibles are included in raking because the control totals computed from the sampling frame variables also include ineligibles. At the conclusion of raking, however, only the final weights of the eligible respondents are used with the collected survey data to compute weighted estimates.

The raking procedure was carried out in a sequence of alternating adjustments. Weighted counts for eligible respondents plus known ineligibles were arrayed into two dimensions. The first dimension was formed by the crossing of agency, sex, and minority status. The second dimension was formed by truncating the stratum identifier to five characters, and in some cases further collapsing the resulting stratum-based cells. The actual population count was known for each cell in those two dimensions. Weighted counts of eligible respondents plus known ineligibles were produced for the first dimension, and then the weights were adjusted to reproduce the population counts. Those adjusted weights were then used to produce counts for the second dimension. The weighted counts of eligible respondents plus known ineligibles were compared with population counts for the second dimension, and the weights were adjusted again to reproduce population counts. This process of alternately adjusting for one, then the other, dimension was repeated until the survey distributions for the two dimensions equaled the population control counts for both dimensions, within a specified level of precision. That is, the sum of the weights for each raking dimension was acceptably close to the corresponding population total.

The final raked weight for the ith respondent was computed as:

$$\widetilde{w}_i^R = \widetilde{f}_i^R w_i^{nr}, i \in s_g$$

where f_i^R is the product of the iterative adjustments (in each dimension group, s_g) applied to the ith sample

employee. The final weight equals the number of people in the survey population the ith respondent represents. The weights for the eligible respondents were added to the data file. When the weights are used in data analysis, they improve the precision and accuracy of survey estimates.

Full-sample versus Replicate Weights

For the 2004, 2006, and 2008 FHCS, *full-sample weights* were used to calculate standard errors and to perform statistical tests when the Taylor linearization method is used. For the 2010- 2016 administrations, full-sample weights and Taylor linearization were still used for all analyses, except *replicate weights* were used for agency and Governmentwide trend analyses. Replicate weights were used because these trend analyses were also available on demand in WesDaX, Westat's online query and analysis system.

WesDaX uses the jackknife method to determine standard errors and to perform statistical tests, which requires the calculation of sets of replicate weights. The *replicate weights* were calculated by the JKn method, which randomly assigns cases to groups, referred to as *variance units*, within sets of sampling strata, referred to as *variance strata*. The sampling strata for a particular agency were assigned to variance strata based on stratum response rates. Each set of replicate weights corresponds to deleting one variance unit and then recalculating the weights based on the remaining variance units. The nonresponse and calibration adjustments for the 2010-2016 FEVS were replicated in each set of replicate weights. Consequently, standard errors calculated by using the jackknife method correctly accounts for the effects of weight adjustment on sampling variability.

Example

The remainder of this appendix presents a numerical example of the three-step weighting procedure. For this example, we assume that all the units in the sampling frame are eligible cases. Consequently, this example does not include any adjustments for cases of unknown eligibility.

Table D1 shows how the population is partitioned into five strata, and strata 4 and 5 are combined. In each of the resulting four strata, the target number of completed cases is 950. The rightmost column of Table D1 contains the base weights by stratum. For example the base weight for stratum 1 is 13,470 / 950=14.179.
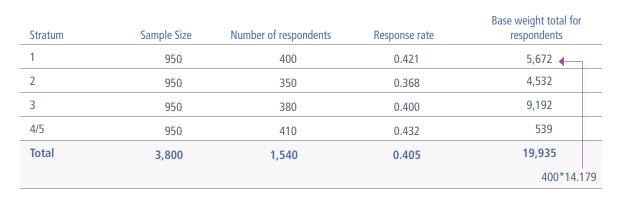
Table E1. Population Counts, Sample Sizes, Selection Probabilities, and Base Weights

Stratum	Population Count	Sample Size	Selection Probability	Base Weight
1	13,470	950	0.071	14.179
2	12,300	950	0.077	12.947
3	22,980	950	0.041	24.189
4	450			
4/5	} 1,250	950	0.760	1.316
5	800			
Total	**50,000**	**3,800**		
			950/13,470	13,470/950

Table D2 contains the number of respondents by strata and the associated response rates. The rightmost column of Table D2 contains the sum of the base weights for all the respondents in each stratum. For example, for stratum 1 the sum of the base weights is 400*14.179 = 5,672. However, this is not close to the stratum population size of 13,470 for stratum 1 shown in Table D1. If the response rate were 100 percent in stratum 1, then the sum of the base weights for all respondents in a stratum would equal the stratum's population size. Because the response rate is not 100%, adjustments to the weights to compensate for nonresponse will be calculated.

