

The Keys to Unlocking Engagement

An Analysis of the Conditions that Drive Employee Engagement

Technical Report

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Executive Summary

Developing and sustaining an engaged, innovative, and productive Federal workforce is a high priority for the Federal Government. Its importance is illustrated by the inclusion of improved employee engagement for the People and Culture Cross Agency Priority (CAP) Goal of the President’s Management Agenda. The U.S. Office of Personnel Management’s (OPM) Strategic Goal 6 also directs offices to help agencies create inclusive and diverse work environments that engage and energize employees.

This emphasis on engagement for Federal agencies stems largely from research in both private- and public-sector organizations that consistently shows engagement can affect employees’ attitudes, levels of absenteeism and turnover, productivity, as well as organizational performance (Corporate Leadership Council, 2004; Shuck & Rocco, 2011; Soane et al., 2013; Taylor, 2012). The work of Federal employees touches upon the lives of millions, from providing basic services to protecting the nation’s security. Employee engagement, consequently, is fundamental to the Government’s ability to efficiently and effectively meet the needs of the American public.

While an engaged workforce is essential to achieving the critical work of the Federal Government, few analyses have been conducted to help guide and inform agency leaders about which actions to take to strengthen employee engagement. The purpose of this report is to (1) describe the key driver analysis conducted by OPM that identifies the conditions that contribute to engagement, (2) detail the methodology and criteria used to conduct the analyses, and (3) offer recommendations for actions agencies may take to create a work environment that engages employees.

The study builds upon and extends earlier driver research conducted by the Government Accountability Office (GAO).¹ While the objectives for the studies were similar, there are essential differences. For example, in OPM’s study, drivers were developed as composites or factors² and, thus, are more likely to yield stable results than the individual item drivers identified by GAO. The satisfaction items analyzed by GAO were also excluded largely because satisfaction is identified in the literature as an outcome of engagement rather than a driver. In OPM’s analysis care was taken to focus on and include only items that suggest or indicate some possible course of action.

Through analysis we identified and examined the impact of nine different factors on the EEI—governmentwide, across selected groups of Federal employees, and for selected agencies. These nine factors were: 1) *Collaborative/Cooperative Management* [2 items]; 2) *Employee Training & Development* [2 items]; 3) *Job Resources* [3 items]; 4) *Merit System Principles* [3 items]; 5) *Performance Feedback* [3 items]; 6) *Performance Rating* [3 items]; 7) *Performance Recognition & Reward* [4 items]; 8) *Supportive Coworkers* [2 items]; and 9) *Work/Life Balance* [1 item].³ We also examined the extent to

¹ For the full report, please see U.S. Government Accountability Office, *Federal workforce: Additional Analysis and Sharing of Promising Practices Could Improve Employee Engagement and Performance*, GAO-15-585 (Washington, D.C.: July 2015).

² All potential key drivers consisted of multiple items except Work/Life. The concepts being investigated were broad and multifaceted and a single survey item was insufficient. We created factors or composite measures that consisted of multiple FEVS items, when possible. Such measures provide more consistent and robust estimates than single item measures.

³ To develop the composite measures, we identified FEVS items that were consistent with theory and that were actionable and could be used by managers or senior leaders to effect change within their agencies. [Table 15](#) in [Appendix I](#) provides a description of these factors, including the corresponding FEVS items that were used to create the composite measures and their reliabilities.

which these nine factors were key drivers of the three subindices of the EEI: Leaders Lead, Supervisors, and Intrinsic Work Experience.

Summary of Key Findings

Key Drivers of the Employee Engagement Index (EEI)

Based upon ordinary least squares (OLS) multiple regression analysis of FEVS data, five factors were consistently identified as key drivers of the EEI. They are presented in [Table 1](#).

Table 1. Five Key Drivers of the Employee Engagement Index (EEI), Governmentwide

Drivers of Engagement	Description
#1. Performance Feedback [3 items]	Meaningful, worthwhile and constructive performance conversations with supervisors
#2. Collaborative/Cooperative Management [2 items]	A management style that promotes and supports collaborative communication and teamwork in accomplishing goals and objectives
#3. Merit System Principles [3 items]	Practices that support fairness and protect employees from arbitrary actions, favoritism, political coercion, and reprisal
#4. Employee Training & Development [2 items]	Opportunities for employees to improve skills and enhance professional development
#5. Work/Life Balance [1 item]	Supervisor support of employees' needs to balance work and life responsibilities

NOTE: Numbers shown represent the order of the key driver based upon effect size.

Key Drivers of the EEI for Subsets of the Federal Workforce

We identified the conditions that lead to engagement for different groups identified by demographic (i.e. age, generation) or employment characteristics (e.g., supervisory status). Shown in [Table 2](#), results revealed more commonalities than differences. While the order of the drivers may have differed across groups, the findings largely pointed to the same conclusion: Performance Feedback, Collaborative/Cooperative Management, Merit System Principles, Employee Training & Development, and Work/Life Balance were the top five key drivers across generations, supervisory status, military service, agency tenure, telework status, and mission-critical occupations.

Table 2. Key Drivers of the EEI for Selected Groups of Federal Employees, Rankings

	TOP FIVE KEY DRIVERS GOVERNMENTWIDE				
	Performance Feedback	Collaborative/Cooperative Management	Merit System Principles	Employee Training & Development	Work/Life Balance
SELECTED GROUPS					
<i>Generations</i>					
Traditionalists	2	1	3	5	3
Baby Boomers	1	1	3	4	5
Generation X	1	2	3	4	5
Millennials	1	2	4	3	5
<i>Supervisory Status</i>					
Non-supervisor	1	2	3	4	5
Supervisor	1	2	3	4	5
Senior Executive	1	2	3	4	NA
<i>Military Service</i>					
No Service	1	2	3	4	5
Some Service	1	2	3	4	5
<i>Agency Tenure</i>					
< 4 years	1	2	3	4	5
4 – 10 years	1	2	3	4	5
> 10 years	1	2	3	4	5
<i>Telework Status</i>					
Telework	1	2	3	4	5
Barrier to Telework	1	2	3	4	5
Choose Not To Telework	1	1	3	4	5
<i>Mission-Critical Occupations</i>					
Auditor	1	2	3	4	6*
Contract Specialist	1	2	4	3	5
Economist	1	2	3	4	4
HR Specialist	2	1	3	4	4
IT Specialist	1	2	3	4	5
Non-MCO	1	2	3	4	5

Source: OLS regression analyses of 2015 Federal Employee Viewpoint Survey (FEVS) data.

NOTES:

1. Numbers shown represent the order of the top five key drivers based upon effect size.
2. NA indicates this factor was not a top five key driver for this group based upon the criteria established. [Appendix III](#) presents the OLS regression results, including the standardized coefficients, for all analyses.
3. Generations are defined as: *Traditionalists* (born 1945 or earlier), *Baby Boomers* (born 1946 – 1964), *Generation X* (born 1965 – 1980), and *Millennials* (born 1981 or later).
4. Barriers to telework include being required to be physically present, technical issues, and no approval.
5. Mission-Critical Occupations (MCOs) are defined as those where staffing gaps could affect the ability of agencies to carry out their missions (<http://www.gao.gov/products/GAO-15-223>).
6. * indicates this factor was a key driver for this group, but it was not a top five key driver.

Additionally, we explored the key drivers of the EEI across multiple years and for selected agencies.⁴ [Table 3](#) displays the key drivers for the Department of Homeland Security (DHS), the Environmental Protection Agency (EPA), the Small Agencies (combined), and the Small Business Administration (SBA). As shown, Performance Feedback, Collaborative/Cooperative Management, Merit System Principles, Employee Training & Development, and Work/Life Balance were among the top five key drivers across all years examined and for the selected agencies, with only two exceptions.

Table 3. Key Drivers of the EEI for Selected Years and Agencies, Rankings

	TOP FIVE KEY DRIVERS				
	Performance Feedback	Collaborative/Cooperative Management	Merit System Principles	Employee Training & Development	Work/Life Balance
SELECTED YEARS AND AGENCIES					
<i>Years Analyzed</i>					
2013	1	2	3	4	5
2014	1	2	3	4	5
2015	1	2	3	4	5
<i>Selected Agencies, 2015</i>					
DHS	1	2	3	4	5
EPA	1	2	3	4	NA
Small Agencies	1	2	3	3	5
SBA	1	2	3	4	NA

NOTES:

1. Numbers shown represent the order of the top five key drivers based upon effect size.
2. NA indicates this factor was not a top five key driver for this group based upon the criteria established. [Appendix III](#) presents the OLS regression results, including the standardized coefficients, for all analyses.
3. Agencies were selected based upon variation in their sizes (e.g., number of employees who responded to the 2015 FEVS) and/or EEI scores.
4. Due to the small number of employees who work in many of the Small/Independent Agencies, the analyses were conducted with all 45 participating agencies as one group. [Appendix II](#) contains the list of these agencies.

Key Drivers of the Three EEI Subindices

The EEI consists of three subindices: Leaders Lead, Supervisors, and Intrinsic Work Experience. Each subindex emphasizes a different aspect of the work environment. Leaders Lead reflects the employees’ perceptions of senior leadership. Supervisors reflects the interpersonal relationship between worker and supervisor, including trust, respect, and support. Intrinsic Work Experience reflects the employees’ feelings of motivation and competency relating to their role in the workplace. Since each subindex focuses on different aspects of the work environment, we analyzed the key drivers of each separately. As shown in [Table 4](#), the results suggested different key drivers for each subindex, with little overlap.

⁴ To test the robustness and stability of the drivers, we selected several agencies based upon variation in their sizes (e.g., the number of employees who responded to the 2015 FEVS) and/or EEI scores. The number of employees who responded for the three Department/Large Agencies were as follows: DHS—43,090; EPA—4,456; and SBA—1,303. For the Small/Independent Agencies, the average number of employees that responded was 114.

Table 4. Key Drivers of the Three EEI Subindices

Drivers of Engagement	Description
Leaders Lead Subindex	
#1. Collaborative/Cooperative Management [2 items]	A management style that promotes and supports collaborative communication and teamwork in accomplishing goals and objectives
#2. Merit System Principles [3 items]	Practices that support fairness and protect employees from arbitrary actions, favoritism, political coercion, and reprisal
#3. Performance Recognition & Reward [4 items]	An effective recognition and reward system in which supervisors/managers/leaders recognize outstanding employee contributions and performance.
Supervisors Subindex	
#1. Performance Feedback [3 items]	Meaningful, worthwhile and constructive performance conversations with supervisors
#2. Work/Life Balance [1 item]	Supervisor support of employees' needs to balance work and life responsibilities
Intrinsic Work Experience Subindex	
#1. Employee Training & Development [2 items]	Opportunities for employees to improve skills and enhance professional development
#2. Job Resources [3 items]	Sufficient materials, knowledge, personnel, skills, information and workload to complete the job
#3. Performance Rating [3 items]	Ensures employees are held accountable and performance is evaluated and rated
#4. Merit System Principles [3 items]	Practices that support fairness and protect employees from arbitrary actions, favoritism, political coercion, and reprisal
#5. Collaborative/Cooperative Management [2 items]	A management style that promotes and supports collaborative communication and teamwork in accomplishing goals and objectives

NOTE: Numbers shown represent the order of the key driver based upon effect size.

Conclusion

Key findings from the current analysis, GAO's report, research on private-sector organizations, and promising practices identified in the Employee Engagement Senior Accountable Official (SAO) Workshop⁵ indicate employee engagement is likely to be higher when certain conditions exist. By identifying the key drivers, we can refocus attention on and prioritize specific management practices that are most likely to improve the conditions that lead to engagement.

It is important to remember that different actions may increase the level of engagement of different employees, and that not every recommendation may be a good fit with every organizational culture. Managers and human resources professionals should determine how best to tailor key driver findings to best fit their organization and the individuals within those organizations.

⁵ The Employee Engagement Senior Accountable Official (SAO) Workshop, hosted by OPM, the Office of Management and Budget (OMB), and the Presidential Personnel Office, was held on Monday, May 18, 2015 at the White House. Results from this workshop and other SAO Workgroups may be found on www.unlocktalent.gov.

Introduction

Fostering a culture of excellence and engagement is a high priority within the Federal Government. As indicated most prominently in the “People and Culture” section of the President’s Management Agenda,⁶ Federal leaders are challenged to: *Innovate by unlocking the full potential of the workforce we have today and building the workforce we need for tomorrow*. Achieving this essential goal means enabling higher performance by building agency cultures of excellence and engagement.

Research has shown that engaged employees produce desirable organizational outcomes. For example, one study found that engaged public sector employees are: (1) twice as likely to stay in their current jobs, (2) two-and-a-half times more likely to feel they can make a difference, and (3) three times as likely to report being satisfied in their jobs (Taylor, 2012). Focusing on the private-sector, Reilly (2014) found work units in the top quartile in employee engagement outperformed bottom-quartile units by 10% on customer ratings, 22% in profitability, and 21% in productivity. Thus, employees who are engaged in their work and committed to their organizations provide crucial advantages (Mann & Wood, 2015; Vance, 2006). In light of budget constraints, austere financial conditions, impending retirements, and public discussions over the value of employees and their work, supporting employee engagement has become more critical now than ever before to Federal workplaces. An agency that can foster conditions that develop and sustain an engaged workforce contributes to the success of their own agency and the entire Federal Government.

Assessing and guiding agency potential to engage the workforce is key to achieving objectives for the President’s Management Agenda. The Federal Employee Viewpoint Survey has been used to assess the engagement potential of agencies since 2010, however, few analyses have been conducted to help guide and inform agency leaders about which actions to take to strengthen engagement.

In continued support of agencies’ efforts to create a culture of excellence and employee engagement, OPM conducted analyses to identify the key drivers of the EEI and the three EEI Subindices. We examined the key drivers across multiple years and for subsets of the Federal workforce, including selected demographic groups and agencies. This report summarizes the major findings, discusses the data and methodology, and explores the implications of the findings for actions that agencies may take to strengthen employee engagement.

Report Structure

The structure of this report is as follows. **Section I** provides a brief overview of the state of engagement conditions in the Federal government. To understand the importance of engagement and how conditions for engagement could be enhanced, the section includes a review of the research on the antecedents and consequences of employee engagement, giving special attention to OPM’s recently proposed definition and model of employee engagement. **Section II** describes the focus of the current analysis, including the methodology and measurement of key concepts and variables. **Section III** summarizes the key findings. **Section IV** concludes with promising practices that may improve employee engagement, particularly those that overlap with our five key drivers. Also included in this report are three appendices. **Appendix I** details the methodology and analytic techniques used to conduct the key

⁶ An in-depth discussion of the “People and Culture” section of the President’s Management Agenda may be found at <https://www.performance.gov/content/people-and-culture#overview>.

driver analysis. **Appendix II** lists the 45 Small/Independent Agencies that participated in the 2015 FEVS and whose employees were included in the Small Agencies (combined) analyses. **Appendix III** presents all of our OLS regression results and provides the standardized regression coefficients that were used to identify the key drivers.

Section I. Overview

What is Employee Engagement and Why Does it Matter?

Currently, no commonly accepted definition of employee engagement exists. Over the past four years, twelve major studies on employee engagement have been published by top research firms and each used different definitions (Castellano, 2015). While some of these emphasized attitudinal engagement (e.g., energy, vigor, or passion for the job or task), others focused on behavioral engagement (e.g., discretionary effort, intense dedication or absorption in the job, “going above and beyond”). A number of other studies used definitions that highlighted cognitive aspects of engagement (e.g., employees’ understanding of both the job’s demands and the work group’s strategy). This research also identified over 26 different key drivers. Without a shared definition or a common understanding of what employee engagement is, determining what drives it and what actions can be taken to foster or improve it is difficult.

To advance efforts to measure employee engagement and facilitate actions by agencies to strengthen it among the Federal workforce, OPM established a working group to define employee engagement.⁷ Drawing extensively upon prior theory and research, OPM developed the following definition: **“employee engagement is the employee’s sense of purpose that is evident in their display of dedication, persistence, and effort in their work or overall attachment to their organization and its mission”** (U.S. Office of Personnel Management, 2015, p.4). Similar to several preexisting definitions, OPM’s incorporates both job/work-focused and organizational-focused employee engagement definitions (Christian, Garza & Slaughter, 2011; Macey & Schneider, 2008; Schaufeli, Salanova, Gonzalez-Roma & Bakker, 2002; U.S. Office of Personnel Management, 2015, p.7). OPM’s definition also conceptualizes employee engagement as having attitudinal, behavioral, and cognitive components, which is quite consistent with many previous definitions. Developing this definition represents a critical first step in understanding the drivers and consequences of employee engagement at all levels within the Federal Government.

Despite the lack of a common definition, a great deal of agreement exists regarding the consequences or outcomes of employee engagement. Research on private and public organizations has found that increased levels of engagement, however defined, leads to improved individual and organizational performance. At the individual level, employees who are engaged are more innovative, productive, loyal, satisfied, team-oriented, committed to their organizations, and enjoy greater levels of personal well-being (Alfes, Truss, Soane, Rees, & Gatenby, 2010; Christian et al., 2011; Kahn, 1992; Mann & Wood, 2015; Saks, 2006; Schuck & Rocco, 2011; Soane et al., 2013; Taylor, 2012). In fact, one study reported that employees with the highest levels of engagement perform 20% better and are 87% less likely to leave the organization (Corporate Leadership Council, 2004). Higher levels of engagement have also been shown to be associated with lower levels of absenteeism (Soane et al., 2013).

⁷ To develop a common definition of employee engagement for the Federal workforce, the group used a multi-step process that incorporated empirical research and feedback from key stakeholders and technical experts. The methodology used to derive the definition is described in detail in the white paper entitled, *Engaging the Federal Workforce: How to Do It & Prove It*, which can be found on the Community of Practice page on the Unlocking Federal Talent website (www.unlocktalent.gov).

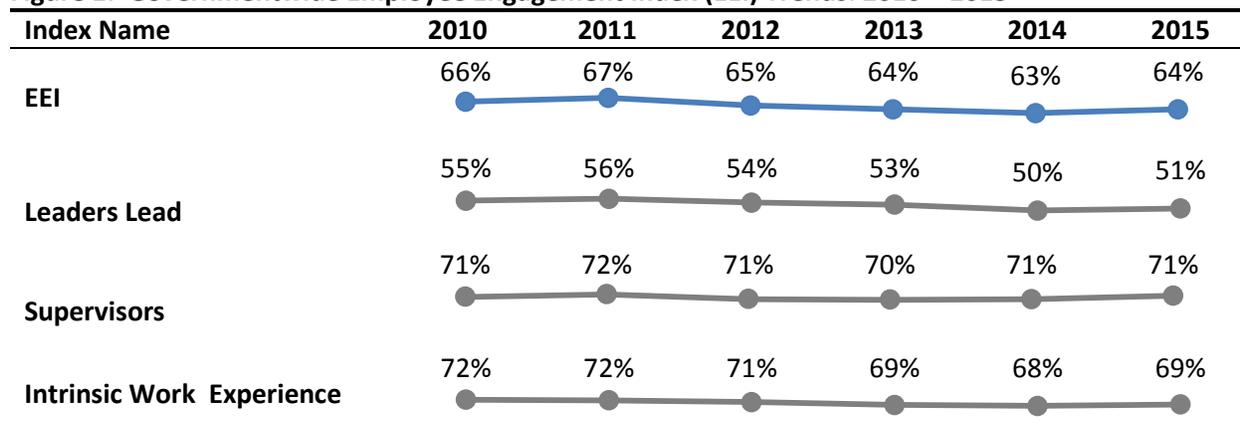
Similarly, employee engagement can be a significant factor in an organizations’ success through its impact on key organizational performance outcomes. Specifically, an engaged workforce can improve organizational productivity, financial performance, customer satisfaction, and morale (Corporate Leadership Council, 2004; Harter, Schmidt, & Hayes, 2002; Harter, Schmidt, Asplund, Killham, & Agrawal, 2010; Markon, Nakashima, & Crites, 2014; Salanova, Agut, & Peiro, 2005; U.S. House Committee on Oversight and Government Reform, 2014). Research has also shown engaged employees are more willing to put in extra effort, which is conducive to creating a social context that cultivates collegiality and teamwork (Christian et al., 2011). Conversely, Equal Employment Opportunity (EEO) complaints, safety incidents, work-related injuries, sick days, and theft are negatively correlated with a more engaged workforce (U.S. Office of Personnel Management, 2015).

In summary, employee engagement benefits organizations. It is a critical driver of organizational success, performance, and positive human capital management outcomes, such as recruitment and retention. The focus for Federal agencies, then, will be to develop and foster conditions that improve employee engagement and ultimately impact organizational performance and mission success.

The Engagement Potential of Federal Agency Workplaces

The Federal Employee Viewpoint Survey (FEVS) has been used to assess the engagement potential of Federal workplaces since 2010. [Figure 1](#) depicts governmentwide Employee Engagement Index (EEI) trends from 2010 to 2015. In 2010, scores on the overall EEI were 66% and increased to a high of 67% in 2011. However, from 2011 to 2014, scores on the EEI declined to a governmentwide low of 63%. Given the general downward trends and the potential wide-ranging importance of an engaged Federal workforce for the efficiency and effectiveness of the Federal Government, efforts to build and sustain engaging Federal workplaces are vital.

Figure 1. Governmentwide Employee Engagement Index (EEI) Trends: 2010 – 2015



Source: Federal Employee Viewpoint Survey (FEVS)

NOTES:

1. The EEI was first introduced in 2010.
2. These numbers represent the percent positive scores for the years shown.

[Figure 1](#) also shows the scores for the three EEI Subindices: Leaders Lead, Supervisors, and Intrinsic Work Experience over time. *Leaders Lead* focuses on the integrity of senior leadership and their behaviors, such as communication and workforce motivation. *Supervisors* emphasizes the interpersonal relationship between the employee and his/her supervisor, including concern for employee development, respect, trust and confidence. *Intrinsic Work Experience* reflects employees' feelings of motivation and competency related to their role in the workplace, such as sense of accomplishment and their perception of their skill usage. As revealed in the figure, employees' perceptions of their senior leaders consistently received the lowest scores. Moreover, since 2011, the Leaders Lead Subindex evidenced the greatest decrease and accounted for much of the governmentwide decline in the EEI overall. In contrast, the Supervisors and Intrinsic Work Experience Subindices have remained relatively strong.

[Table 5](#) displays EEI scores for selected groups of Federal employees. Pinpointing whether, and to what extent, engagement varies across different groups of employees can help agency leaders determine how best to focus their recruitment, retention, and engagement efforts. For instance, [Table 5](#) shows employees without supervisory responsibilities are less engaged than those with more supervisory responsibilities. Of the different groups of Federal employees shown, the largest variation in EEI scores is between those without supervisory responsibilities and those in the SES category. [Table 5](#) also reveals those who telework have consistently higher EEI scores than those who do not. Lastly, employees who make up the largest share of the Federal workforce—that is, those who have been with their agencies for more than 10 years—have consistently lower EEI scores than those who have worked for their agencies less than four years. Knowing that employees without supervisory responsibilities, who do not telework, and who have been employed in their agencies over 10 years may be among those employees who are less engaged helps agency leaders decide what resources and actions may be needed to engage and retain these employees and, ultimately, improve individual and organizational performance.