Table E2. Sample, Respondents, Response Rates, and Base Weighted Totals

Stratum	Sample Size	Number of respondents	Response rate	Base weight total for respondents
1	950	400	0.421	5,672
2	950	350	0.368	4,532
3	950	380	0.400	9,192
4/5	950	410	0.432	539
Total	**3,800**	**1,540**	**0.405**	**19,935**
				400*14.179

One of the sampling-frame variables contains location information—that is, headquarters or field—about each case. Table D3 shows how respondents can be assigned to nonresponse-adjustment cells on the basis of location and then associated response rates and nonresponse adjustment factors calculated. For example, for the Field location, the nonresponse adjustment factor would be the reciprocal of the response rate of 0.310 for a 3.226 nonresponse adjustment factor. By using the reciprocal of the response rate, the nonresponse adjustment factor will be greater than or equal to one, so multiplying the base weight for a respondent by a nonresponse adjustment factor increases it so it represents both the respondent and associated non-respondents. The base weights are then multiplied by the adjustment factors, yielding the nonresponse-adjusted weights shown in Table D4

Table E3. Response Rates By Location

Location	Number of respondents	Response Rate	Nonresponse adjustment factor
Headquarters	952	0.500	2.000
Field	588	0.310	3.226
Total	**1,540**	**0.405**	
			1/0.310

Table E4. Nonresponse Adjusted Weights

Stratum	Base Weight	Adjustment factor		Adjusted weight	
		HQ	Field	HQ	Field
1	14.179	2.000	3.226	28.358	45.741
2	12.947	2.000	3.226	25.895	41.768
3	24.189	2.000	3.226	48.379	78.035
4/5	1.316	2.000	3.226	2.632	4.245

In Table D5, the second column from the right contains the sum of the nonresponse-adjusted weights for all the respondents in the eight cells defined by stratum and location. The rightmost column of Table D5 contains the cell's population size. The corresponding entries for the stratum totals in the two columns are not equal because of the variability in response rates across the four strata within each nonresponse adjustment cell, defined by location. If there had been no cross-stratum variability of responses rates within a nonresponse adjustment cell, the corresponding stratum totals in the two columns would have been equal to each other.

Table E5. Unweighted and Weighted Counts for Respondents and Population Counts By Stratum and Location

Stratum	Location	Unweighted count for respondents	Weighted count for respondents	Population count
1	HQ	305	8,649	7,880
1	Field	95	4,345	5,590
Total for 1		400	12,995	13,470
2	HQ	130	3,366	3,752
2	Field	220	9,189	8,548
Total for 2		350	12,555	12,300
3	HQ	217	10,498	10,915
3	Field	163	12,720	12,065
Total for 3		380	23,218	22,980
4/5	HQ	299	787	800
4/5	Field	111	471	450
Total for 4/5		410	1,258	1,250
Totals		**1,540**	**50,026**	**50,000**
	299*2.632			

Table D6 illustrates two iterations of raking of the weights using stratum and sex as raking dimensions. The objective of such raking is to adjust the weights so that the sum of the weights for all the respondents in each stratum equals the stratum's population control total and also the sum of the weights for all the respondents of each sex equals the sex's population control total.

Table E6. Raking of Weights Using Stratum and Sex as Ranking Dimensions

Iteration 1

Stratum	Weighted Count	Population Count	Raking Factor
1	12,995	13,470	1.037
2	12,555	12,300	0.980
3	23,218	22,980	0.990
4/5	1,258	1,250	0.994
Total	**50,026**	**50,000**	

13,470/12,995

Multiply weights by raking factors to get new weights and produce distribution by sex.

Sex	Weighted Count	Population Count	Raking Factor
Male	21,900	23,500	1.073
Female	27,000	26,500	0.981
Total	**48,900**	**50,000**	

Calculate new weights using raking factors and produce distribution by group.

Iteration 2

Stratum	Weighted Count	Population Count	Raking Factor
1	13,520	13,470	0.996
2	12,250	12,300	1.004
3	23,150	22,980	0.993
4/5	1,248	1,250	1.002
Total	**50,168**	**50,000**	

Sex	Weighted Count	Population Count	Raking Factor
Male	23,400	23,500	1.004
Female	26,400	26,500	1.004
Total	**49,800**	**50,000**	

Iterations continue until weighted counts are close or equal to population counts.

Appendix F: Illustration of Weight Adjustment Operations

Table F1. Values of Status Variables

Status	Description
0	Case where the initial weight should not be changed
1	Eligible respondents
2	Eligible non-respondents
3	Ineligible
4	Unknown eligibility status

Table F2. Sums of Weights used to Define Type 1A and Type 1B Nonresponse Adjustments

Sums of Weights

$S_1 = \sum wgt_{status = 1}$ Eligible Respondents

$S_2 = \sum wgt_{status = 2}$ Eligible Non-respondents

$S_3 = \sum wgt_{status = 3}$ Ineligible

$S_4 = \sum wgt_{status = 4}$ Unknown (non-respondents)

Figure F1. Type 1A Nonresponse Adjustment

Unknown Eligibility

S1 = Eligible Respondents

S2 = Eligible Non-Respondents

S3 = Ineligibles

Figure F2. Type 1B Nonresponse Adjustment

S1 = Eligible Respondents
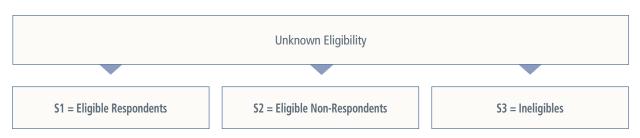
S2 = Eligible Non-Respondents

S3 = Ineligibles

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