Table 5. EEI Scores for Selected Groups of Employees

	2010	2011	2012	2013	2014	2015
Governmentwide	66%	67%	65%	64%	63%	64%
Generations						
Millennials	---	---	66%	65%	63%	65%
Generation X	---	---	65%	64%	62%	63%
Baby Boomers	---	---	65%	64%	63%	64%
Traditionalists	---	---	69%	70%	68%	68%
Supervisory Status						
Non-Supervisor	65%	65%	64%	63%	62%	62%
Supervisor/Management	73%	73%	72%	71%	69%	71%
Senior Executive	82%	82%	82%	81%	81%	82%
Military Service						
No Service	---	---	66%	65%	64%	65%
Some Military Service	---	---	65%	63%	62%	63%
Agency Tenure						
< 4 years	71%	70%	69%	68%	67%	69%
4–10 years	63%	65%	63%	62%	62%	63%
> 10 years	66%	66%	65%	64%	63%	64%
Telework Status						
Telework	---	---	71%	69%	68%	69%
Do not telework	---	---	64%	63%	61%	62%
Mission-Critical Occupations						
Auditor	69%	69%	71%	69%	69%	70%
Contract Specialist	70%	70%	68%	67%	65%	66%
Economist	71%	69%	70%	69%	69%	73%
HR Specialist	70%	70%	67%	67%	66%	67%
IT Specialist	65%	65%	65%	63%	63%	64%

Source: Federal Employee Viewpoint Survey (FEVS)

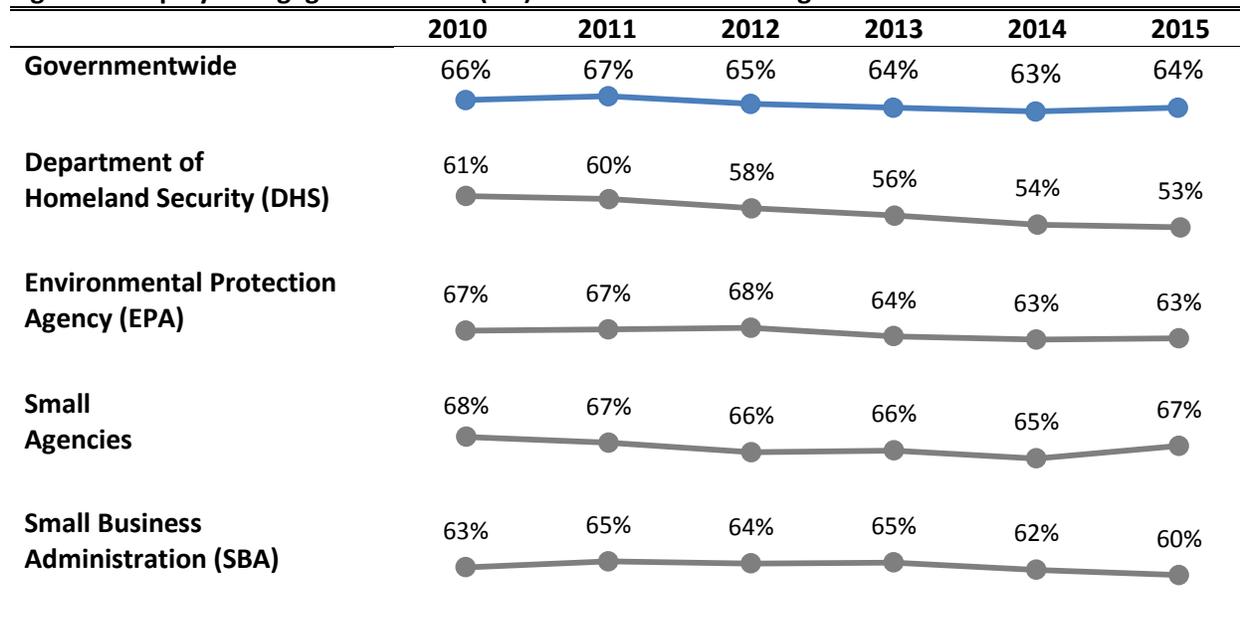
NOTES:

1. These numbers represent the percent positive scores for the years shown. Within each subset of the Federal workforce, the highest scores for each year are **bolded**.
2. --- indicates data are not available.

Since governmentwide trends may mask patterns within individual agencies, we selected several agencies based upon their sizes (e.g., number of employees who responded to the 2015 FEVS) and/or variation in EEI scores to examine. [Figure 2](#) displays the EEI scores for the Small Agencies (combined) and for three Departments/Large Agencies for 2010 – 2015. These Departments/Large Agencies were: 1) Department of Homeland Security (DHS), 2) Environmental Protection Agency (EPA), and 3) Small Business Administration (SBA). With the exception of one year—from 2013 to 2014 in which the EEI scores declined for all of the selected agencies—the figure shows the variation in EEI scores across these agencies as well the varied patterns of increases and decreases. Being able to identify the factors that

drive higher as well as lower levels of engagement is fundamental to advancing efforts to systematically strengthen employee engagement throughout and across the Federal Government.

Figure 2. Employee Engagement Index (EEI) Trends for Selected Agencies: 2010 - 2015



Source: Federal Employee Viewpoint Survey (FEVS)

NOTES:

1. These numbers represent the percent positive scores for the years shown.
2. Agencies were selected based upon variation in their sizes (e.g., number of employees who responded to the 2015 FEVS) and/or EEI scores. The number of employees who responded for the three Department/Large Agencies were as follows: DHS—43,090; EPA—4,456; and SBA—1,303. For the Small/Independent Agencies, the average number of employees that responded was 114.
3. Due to the small number of employees who work in many of the Small/Independent Agencies, the analyses were conducted with the employees from all 45 participating agencies as one group. [Appendix II](#) contains the list of these agencies.

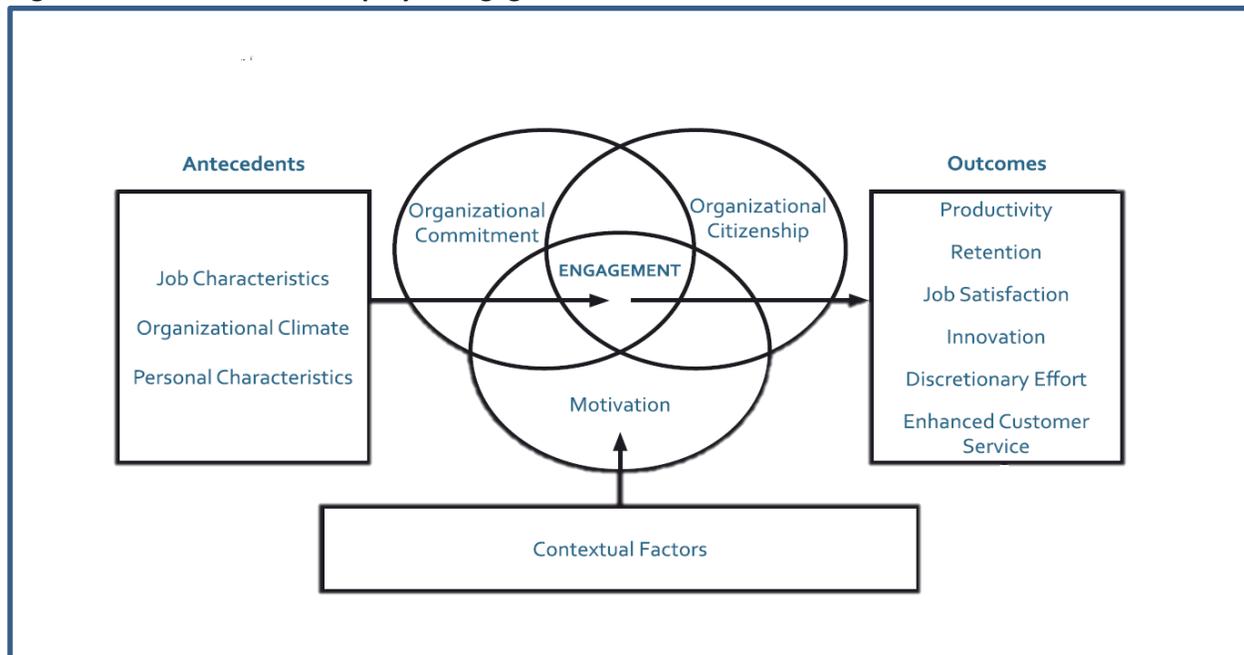
Identifying the Drivers of Employee Engagement

An emerging body of theory and research has identified the antecedents—or drivers—of employee engagement (Castellano, 2015; Christian et al., 2011; Crawford, LePine, & Rich, 2010; Crawford, Rich, Buckman & Bergeron, 2014; Hirschfeld & Thomas, 2008; Inceoglu & Warr, 2011; Saks, 2006; Shuck & Rocco, 2011; U.S. Merit Systems Protection Board, 2012). Collectively, this research suggests factors such as job characteristics, organizational climate, and personal characteristics drive employee engagement. Identifying the drivers of engagement is not only key to determining which factors impact engagement, and how, but also to pinpointing actions that agencies can take to develop a work environment that engages employees and achieves mission success.

OPM's Model of Employee Engagement

Drawing substantially upon prior theory and research, the OPM working group proposed a model of employee engagement that identified and explained underlying antecedents and outcomes. Similar to other models, OPM's model emphasizes the impact of job characteristics, organizational climate, and personal characteristics on employee engagement. Unlike these other models, however, OPM's model underscores the significance of contextual factors within the Federal Government that may also uniquely contribute to levels of engagement among Federal employees (U.S. Office of Personnel Management, 2015). [Figure 3](#) depicts this model.

Figure 3. OPM's Model of Employee Engagement



Source: U.S. Office of Personnel Management (2015), *Engaging the Federal Workforce: How to Do It & Prove It*, p.9.

Antecedents

Job Characteristics. Organizational research on job characteristics has shown the nature of the **work/job itself** is directly related to engagement. More specifically, this research has found job characteristics, including demands, resources, and fit, play a vital role in the development of engagement (Bakker & Demerouti, 2007; Bakker, Demerouti, de Boer, & Schaufeli, 2003; Castellano, 2015; Demerouti, Bakker, & Schaufeli, 2001; Fried & Ferris, 1987; Macey, Schneider, Barbera, & Young, 2009; Salanova, Agut, & Peiro, 2005; Vanam, 2009). Job demands are defined as those physical, social, or organizational aspects of the job that require sustained physical and/or psychological effort by the employee. Some examples of job demands are high work pressure, responsibility overload, poor work environment, and reorganization problems. On the other hand, job resources refer to those physical, psychological, social, or organizational aspects of the job that reduce demands, are functional in achieving work goals, or stimulate personal growth and development. Some examples of job resources are pay, career opportunities, job security, supervisor and/or coworker support, role clarity, skill variety, job control (autonomy), task significance, and complexity. Job fit, whereby an employee sees their

personal values and goals align with organizational values, is also key because an individual will be more invested in their role performance and thus more engaged (Resick, Baltes, & Shantz, 2007).

Organizational Climate. Aspects of the workplace reflect the organization's **culture**, influence employee behavior, and are captured in employee perceptions. Organizations in which the workplace culture is defined by the psychological conditions of mutual trust, respect, support, and safety with managers and co-workers are more likely to have engaged employees (Castellano, 2015; Crawford et al., 2010; Kahn, 1990; Maslach et al., 2001; Saks, 2006; Shuck & Rocco, 2011; Shuck & Wollard, 2010). Strenuous physical conditions and poor working conditions (e.g., noise and health hazards) are more likely to result in negative experiences while at work, thereby decreasing engagement (Humphrey, Nahrgang, & Morgeson, 2007; May, Gilson, & Harter, 2004; U.S. Office of Personnel Management, 2015). Beyond financial compensation and benefits, key retention and engagement factors associated with the workplace culture include work/life balance policies and practices, a diverse and inclusive environment, and learning and development opportunities (Lockwood, 2007; Saks & Gruman, 2011; Shuck & Wollard, 2010; Volpone, Avery, & McKay, 2012). According to Quantum Workforce (2013), training and development opportunities, in some instances, were even more crucial to employee engagement than direct financial compensations or spontaneous cash bonuses.

The following are three additional aspects of the organizational climate that have been shown to impact employee engagement:

Management and Senior Leadership. Another critical aspect of the organizational climate is management/leadership. DeRue, Nahrgang, Wellman, & Humphrey (2011), Guest & Conway (2002), and Judge & Piccolo (2004) reported that managerial/leadership styles that value collaboration, cooperation, team-building, and relationship-maintaining behaviors have a direct, positive impact on employee engagement and group performance. Additionally, managers/leaders who stress the importance of communication as it relates to daily work, who encourage and listen to employee feedback, and who emphasize employee well-being over tasks, retain and engage employees who are more likely to perform their jobs with energy and enthusiasm (Macey et al., 2009; Vorhauer-Smith, 2013). Leaders also play a key role by defining and communicating the organization's vision, purpose, and goals. Senior managers/leaders who support suggestions and change initiatives from below not only enhance employee engagement but also have a positive impact on organizational success (Ashford, Rothbard, Piderit, & Dutton, 2008).

Performance Management Practices. There is also evidence to suggest that specific performance management practices may shape employees' perceptions of their organizations and improve employee engagement (Mone, Eisinger, Guggenheim, Price, & Stine, 2011; Serrano & Reichard, 2011; Trahan, 2009; U.S. Office of Personnel Management, 2015). Specifically, this research points to practices that include: 1) offering employee development opportunities, 2) linking an employee's job with the organization's mission or strategic goals, 3) providing clear, timely, and constructive performance feedback, and 4) establishing a fair and meaningful system of rewards and recognition. In comparisons of organizations with low and high engagement, the most differentiating factor was an effective and widely used performance management system that contained contingencies for dealing with poor performers and rewarding exceptional performers (Saks & Gruman, 2011; Lavigna, 2014). Kahn (1990), Lockwood (2007), and Maslach, Schaufeli, & Leiter (2001) suggested that rewards and recognition, including non-monetary awards for meaningful work, are important to

engagement. Failure to offer such types of benefits, in contrast, may contribute to employee burnout.

Perceptions of Fairness and Inclusion. One final, yet vital, element of the organizational climate that matters for employee engagement is perceptions of fairness and inclusion. Research demonstrates that employees' perceptions of fairness and equitable treatment is a core driver of retention, engagement, and performance (Saks, 2006; Volpone et al., 2012). Conversely, perceptions of unfairness in processes, interactions, and outcomes (e.g., pay, promotion, development, performance appraisals, etc.) are barriers to employee engagement and contribute to turnover, absenteeism, EEOC complaints, and poor performance (Colquitt, Conlon, Wesson, Porter, & Ng, 2001; Colquitt & Zipay, 2015). Within the Federal Government, Merit System Principles (5 USC § 2301) exist to ensure selection, promotion, and retention procedures are performance-related and employees are protected from arbitrary actions and political coercion.⁸ These principles also identify mechanisms to correct unfair and biased practices while protecting employees from reprisal. Actions taken by Federal agencies targeting engagement must be consistent with merit system principles to ensure employees are managed fairly, effectively, and efficiently.

Personal Characteristics. While research has clearly shown employees who are passionate about their work are more likely to feel engaged, studies have been less likely to explain why some employees have passion and others do not (Castellano, 2015). Christian et al. (2011) and Kahn (1990) suggested certain personality traits have been linked to engagement. These traits include a personality that is more likely to perceive potential setbacks as challenges, a positive predisposition, a proactive personality, and conscientiousness. Other characteristics, such as self-esteem, self-worth, self-confidence, and self-efficacy, have also been shown to increase personal initiative at work and to increase an employee's confidence in his or her performance abilities (Inceoglu & Warr, 2011; Hirschfeld & Thomas, 2008).

Contextual Factors within the Federal Government. In addition to job characteristics, organizational climate, and individual characteristics, OPM (2015) acknowledged the importance of examining the unique context within which Federal employees work. More specifically, Federal employees are typically motivated more by a sense of altruism and commitment to public service than by financial incentives (Trahan, 2009; U.S. Office of Personnel Management, 2015). Other contextual factors, such as job security, benefits, and advancement opportunities within the General Schedule (GS) pay schedule, may also positively affect engagement among Federal workers. Conversely, several notable contextual factors may undermine engagement among Federal employees. For instance, the fiscal environment is difficult to predict and often beyond the control of employees and their leaders. Continuing resolutions, sequestration, furloughs, and highly politicized debates about the value of Federal employees have the potential to undermine employee engagement. Therefore, it is important to carefully consider the role of such contextual factors when targeting employee engagement within the Federal Government.

Drivers of Engagement for Different Groups of Employees

An important prerequisite for improving engagement is to understand whether and how engagement drivers vary across different subsets of the Federal workforce. While job characteristics, organizational climate, personal characteristics, and contextual factors are important to employee engagement, certain

⁸ For a full listing of Merit System Principles, please see <http://www.mspb.gov/meritsystemsprinciples.htm>.

factors may be more important for different groups of employees. In this way, a “one size fits all” model of employee engagement may not be the most effective. Understanding engagement trends and identifying the drivers of engagement for different groups of employees is necessary for strengthening engagement overall.

Research shows varying levels of engagement across different groups of employees (Gallup, 2013). This includes:

Generations. Shifting demographics and the impact of entering Millennials and exiting Baby Boomers are having an enormous impact on organizations’ ability to attract, retain and motivate talent (Aon, 2014). As shown in [Table 5 \(on page 6\)](#) and according to research by Gallup (2013), generations at the beginning and approaching the end of their careers tend to be more engaged than those in the middle of their careers. Traditionalists tend to have the highest levels of engagement, followed by Millennials. The two middle generations, Baby Boomers and Generation X, have similar levels of engagement. Despite their higher engagement levels, Millennials are the most likely of all generations to say they will leave their company in the next 12 months (Gallup, 2013). However, engaging these employees can minimize chances of turnover.

Supervisory Status. In addition, research has shown that levels and drivers of engagement vary by job status (also see [Table 5](#)). For example, Aon (2014) found engagement levels for the average front line nonsupervisory employee is on par with global engagement levels (at 61%) and tends to be lower than employees with supervisory responsibilities. In contrast, employee engagement levels are highest among executives and senior management. These senior leaders are also engaged by different things than the average employee is—most notably, by a culture focused on people and by their other senior leadership peers. Relatedly, this study revealed that in order to engage others, leaders must first be engaged themselves. Nevertheless, these drivers provide some insight into the different areas of focus required to engage leadership groups (Aon, 2014).

Military Service. Despite the growing amount of data and studies on employee engagement, there is a paucity of research on engagement and employees with military service. According to Kenexa’s 2012 World Trends report on employee engagement, the military has the most engaged employees of any sector in the UK because of strong leadership, pride in the organization, and inspired decision-making (Kenexa, 2012). However, it is unclear whether these trends translate into the U.S. government sector where military and civilian personnel must be integrated into one cohesive unit. Due to the differences in background and training, it is likely that military and non-military personnel view their respective organizations differently, have different experiences, and report different levels of engagement, despite having the same leaders and a common mission (Lyons, Alarcon, Nelson, & Tartaglia, 2009). As shown in [Table 5](#), employees with some military service have lower EEI scores than employees with no military service. With Executive Order 13518, which has facilitated and increased the hiring of employees with military service since 2009, government organizations may need to place greater emphasis on ensuring employees with military experience are engaged to ensure optimal performance and adequate retention of this highly skilled group of employees.

Tenure. Another factor to consider when assessing employee engagement is the employee lifecycle. As already noted, employee engagement typically starts high (at the point of hiring) and declines with tenure— dropping 9 percent in the first year and more than 12 percent over five years (Watson Wyatt Worldwide, 2009; also see [Table 5](#); Gallup, 2013). Conversely, the level of engagement may wane as employees experience setbacks in their career (e.g., job reassignment), events occur within the organization (e.g., Reduction in Force), or events occur outside the organization (e.g., sequestration). Events external to the organizational environment may also include non-work related personal events, such as relocation of a spouse, birth of a child, or illness of a loved one. Thus, engagement should be evaluated in the context of the employee’s lifecycle as well as the context in which the organization is operating.

Work/Life Balance. Trends are showing that there is an increase in demand for work/life balance. For many employees, it is becoming increasingly important to work for organizations that are family-friendly and allow for a division between work and family responsibilities. Additionally, given technologies that provide 24/7 access, it is becoming increasingly difficult for employees to balance work and non-work priorities, which may impact levels of engagement. As previously revealed in [Table 5](#), employees who telework have higher EEI scores than employees who do not telework. Also, Lockwood (2007) found employee engagement decreases for organizations overly focused on getting ahead and devaluing work/life issues. These emerging priorities make it necessary for organizations to better understand what drives engagement for all employees within an organization in order to meet these needs (Lockwood, 2007).

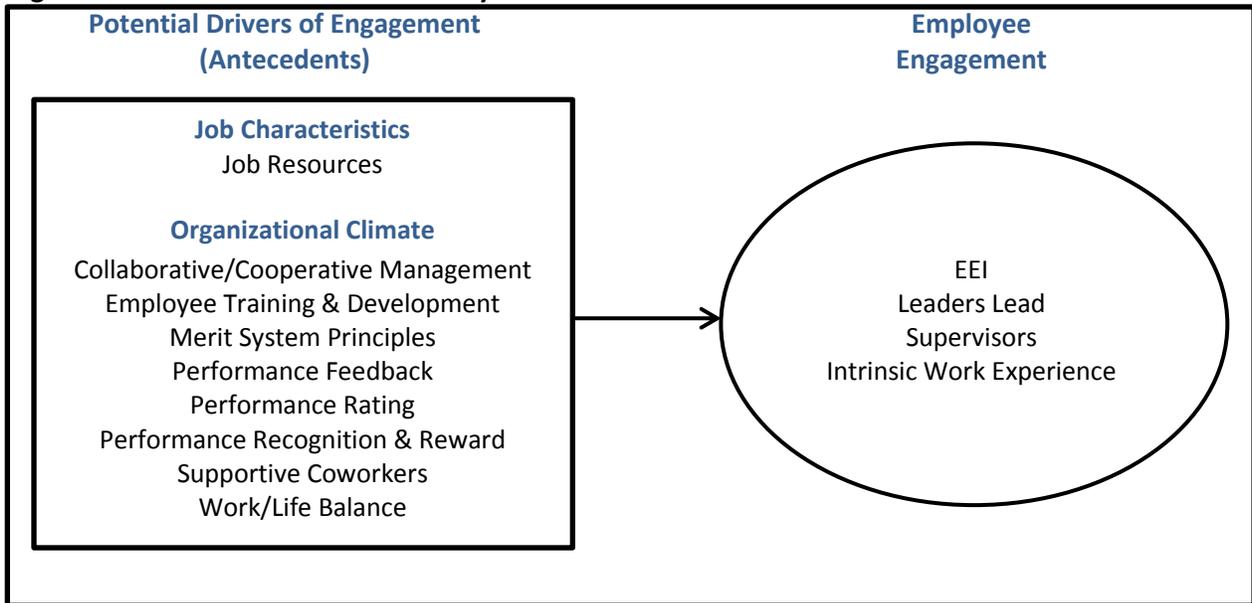
Occupations. Recent Gallup (2013) results show managers, executives, physicians, nurses, and teachers are the most engaged in their jobs, while service, transportation, and manufacturing/production workers are the least engaged. Similar to these Gallup results, [Table 5](#) reveals engagement levels vary across occupations. More specifically, IT Specialists have lower EEI scores than the other mission-critical occupations (MCOs).⁹ Since these are occupations where staffing gaps could affect the ability of agencies to carry out their mission, it is critically important to identify the drivers of engagement across different occupations within the Federal Government.

⁹ OPM and the Chief Human Capital Officer (CHCO) Council identified six occupation areas of concern: auditor, contract specialist/acquisitions, economist, human resource specialist, information technology/cybersecurity, and the Science, Technology, Engineering, and Mathematics (STEM) functional community (<http://www.gao.gov/products/GAO-15-223>). In the current analysis, we only examined five of these MCOs.

Section II. Key Driver Analysis

While using data from the FEVS alone limits our ability to fully test OPM’s model of employee engagement (see [Figure 3](#)), we were able to examine certain elements of Job Characteristics and Organizational Climate. [Figure 4](#) visually displays the model we tested in the current key driver analysis. Identifying the antecedents of employee engagement¹⁰ is fundamental to determining what leads to high or low levels of engagement, and ultimately, the actions agencies may take to improve engagement.

Figure 4. Model Tested in Current Analysis



Measurement of Factors in the Model

Potential Drivers of the EEI and Three Subindices

To identify potential drivers of the EEI, we first reviewed existing theory and research on employee engagement. Based upon this review, we identified 29 FEVS items that corresponded to topics covered in the engagement literature, actionable by agency leaders, and were not already included in the EEI. We then conducted confirmatory factor analyses to examine the overall statistical fit and robustness of items and models for the potential drivers. This process resulted in 23 FEVS items that were consistent with theory, actionable, and statistically sound. Using these 23 items, we were able to identify eight factors and a single item. These nine factors were: 1) *Collaborative/Cooperative Management* [2 items]; 2) *Employee Training & Development* [2 items]; 3) *Job Resources* [3 items]; 4) *Merit System Principles* [3 items]; 5) *Performance Feedback* [3 items]; 6) *Performance Rating* [3 items]; 7) *Performance Recognition & Reward* [4 items]; 8) *Supportive Coworkers* [2 items]; and 9) *Work/Life Balance* [1 item].¹¹

¹⁰ [Appendix I](#) provides details on how the antecedents were chosen and validated.

¹¹ With the exception of the Work/Life Balance item, we created composite measures consisting of multiple FEVS items to capture these broad and multifaceted concepts. Such composite measures provide more consistent and robust estimates than single item measures.

Table 6 provides a summary of these potential drivers and the FEVS items that were used to measure each.

Table 6. Summary of Potential Drivers Derived from the FEVS

Potential Drivers	Description	FEVS Items
Job Characteristics		
Job Resources [3 items]	<ul style="list-style-type: none"> Ensures sufficient materials, knowledge, personnel, skills, information and work distribution to complete the job 	<ul style="list-style-type: none"> I have enough information to do my job well. (Q2) I have sufficient resources to get my job done. (Q9)* My workload is reasonable. (Q10)*
Organizational Climate		
Collaborative/ Cooperative Management [2 items]	<ul style="list-style-type: none"> Promotes and supports collaborative communication and teamwork in accomplishing goals and objectives 	<ul style="list-style-type: none"> Managers promote communication among different work units. (Q58) Managers support collaboration across work units to accomplish work objectives. (Q59)
Employee Training & Development [2 items]	<ul style="list-style-type: none"> Targets opportunities for employees to improve skills and enhance professional development 	<ul style="list-style-type: none"> I am given a real opportunity to improve my skills in my organization. (Q1)* My training needs are assessed. (Q18)
Merit System Principles [3 items]	<ul style="list-style-type: none"> Supports fairness and protects employees from arbitrary actions, favoritism, political coercion and reprisal 	<ul style="list-style-type: none"> I can disclose a suspected violation of any law, rule or regulation without fear of reprisal. (Q17)* Arbitrary action, personal favoritism and coercion for partisan political purposes are not tolerated. (Q37)* Prohibited Personnel practices are not tolerated. (Q38)*
Performance Feedback [3 items]	<ul style="list-style-type: none"> Provides for meaningful, worthwhile, and constructive performance conversations with supervisors 	<ul style="list-style-type: none"> Discussions with my supervisor about my performance are worthwhile. (Q44) My supervisor provides me with constructive suggestions to improve my job performance. (Q46)* In the last six months, my supervisor has talked with me about my performance. (Q50)
Performance Rating [3 items]	<ul style="list-style-type: none"> Ensures employees are held accountable and performance is evaluated and rated 	<ul style="list-style-type: none"> My performance appraisal is a fair reflection of my performance. (Q15) I am held accountable for achieving results. (Q16) In my most recent performance appraisal, I understood what I had to do to be rated at the next performance level. (Q19)

Table 6., Continued

Potential Drivers	Description	FEVS Items
Performance Recognition & Reward [4 items]	<ul style="list-style-type: none"> ▪ Supports an effective recognition and reward system in which supervisors/managers/leaders recognize outstanding employee contributions and performance 	<ul style="list-style-type: none"> ▪ Promotions in my work unit are based on merit. (Q22) ▪ In my work unit, steps are taken to deal with a poor performer who cannot or will not improve. (Q23) ▪ In my work unit, differences in performance are recognized in a meaningful way. (Q24)* ▪ Awards in my work unit depend on how well employees perform their jobs. (Q25)
Supportive Coworkers [2 items]	<ul style="list-style-type: none"> ▪ Establishes supportive coworker relationships that involve cooperation and information sharing to perform job 	<ul style="list-style-type: none"> ▪ The people I work with cooperate to get the job done. (Q20)* ▪ Employees in my work unit share job knowledge with each other. (Q26)
Work/Life Balance [1 item]	<ul style="list-style-type: none"> ▪ Highlights supervisors' support of employees' needs to balance work and life responsibilities 	<ul style="list-style-type: none"> ▪ My supervisor supports my need to balance work and other life issues. (Q42)*

NOTES:

1. Qs indicate FEVS question numbers.
2. * indicates item was also examined in GAO's (2015) key driver analysis.

Employee Engagement Index (EEI)

To examine employee engagement among the Federal workforce, we used the Employee Engagement Index (EEI), derived from the Federal Employee Viewpoint Survey (FEVS). A limitation of the survey is that it does not currently contain a direct measure of employee engagement. As shown in [Table 7](#) however, the FEVS does measure the conditions that lead to employee engagement through a subset of 15 items, captured in three subindices: *Leaders Lead* [5 items], *Supervisors* [5 items], and *Intrinsic Work Experience* [5 items]. These subindices reflect specific aspects of the work environment that lead to or are conducive for higher employee engagement. Identifying the conditions that lead to engagement is a fundamental first step in strengthening engagement and, ultimately, improving individual and organizational performance.

Table 7. Employee Engagement Index (EEI)

Subindices	Description	FEVS Items
Leaders Lead [5 items]	<ul style="list-style-type: none"> Reflects the employees' perceptions of the integrity of leadership, as well as leadership behaviors such as communication and workforce motivation 	<ul style="list-style-type: none"> In my organization, senior leaders generate high levels of motivation and commitment in the workforce. (Q53) My organization's senior leaders maintain high standards of honesty and integrity. (Q54) Managers communicate the goals and priorities of the organization. (Q56) Overall, how good a job do you feel is being done by the manager directly above your immediate supervisor? (Q60) I have a high level of respect for my organization's senior leaders. (Q61)
Supervisors [5 items]	<ul style="list-style-type: none"> Reflects the interpersonal relationship between worker and supervisor, including trust, respect, and support 	<ul style="list-style-type: none"> Supervisors in my work unit support employee development. (Q47) My supervisor listens to what I have to say. (Q48) My supervisor treats me with respect. (Q49) I have trust and confidence in my supervisor. (Q51) Overall, how good a job do you feel is being done by your immediate supervisor? (Q52)
Intrinsic Work Experience [5 items]	<ul style="list-style-type: none"> Reflects the employees' feelings of motivation and competency relating to their role in the workplace 	<ul style="list-style-type: none"> I feel encouraged to come up with new and better ways of doing things. (Q3) My work gives me a feeling of personal accomplishment. (Q4) I know what is expected of me on the job. (Q6) My talents are used well in the workplace. (Q11) I know how my work relates to the agency's goals and priorities. (Q12)

NOTE: Qs indicate FEVS question numbers.

Data and Methods

Data for the current analysis were largely derived from the 2015 FEVS. However, when indicated, we also used 2013 and 2014 FEVS data to test several models. The FEVS is a Web-based, self-administered survey of full- and part-time, permanent non-seasonal employees of Departments, Large, Small and Independent Agencies. The survey provides government employees with the opportunity to share their perceptions of their work experiences, their agencies, and their leaders. These employees constitute full- and part-time, short- and long-tenured, headquarters and field, military and civilian personnel, individuals living with disabilities, varying educational backgrounds, members of the lesbian, gay, bisexual, and transgender (LGBT) communities, and multiple racial and ethnic groups—all who work in a vast array of occupations that make up our Federal workforce. A detailed discussion of the data, sampling, analytic procedures, and measurement of all key factors are included in [Appendix I](#).

Section III. Findings

All key driver models were estimated using Ordinary Least Squares (OLS) multiple regression analysis. Using this technique, we analyzed the impact of the nine potential drivers on the EEI and the three EEI Subindices, controlling for agency, supervisory status, gender, minority status, age group, and agency tenure. This part of the report provides a summary of the major findings from the key driver analysis. [Appendix III](#) presents the OLS regression results, including the standardized regression coefficients.

Key Drivers of the EEI—Governmentwide¹²

Based upon the analyses of the 2015 governmentwide FEVS data, we identified five key drivers of the EEI.

#1. Performance Feedback

An essential component of the Performance Management Cycle outlined by OPM,¹³ Performance Feedback was the strongest driver of the EEI. This driver focuses attention on the worthwhile and constructive performance conversations between supervisors and employees. We found that employees who perceived their performance discussions with their supervisors as worthwhile, who believed the suggestions received would improve their job performance, and who had these conversations within the past six months, had higher mean EEI scores than employees who did not.

To be effective, performance feedback conversations should focus on what employees are doing well and what needs improvement. These conversations need to be clear, specific and reinforce organizational/work goals (GAO, 2003) and should occur frequently (U.S. Office of Personnel Management, Director's Guidance, 1/12/2016). The FEVS does not directly measure the frequency of these performance conversations, only asking about feedback that may have taken place within the past six months. Nevertheless, promising practices suggest performance feedback should occur frequently. Effective performance feedback is more than a one-time effort that occurs as part of the standard annual employee performance appraisal. Employees feel most empowered and enabled to succeed and grow when supervisors involve them in continuous dialogue on: position expectations; alignment of position responsibilities and agency mission; progress toward achieving expectations; and areas of strength or needs for improvement (U.S. Office of Personnel Management, Director's Guidance, 1/12/2016).

#2. Collaborative/Cooperative Management

Collaborative/Cooperative Management was the second strongest driver. Collaborative/Cooperative Management refers to a management style that promotes and supports collaborative communication and teamwork in completing projects and accomplishing goals and objectives. Our findings show

¹² Given the large sample sizes for the governmentwide analyses, all of the coefficients for the drivers in the model were statistically significant. Accordingly, we established a statistical threshold in determining whether an independent variable was a "key driver." We considered factors to be "key drivers" of the EEI and the subindices if they had a standardized regression coefficient of 0.10 or above, indicating on average each standard deviation increase in the factor was associated with at least 0.10 standard deviation increase in the EEI.

¹³ An overview of the Performance Management Cycle can be found at <https://www.opm.gov/policy-data-oversight/performance-management/performance-management-cycle/>.

employees who believed their managers promoted communication and collaboration among and across the different work units averaged higher EEI scores than employees who did not believe their managers promoted and supported such collaborative efforts. Previous research has shown that building and fostering a culture of collaboration enriches the organization and the entire workforce (Castellano, 2015). Working together toward a common goal creates a sense of shared values and identity, and strengthens relationships among employees and teams. In this way, collaboration leads to innovation, higher levels of productivity, and organizational success. Also, collaborative work environments give employees the opportunity to show up and contribute, have a voice, and feel like they are a part of a community. In this sense, collaboration builds relationships (e.g., manager-employee and employee-employee) that drive employee engagement.

#3. Merit System Principles

Merit System Principles was the third strongest driver of the EEI. Merit System Principles refer to Federal personnel management practices of treating all Federal job applicants and employees equitably when hiring and promoting as well as protecting them from partisan influence.¹⁴ In contrast to employees who do not, we found employees who feel they can disclose violations without fear of reprisal and who feel prohibited personnel practices, such as discrimination, arbitrary action, favoritism, and political coercion, were not tolerated had higher average EEI scores. These results are consistent with prior research findings that show improved job satisfaction, commitment, and employee engagement occurs when organizational procedures and practices make employees feel they are being treated more fairly (Kim, Lin, & Leung, 2015).

#4. Employee Training & Development

The fourth strongest driver was Employee Training & Development. This factor focuses on providing opportunities for employees to develop and hone work skills that contribute to performance. We found that employees who believe they are given a real opportunity to improve their skills within their organizations and whose training needs are assessed average higher EEI scores than employees who perceive having less opportunity to improve and to have their training needs assessed. Employee training and development can greatly enhance employee engagement by nurturing talent and helping employees learn new things and improve their performance. Research shows most people want to feel they are doing a good job and are valued by their organization for the part they play. Also, few employees like to remain static in a work environment and many want to see development potential and opportunities in their roles and organizations (Kahn, 1990). Since an engaged employee who possesses the necessary skills, knowledge, and expertise can have wide-ranging organizational impact, and learning and development can improve engagement, agencies should view expenditures on employee training and development as an investment in organizational performance and success.

#5. Work/Life Balance

The fifth and final factor that we identified as a key driver of the EEI was Work/Life Balance. Work/Life Balance refers to supervisor support of employees' needs to balance work and non-work priorities. Our findings show employees who believe their supervisor supports their need to balance work and other life issues have higher EEI scores than employees who believe they have less supervisor support. At the core of human capital management in recent years, Grzywacz & Carlson (2007) and Shankar &

¹⁴ For a complete description of the Merit System Principles, please see 5 U.S.C. 2301.

Bhatnagar (2010) also find those organizations that have Work/Life Balance policies in place may be a powerful leverage point for promoting employee engagement as well as individual and organizational effectiveness.

Key Drivers of the EEI for Subsets of Federal Employees

While understanding and identifying the key drivers of the EEI Governmentwide is important, it is also critical to understand and identify the key drivers of the EEI for different groups that make up the Federal workforce. Doing so can enable agency leaders to consider how employees experience their working environments differently and help guide efforts to strengthen employee engagement efforts for different groups.

Using OLS multiple regression, we examined the impact of the nine factors on the EEI across six different groups of Federal employees. These groups were: 1) generations; 2) supervisory status; 3) military service; 4) agency tenure; 5) telework status; and 6) mission-critical occupations (MCOs). For each group, separate regression models were estimated controlling for agency, supervisory status, gender, minority status, age group, and agency tenure, except where it was inappropriate. For example, for the model by generations, there was no control for age group. Similarly, for the models examining the relationships by supervisory status and by agency tenure, we did not include a control for supervisory status or agency tenure, respectively.

[Table 8](#) provides a summary of these results. As shown, the top five key drivers for the selected groups of Federal employees were generally consistent with the results of our Governmentwide analysis and primarily center on Performance Feedback, Collaborative/Cooperative Management, Merit System Principles, Employee Training & Development, and Work/Life Balance. There were a few exceptions as shown in [Table 8](#) (shaded in gray). For example, Work/Life Balance was not a key driver for Senior Executive employees nor was it among the top five key drivers for Auditors. Despite differences, the results from our analysis revealed more commonalities in the key drivers of the EEI for different groups of Federal employees than differences.

Table 8. Summary of OLS Regression Results for the EEI by Selected Groups of Federal Employees

	POTENTIAL DRIVERS								
	Performance Feedback	Collaborative/ Cooperative Management	Merit System Principles	Employee Training & Development	Work/ Life Balance	Job Resources	Performance Recognition & Reward	Performance Rating	Supportive Coworkers
SELECTED GROUPS									
<i>Generations</i>									
Traditionalists	2	1	3	5	3	6	NA	NA	NA
Baby Boomers	1	1	3	4	5	NA	NA	NA	NA
Generation X	1	2	3	4	5	NA	NA	NA	NA
Millennials	1	2	4	3	5				
<i>Supervisory Status</i>									
Non-supervisor	1	2	3	4	5	NA	NA	NA	NA
Supervisor	1	2	3	4	5	6	NA	NA	NA
Senior Executive	1	2	3	4	NA	NA	NA	NA	NA
<i>Military Service</i>									
No Service	1	2	3	4	5	6	NA	NA	NA
Some Service	1	2	3	4	5	NA	NA	NA	NA
<i>Agency Tenure</i>									
< 4 years	1	2	3	4	5	NA	NA	NA	NA
4 – 10 years	1	2	3	4	5	NA	NA	NA	NA
> 10 years	1	2	3	4	5	6	NA	NA	NA
<i>Telework Status</i>									
Telework	1	2	3	4	5	6	NA	NA	NA
Barrier to Telework	1	2	3	4	5	NA	NA	NA	NA
Choose Not To Telework	1	1	3	4	5	6	NA	NA	NA

Table 8., Continued

	POTENTIAL DRIVERS								
	Performance Feedback	Collaborative/ Cooperative Management	Merit System Principles	Employee Training & Development	Work/ Life Balance	Job Resources	Performance Recognition & Reward	Performance Rating	Supportive Coworkers
SELECTED GROUPS									
<i>Mission-Critical Occupations</i>									
Auditor	1	2	3	4	6	5	NA	NA	NA
Contract Specialist	1	2	4	3	5	NA	NA	NA	NA
Economist	1	2	3	4	4	6	7	NA	NA
HR Specialist	2	1	3	4	4	NA	NA	NA	NA
IT Specialist	1	2	3	4	5	5	NA	NA	NA
Non-MCO	1	2	3	4	5	NA	NA	NA	NA

Source: OLS regression analyses of 2015 Federal Employee Viewpoint Survey (FEVS) data.

NOTES:

1. Numbers shown represent the order of the key driver based upon effect size.
2. NA indicates this factor was not a key driver for this group based upon the criteria established. Factors with OLS standardized regression coefficients of 0.10 and above were identified as key drivers. Results with the standardized regression coefficients can be found in [Appendix III](#).
3. Generations are defined as: *Traditionalists* (born 1945 or earlier), *Baby Boomers* (born 1946 – 1964), *Generation X* (born 1965 – 1980), and *Millennials* (born 1981 or later).
4. Barriers to telework include being required to be physically present, technical issues, and no approval.
5. Mission-Critical Occupations (MCOs) are defined as those where staffing gaps could affect the ability of agencies across the government to carry out their mission (<http://www.gao.gov/products/GAO-15-223>). OPM and the Chief Human Capital Officer (CHCO) Council identified six occupation areas of concern: auditor, contract specialist/acquisitions, economist, human resource specialist, information technology/cybersecurity, and the Science, Technology, Engineering, and Mathematics (STEM) functional community (<http://www.gao.gov/products/GAO-15-223>). In the current analysis, we only examined five of these MCOs.
6.  shading indicates exceptions to the overall patterns of results.

Key Drivers of the EEI by Year and Selected Agencies

We also tested whether the key drivers of the EEI varied across years and for selected agencies. OPM and others have contended that external contextual factors, such as sequestration, furloughs, pay freezes, and increased political debates about the value of Federal workers, negatively impacted employee morale and, possibly, engagement (U.S. Government Accountability Office, 2015; U.S. Office of Personnel Management, 2015). These events occurred between the 2013 and 2014 FEVS administrations and, as already shown in [Figures 1](#) and [2](#), EEI scores decreased over this time. Also, we recognize governmentwide trends may mask patterns of individual agencies within the Federal Government. Therefore, to investigate the extent to which the key drivers were stable over time and across agencies, we examined the impact of the nine potential drivers on EEI scores for 2013 – 2015 and for selected agencies, controlling for agency, supervisory status, gender, minority status, age group, and agency tenure.

[Table 9](#) provides a summary of these OLS multiple regression results. Results are largely the same across years. For 2013 – 2015, the top five key drivers were consistently Performance Feedback, Collaborative/Cooperative Management, Merit System Principles, Employee Training & Development, and Work/Life Balance. There was one notable exception. Unlike the other two years, Job Resources was a key driver for 2014. Given the precarious political and financial conditions of the Federal Government during this time, which undoubtedly impacted the availability of resources, such as materials, staffing levels, workloads, and budgets, it is not surprising that Job Resources would also emerge as a key driver of the EEI for 2014.

[Table 9](#) also displays the results for selected agencies. Based upon variation in size and/or EEI scores, we selected several departments, large, small and independent agencies. These agencies were: 1) Department of Homeland Security (DHS), 2) the Environmental Protection Agency (EPA), 3) the Small/Independent Agencies (combined), and 4) the Small Business Administration (SBA). In general, the results were largely consistent across agencies. Performance Feedback, Collaborative/Cooperative Management, Merit System Principles, and Employee Training & Development were among the top key drivers for the all of the selected agencies. Work/Life Balance, however, was not a key driver for EPA or SBA. The results also indicate Job Resources was a key driver for each of the selected agencies. Performance Recognition & Reward is a key driver for SBA only.

Table 9. Summary of OLS Regression Results for the EEI by Year and for Selected Agencies

	POTENTIAL DRIVERS								
	Performance Feedback	Collaborative/ Cooperative Management	Merit System Principles	Employee Training & Development	Work/ Life Balance	Job Resources	Performance Recognition & Reward	Performance Rating	Supportive Coworkers
<i>Years</i>									
2013	1	2	3	4	5	NA	NA	NA	NA
2014	1	2	3	4	5	6	NA	NA	NA
2015	1	2	3	4	5	NA	NA	NA	NA
<i>Selected Agencies, 2015</i>									
DHS	1	2	3	4	5	6	NA	NA	NA
EPA	1	2	3	4	NA	5	NA	NA	NA
Small Agencies	1	2	3	3	5	5	NA	NA	NA
SBA	1	2	3	4	NA	5	5	NA	NA

NOTES:

1. Numbers shown represent the order of the key driver based upon effect size.
2. NA indicates this factor was not a key driver for this group based upon the criteria established. Factors with OLS standardized regression coefficients of .10 and above were identified as key drivers. Results with the standardized regression coefficients can be found in [Appendix III](#).
3. Each model controlled for agency, supervisory status, gender, minority status, age group, and agency tenure.
4. Agencies were selected based upon variation in their sizes (e.g., number of employees who responded to the 2015 FEVS) and/or EEI scores. The number of employees who responded for the three Department/Large Agencies were as follows: DHS—43,090; EPA—4,456; and SBA—1,303. For the Small/Independent Agencies, the average number of employees that responded was 114.
5. Due to the small number of employees who work in many of the Small/Independent Agencies, the analyses were conducted with the employees from all 45 participating agencies as one group. [Appendix II](#) contains the list of these agencies.
6.  shading indicates exceptions to the overall patterns of results.

Key Drivers of the Three EEI Subindices

The EEI consists of three Subindices: Leaders Lead, Supervisors, and Intrinsic Work Experience. Since each of these focuses on a different aspect of the work environment, we conducted OLS multiple regression analyses to identify the key drivers for each subindex. Controlling for agency, supervisory status, gender, minority status, age group, and agency tenure, we examined the impact of Collaborative/Cooperative Management, Employee Training & Development, Job Resources, Merit System Principles, Performance Feedback, Performance Rating, Performance Recognition & Reward, Supportive Coworkers, and Work/Life Balance on Leaders Lead, Supervisors, and Intrinsic Work Experience, separately. Additionally, we analyzed the impact of these factors on each subindex by year and for the selected agencies. [Tables 10](#) and [11](#) summarize these OLS results. The findings point to different drivers for each Subindex.

Leaders Lead

For the Leaders Lead Subindex, three factors were identified as key drivers. They were:

- Collaborative/Cooperative Management;
- Merit System Principles; and
- Performance Recognition & Reward.

Collaborative/Cooperative Management had the greatest impact on the Leaders Lead Subindex for all three years and for all of the selected agencies. The second strongest driver was Merit System Principles. Performance Recognition & Reward, which refers to a system in which outstanding employee contributions and performance are recognized, emerged as the third key driver of the Leaders Lead Subindex. Two other factors—Employee Training & Development and Job Resources—had slightly smaller effects on certain agencies (see Table 11). For example, Employee Training & Development was a key driver for the Small Agencies, EPA, and SBA. Job Resources, which emphasizes the availability of sufficient materials, knowledge, and personnel, was a key driver for EPA and SBA. These results suggest that policies and practices that emphasize teamwork, collaboration, protect employees from unfair actions, and provide meaningful recognition and rewards contribute to creating a workplace culture that supports employee engagement.

Supervisors

[Tables 10](#) and [11](#) show two factors were key drivers of the Supervisors Subindex. They were:

- Performance Feedback; and
- Work/Life Balance.

For all years and for all of the selected agencies, Performance Feedback had the largest effect on the Supervisors Subindex. Additionally, in all instances, the effect size of Performance Feedback was at least twice the effect size of Work/Life Balance (also see [Appendix III](#)). While the results show the importance of both factors, they also indicate constructive and worthwhile performance feedback conversations are critical to the employee-supervisor relationship.

Intrinsic Work Experience

[Tables 10](#) and [11](#) also display the top drivers of Intrinsic Work Experience. As shown, five factors emerged as key drivers. They were:

- Employee Training & Development;
- Job Resources;
- Performance Rating;
- Merit System Principles; and
- Collaborative/Cooperative Management.

When compared to the other factors, Employee Training & Development was consistently the strongest driver of Intrinsic Work Experience for all years and for all selected agencies. While the order of effect varied slightly for the other factors, the overall patterns of findings primarily identified these five factors as top drivers of Intrinsic Work Experience. With few exceptions, offering training and professional development opportunities, providing sufficient job resources to perform responsibilities, evaluating performance and ensuring accountability, safeguarding from unfair work practices, and promoting collaboration and team work drive employees' feelings of motivation and competency regarding their work roles.

Additionally, [Table 11](#) reveals a few exceptions to this pattern. For example, Supportive Coworkers was a key driver for the Small Agencies (combined) only. Given their smaller sizes, it is not surprising that supportive and cooperative coworker relationships, in which job-relevant knowledge and information are shared, play a significant role in the work experiences of these employees. For SBA only, Performance Feedback was among the top five drivers while Collaborative/Cooperative Management was not.

Table 10. Summary of OLS Regression Results for the three EEI Subindices by Year

Index Name	Year	POTENTIAL DRIVERS								
		Performance Feedback	Collaborative/ Cooperative Management	Merit System Principles	Employee Training & Development	Work/ Life Balance	Job Resources	Performance Recognition & Reward	Performance Rating	Supportive Coworkers
Leaders Lead	2013	NA	1	2	NA	NA	NA	3	NA	NA
	2014	NA	1	2	NA	NA	NA	3	NA	NA
	2015	NA	1	2	NA	NA	NA	3	NA	NA
Supervisors	2013	1	NA	NA	NA	2	NA	NA	NA	NA
	2014	1	NA	NA	NA	2	NA	NA	NA	NA
	2015	1	NA	NA	NA	2	NA	NA	NA	NA
Intrinsic Work Experience	2013	NA	4	4	1	NA	2	NA	3	NA
	2014	NA	5	4	1	NA	2	NA	3	NA
	2015	NA	5	4	1	NA	2	NA	3	NA

NOTES:

1. Numbers shown represent the order of the key driver based upon effect size.
2. NA indicates this factor was not a key driver for this group based upon the criteria established. Factors with OLS standardized regression coefficients of 0.10 and above were identified as key drivers. Results with the standardized regression coefficients can be found in [Appendix III](#).
3. Each model controlled for agency, supervisory status, gender, minority status, age group, and agency tenure.
4. shading indicates exceptions to the overall patterns of results.

Table 11. Summary of OLS Regression Results for the three EEI Subindices by Selected Agencies

Index Name	Selected Agencies	POTENTIAL DRIVERS								
		Performance Feedback	Collaborative/ Cooperative Management	Merit System Principles	Employee Training & Development	Work/ Life Balance	Job Resources	Performance Recognition & Reward	Performance Rating	Supportive Coworkers
Leaders	DHS	NA	1	2	NA	NA	NA	3	NA	NA
	EPA	NA	1	2	5	NA	4	3	NA	NA
	Small Agencies	NA	1	2	4	NA	NA	3	NA	NA
	SBA	NA	1	2	5	NA	4	3	NA	NA
Supervisors	DHS	1	NA	NA	NA	2	NA	NA	NA	NA
	EPA	1	NA	NA	NA	2	NA	NA	NA	NA
	Small Agencies	1	NA	NA	NA	2	NA	NA	NA	NA
	SBA	1	NA	NA	NA	2	NA	NA	NA	NA
Intrinsic Work Experience	DHS	NA	5	4	1	NA	2	NA	3	NA
	EPA	NA	5	4	1	NA	2	NA	2	NA
	Small Agencies	NA	4	6	1	NA	2	NA	3	4
	SBA	5	NA	4	1	NA	3	NA	2	NA

NOTES:

1. Numbers shown represent the order of the key driver based upon effect size.
2. NA indicates this factor was not a key driver for this group based upon the criteria established. Factors with OLS standardized regression coefficients of 0.10 and above were identified as key drivers. Results with the standardized regression coefficients can be found in [Appendix III](#).
3. Each model controlled for agency, supervisory status, gender, minority status, age group, and agency tenure.
4. Agencies were selected based upon variation in their sizes (e.g., number of employees who responded to the 2015 FEVS) and/or EEI scores. The number of employees who responded for the three Department/Large Agencies were as follows: DHS—43,090; EPA—4,456; and SBA—1,303. For the Small/Independent Agencies, the average number of employees that responded was 114.
5. Due to the small number of employees who work in many of the Small/Independent Agencies, the analyses were conducted with the employees from all 45 participating agencies as one group. [Appendix II](#) contains the list of these agencies.
6. shading indicates exceptions to the overall patterns of results.

Section IV. Strategies for Strengthening Employee Engagement: Conclusions

Fostering a culture of excellence through employee engagement has been and continues to be one of the most important pillars of the Federal Government. Engaged employees and an engaged workforce benefit agencies through innovation, productivity and performance as well as reduce recruitment and retention costs. While the importance of strengthening employee engagement is recognized across multiple levels of leadership, a significant challenge has been to identify the conditions that are most likely to improve engagement and helping agencies develop practices and strategies that create inclusive work environments capable of engaging employees.

The President's Management Agenda urges agencies to foster a culture of excellence and employee engagement through data-driven approaches to enhance management, performance, and innovation. To date, only a few analyses have directly used the Federal Employee Viewpoint Survey (FEVS) data to identify the key drivers of engagement, as measured by the EEI. In their work, GAO (2015) identified six FEVS items as drivers of the EEI. Of these, the items measuring constructive performance feedback (Q46) and career development and training (Q1) were the two strongest drivers. The study described in this report builds upon GAO's analysis to examine the key drivers of the EEI and the EEI Subindices across selected groups of Federal employees and across multiple years using composite measures consisting of actionable FEVS items. The results from both the GAO and OPM studies suggest performance feedback and career development and training are among key factors that contribute to developing conditions that may engage employees. Taken together, the results suggest certain factors, conditions, and management practices are critical to building and sustaining a culture of excellence, engagement, and performance across agencies in the Federal government.

Based upon these results, we recommend agencies take steps to improve employee engagement through deliberate and concerted efforts across the five key drivers for the EEI: Performance Feedback, Collaborative/Cooperative Management, Merit Systems Principles, Employee Training & Development, and Work/Life Balance. We offer an overview of general promising practices and encourage managers and human resources professionals to determine how best to tailor these recommendations to their respective agencies, based upon their culture, mission, and available resources. Effective strategies and actions may include activities and interventions that are as unique as each agency's culture or mission or as wide-sweeping as generalized training for essential skills in effective management.

Promising practices that relate to the five key drivers outlined in this report include:

- *Performance Feedback.* Supervisors must provide the appropriate guidance and feedback to employees at the appropriate time. Frequent and "light check-ins" (outside of formal performance appraisals) provide timely and worthwhile feedback. As a rule, performance feedback can never be a "check the box" activity and is ongoing. Commitment from each level of leadership—from the first-level supervisor to the Director—is required to address this most critical driver of engagement.
- *Collaborative/Cooperative Management.* Managers and supervisors should create a culture of communication and collaboration across units—top down and bottom up. Doing so will build trust and a sense of community throughout the agency.

- *Merit System Principles.* Managers and supervisors must act to ensure employees are protected against arbitrary actions, personal favoritism, political coercion and reprisal. This requires strong leadership and clear actions when these principles are violated. Leadership words and actions can either build employee trust or diminish it.
- *Employee Training & Development.* Agencies should offer appropriate training and development opportunities to employees. Investing in an employee's professional development shows an agency's commitment to each individual employee and their future in Federal Government work. While training and development will directly benefit each employee and enable her/him to reach their full potential, the agency benefits greatly from a more highly skilled and productive workforce.
- *Work/Life Balance.* Supervisors must be supportive of workers' need to balance work and life priorities. Managers and supervisors should clarify expectations about flexible work schedules and telework options as well as establish work practices that respect work and personal boundaries ("on" versus "off" times). Without such a balance, the consequences to the workforce may include stressed and disgruntled employees, negative health outcomes, burnout, diminished productivity, and turnover.

Our results also identified different factors drive engagement for the Leaders Lead, Supervisors, and Intrinsic Work Experience Subindices. This suggests targeted efforts may be necessary for strengthening engagement for these aspects of the work environment.

- *Performance Recognition & Reward.* Managers should create time to recognize the contributions of employees. Employee recognition, incentives, and rewards (monetary and non-monetary) help keep employees engaged.
- *Job Resources.* Managers and supervisors should ensure employees have what they need to do their jobs. Adequate job resources play an intrinsic motivational role and foster employees' growth, learning, and development and provide a means to achieve work goals.
- *Performance Rating.* Managers and supervisors must clearly communicate performance standards to employees and hold employees accountable for their performance.

Employee engagement is a long-term and on-going process that requires continued interactions and efforts over time to improve and/or strengthen. Engagement involves all levels of the organization, requiring a series of actions, steps, and input at all levels of agency hierarchy, and demands consistent, continuous and clear communications.

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Appendix I. Methodology

To identify the key drivers of engagement as measured by the EEI, we conducted several types of analyses. First, we identified items in the FEVS that could be considered drivers and performed analyses to confirm the factor structure of the new composite measures or factors. We next performed key driver analyses of the potential key driver factors and the extent to which they predicted scores on the EEI and the three subindices: Leaders Lead, Supervisors, and Intrinsic Work Experience. Finally, we performed these key driver analyses of the EEI and its three subindices: 1) governmentwide; 2) among selected groups of the Federal workforce; 3) across three years—2013 to 2015; 4) for selected agencies, based upon size and/or variation in EEI scores. These included the Department of Homeland Security (DHS), the Environmental Protection Agency (EPA), the Small/Independent Agencies (combined), and the Small Business Administration (SBA). This appendix describes the data and analytic methods used to estimate and identify the drivers of the EEI. [Appendix III](#) provides the detailed results from the key driver analyses, including the OLS regression coefficients.

Data

Analyses were based primarily upon data from the 2015 Federal Employee Viewpoint Survey (FEVS), however we also tested the models using the 2013 and 2014 FEVS data to verify the stability of the factors and relationships. The FEVS provides a snapshot of employees' perceptions of how effectively agencies manage their workforce. The 98-item survey covers the following eight topics: (1) work experience, (2) work unit, 3) agency, (4) leadership, (6) satisfaction, (7) work/life; and (8) demographics.

The FEVS is a Web-based, self-administered survey administered over a 6-week fielding period with reminders sent to nonrespondents weekly. The sample for the FEVS includes full- and part-time, permanent, non-seasonal employees of departments, large, small and independent agencies. The sampling design ensures representative results are reported for all pre-identified work units and senior leader status (i.e., whether a member of the Senior Executive Service (SES) or equivalent) as well as the overall Federal workforce (Governmentwide).¹⁵

For 2015, the sample included 37 departments and large agencies as well as 45 small and independent agencies of the Executive Branch.¹⁶ The eligible sample size was 848,237 employees, which represents approximately 97 percent of the executive branch workforce. Of these, 421,748 employees completed the survey, reflecting a 49.7% response rate.¹⁷ The sample sizes used for these analyses are 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. Full-sample weights were used to compute all key driver estimates. A detailed discussion of the FEVS methodology more generally can be accessed at <https://www.fedview.opm.gov/>.

¹⁵ Since 2013, OPM has used a Graduated Proportional Sampling (GPS) plan that once the appropriate strata are identified and the necessary sample size is determined for an agency, a census or sample is conducted contingent upon whether 75% or more of the workforce would be sampled.

¹⁶ Large agencies have 800 or more employees or are cabinet-level departments/agencies.

¹⁷ In 2014, the eligible sample size was 839,788. Of these 392,752 employees completed surveys, reflecting a 46.8% response rate. In 2013, the eligible sample size was 781,047. Of these, 376,577 employees completed the survey, which reflects a 48.2% response rate. Similar to 2015, the eligible sample represents approximately 97% of the federal executive workforce for 2013 and 2014.

For the analyses to identify the potential key driver factors, we randomly divided cases in the 2015 dataset into two datasets: an initial dataset (60% of the cases) and a test dataset (40 percent). The datasets were divided using stratified random sampling based upon agency, component, supervisory status, sex, minority status, age grouping, federal tenure, and location (Headquarters or field). We employed this technique because as we were refining the key driver factors using the initial dataset, and then by having the split sample we were able to use the test dataset to verify or confirm the final factor structure. Results for the analyses below were then conducted on the full 2015 dataset for reporting purposes unless otherwise specified.

Method

Analyses

Creation of Key Driver Factors. After reviewing the literature, the OPM and Westat teams independently reviewed the items on the FEVS that theoretically might lead to engagement. A list of 29 potential items appeared to align in content with findings regarding engagement antecedents identified in prior studies. These were agreed upon through team discussions and sorted into seven proposed factors. Confirmatory factor analyses (CFA) were then performed to test the fit of the proposed factors. For an item to be considered as having an adequate contribution to a particular factor, we examined the factor loadings with the criterion that they should be 0.50 or greater (Hu & Bentler, 1999).

We reviewed standard overall model fit statistics: the chi-square), comparative fit index (CFI), the root mean square error of approximation (RMSEA), and the standardized root mean square residual (SRMR). Given the large sample size, we primarily relied on the CFI, RMSEA, and the SRMR as indices of model fit because the χ^2 is influenced by sample size such that the larger the sample size, the more likely it is that the χ^2 will be significant, which indicates lack of model fit (Brown, 2006). The factor structure is determined to adequately fit the data if the CFI is at least 0.95 (Kenny, 2015). The RMSEA examines the residuals of the model, and models with an RMSEA of 0.08 or less are considered acceptable (Hu & Bentler, 1999). The SRMR is the standardized difference between the observed covariance and predicted covariance matrices. A value of zero for the SRMR indicates perfect fit, but a value less than 0.08 is considered good fit (Kenny, 2015).

Once the final factor structure was determined, we confirmed it on the test dataset and calculated internal consistency reliability. Internal consistency reliability analyses were also performed on the final factors to ensure that individuals were responding consistently to the items within each. Cronbach's Alpha (α) is a measure of the internal consistency reliability of an index that consists of multiple questions and ranges from 0 to 1. Higher values reflect higher internal reliability, with values of 0.70 and above considered reliable (Nunnally & Bernstein, 1994).

Key Driver Analyses. We used Ordinary Least Squares (OLS) multiple regression to analyze the relationships between the potential drivers and the EEI or its three subindices, controlling for agency, supervisory status, gender, minority status, age group, and agency tenure.

Measures

Measurement of the Dependent Variable

EMPLOYEE ENGAGEMENT INDEX (EEI)

The Employee Engagement Index (EEI) was first introduced in 2010 and contained 8 questions. In 2011, it was revised to contain the questions that currently comprise the EEI.¹⁸ The EEI does not directly measure employee engagement as defined by OPM. Rather, it 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. Each reflects a different aspect of the workplace conditions that lead to engagement. Leaders Lead reflects the employees' perceptions of the integrity of leadership, as well as leadership behaviors such as communication and workforce motivation. Supervisors reflects the interpersonal relationship between worker and supervisor, including trust, respect and support. Intrinsic Work Experience reflects the employees' feelings of motivation and competency relating to their role in the workplace. [Table 12](#) includes the full list of questions used for the EEI and the reliability scores for the subindices using the full 2015 dataset. [Table 13](#) provides the fit statistics.

¹⁸ In 2011, an initial exploratory factor analysis revealed three factors consisting of 16 items (Leaders Lead, Supervisors, and Intrinsic Work Experience) with a single, underlying factor (Conditions Conducive to Employee Engagement). A confirmatory factor analysis (CFA) was repeated with an independent dataset and supported the three factor model. One item was removed for theoretical and statistical reasons, resulting in the current 15-item, three-factor model.

Table 12. EEI: Confirmatory Factor Analysis (CFA) Results

Subindices	FEVS Items	CFA Factor Loading (Reliability)
Leaders Lead [5 items]		0.92
	▪ In my organization, senior leaders generate high levels of motivation and commitment in the workforce. (Q53)	0.90
	▪ My organization's senior leaders maintain high standards of honesty and integrity. (Q54)	0.90
	▪ Managers communicate the goals and priorities of the organization. (Q56)	0.78
	▪ Overall, how good a job do you feel is being done by the manager directly above your immediate supervisor? (Q60)	0.80
	▪ I have a high level of respect for my organization's senior leaders. (Q61)	0.90
Supervisors [5 items]		0.95
	▪ Supervisors in my work unit support employee development. (Q47)	0.81
	▪ My supervisor listens to what I have to say. (Q48)	0.92
	▪ My supervisor treats me with respect. (Q49)	0.91
	▪ I have trust and confidence in my supervisor. (Q51)	0.94
	▪ Overall, how good a job do you feel is being done by your immediate supervisor? (Q52)	0.90
Intrinsic Work Experience [5 items]		0.87
	▪ I feel encouraged to come up with new and better ways of doing things. (Q3)	0.82
	▪ My work gives me a feeling of personal accomplishment. (Q4)	0.79
	▪ I know what is expected of me on the job. (Q6)	0.75
	▪ My talents are used well in the workplace. (Q11)	0.82
	▪ I know how my work relates to the agency's goals and priorities. (Q12)	0.71

NOTE: Qs indicate FEVS question numbers.

Table 13. EEI: CFA Model Fit Indices

Individual Confirmatory Factor Analysis						
	# of items	χ^2	df	CFI	RMSEA (CI)	SRMR
SAS	15	181338.315	87	.9595	0.0801 (0.0798-0.0804)	0.486

NOTES:

- *indicates Chi-square is significant at $p < 0.05$. CI = 90% confidence intervals.
- CFI = Comparative Fit Index. RMSEA = Root Mean Square Error of Approximation. SRMR= Standardized Root Mean Square Residual.
- Analysis used robust maximum likelihood estimates.

Calculation of the EEI for the Current Analysis

For the current analysis, the dependent variable for the regression models was either the EEI or one of the EEI Subindices. To calculate the EEI scores, we first calculated the subindex scores for each individual.¹⁹ Each subindex was calculated as the mean score of the individual responses to the five FEVS items that measure each subindex, ranging on a five-point scale (1=strongly disagree to 5=strongly agree). Answers to at least two of the five items were required and a subindex score was not calculated if only one item was answered. The Employee Engagement Index (EEI) score was then calculated as the mean score of the three subindices, provided all three had a score. If any of the three subindices was missing, EEI scores for an individual were not calculated.

Measurement of the Independent Variables

Potential Drivers of the Employee Engagement Index (EEI)

As discussed in [Section I](#), prior research and theory have indicated employee engagement is influenced by many factors, including job characteristics, organizational climate, personal characteristics, and contextual factors. We were able to examine the impact of certain antecedents—or drivers—of the EEI and the three EEI Subindices using FEVS items. Consistent with previous studies, we examined the role of specific leadership/management styles, employee professional growth and development opportunities, work resources, perceived fairness, performance feedback, performance rating, recognition and rewards, social support, and work/life balance. [Table 14](#) links these factors examined in the current key driver analysis with OPM’s model of engagement as well as those already identified in the employee engagement literature.

Table 14. Potential Drivers Tested in the Current Analysis and Identified in the Engagement Literature

Potential Driver (Current Analysis)	Corresponds with OPM Model ¹	Identified In Engagement Literature	Research/Source ²
Collaborative/ Cooperative Management	Organizational Climate: <i>Management and Senior Leadership</i>	Management/Leadership Styles	Guest & Conway, 2002 Macey et al., 2009 Saks & Gruman, 2011
Employee Training & Development	Organizational Climate	Career/Development Opportunities	Crawford et al., 2010 MSPB, 2008 Quantum Workforce, 2013 Saks & Gruman, 2011 Shuck & Wollard, 2010

¹⁹ This methodology is different from how the EEI is typically calculated for agencies or governmentwide. EEI scores published in agency and governmentwide reports are calculated by first estimating percent positive scores at the work unit level (e.g., across an agency) and then by averaging those scores. Using this approach would have resulted in a loss of information. Therefore, for the analyses described in this report, we calculated the mean scores at the individual level to explore all relationships.

Table 14., Continued

Potential Driver (Current Analysis)	Corresponds with OPM Model¹	Identified In Engagement Literature	Research/Source²
Job Resources	Job Characteristics	Working Conditions/Workload	Bakker & Demerouti, 2007 Demerouti et al., 2001 Macey et al., 2009 Saks & Gruman, 2011 Shuck & Wollard, 2010
Merit System Principles	Organizational Climate: <i>Perceptions of Fairness and Inclusion</i>	Fairness/Supportive Climate	Colquitt et al., 2001 Crawford et al., 2010 Macey et al., 2009 Saks, 2006 Shuck & Wollard, 2010 Valpone et al., 2012
Performance Feedback	Organizational Climate: <i>Performance Management Practices</i>	Performance Feedback	Crawford et al., 2010 Demerouti et al., 2001 Maslach et al., 2001 MSPB, 2012 Saks & Gruman, 2011 Shuck & Wollard, 2010
Performance Rating	Organizational Climate: <i>Performance Management Practices</i>	Performance Management	Saks & Gruman, 2011
Performance Recognition & Reward	Organizational Climate: <i>Performance Management Practices</i>	Recognition/Rewards	Crawford et al., 2010 Kahn, 1990 Maslach et al., 2001 MSPB, 2008 & 2012 Saks & Gruman, 2014 Shuck & Wollard, 2010
Supportive Coworkers	Organizational Climate	Social support/Supportive Coworkers	Demerouti et al., 2001 Maslach et al., 2001 Saks & Gruman, 2014
Work/Life Balance	Organizational Climate	Work/Life Balance	Lookwood, 2007

NOTES:

1. This corresponds with OPM’s model of employee engagement (see [Figure 3](#)) and the discussion of antecedents (see [pages 7 – 10](#)).
2. This list is not intended to be an exhaustive list of the engagement literature. Rather, it highlights research studies/sources that identify antecedents (or drivers) of engagement, where the items, measurement, and definitions are most compatible with OPM’s definition, model, and/or the FEVS. [Section I](#) of this report provides a more detailed discussion of the engagement literature more generally.

Based upon our literature review, we identified 29 FEVS questions that captured engagement concepts, were not already included in the EEI, and were most actionable by managers as potential drivers of the EEI.²⁰ Because these concepts for the drivers of engagement are relatively broad and multifaceted, a single survey item seemed insufficient for measuring them. Therefore, we created composite measures or factors that consist of multiple FEVS items, when possible. Such composite measures provide more consistent and robust estimates than single item measures. We conducted confirmatory factor analyses to determine if the data supported these seven factors.

This initial proposed structure led to several drivers having fit statistics and/or Cronbach alpha below the cutoffs. Through several iterations, a nine factor model composed of 23 items was identified as having acceptable fit statistics and also coincided with theory. In summary, two factors were broken out to create four separate factors and six items were dropped. We confirmed this factor structure with the test dataset. The results shown below for these factors are based upon the full 2015 dataset rather than separately for the initial and test datasets, though the results are consistent. [Table 15](#) provides the potential drivers with their factor loadings, and reliability information for the measures. [Table 16](#) provides the fit statistics.

²⁰ The FEVS was not created specifically to analyze drivers of employee engagement. Therefore, we were unable to examine all of the factors that prior research and theory have shown to impact engagement. We identified available items that were most actionable by managers and examined these factors.

Table 15. Potential Drivers: Confirmatory Factor Analysis (CFA) Results

Potential Drivers	FEVS Items	CFA Factor Loading (Reliability)
Job Characteristics		
Job Resources [3 items]	<ul style="list-style-type: none"> ▪ I have enough information to do my job well. (Q2) ▪ I have sufficient resources to get my job done. (Q9) ▪ My workload is reasonable. (Q10) 	0.75 0.80 0.70 0.64
Organizational Climate		
Collaborative/Cooperative Management [2 items]	<ul style="list-style-type: none"> ▪ Managers promote communication among different work units. (Q58) ▪ Managers support collaboration across work units to accomplish work objectives. (Q59) 	0.93 0.95 0.95
Employee Training & Development [2 items]	<ul style="list-style-type: none"> ▪ I am given a real opportunity to improve my skills in my organization. (Q1) ▪ My training needs are assessed. (Q18) 	0.77 0.83 0.80
Merit System Principles [3 items]	<ul style="list-style-type: none"> ▪ I can disclose a suspected violation of any law, rule or regulation without fear of reprisal. (Q17) ▪ Arbitrary action, personal favoritism and coercion for partisan political purposes are not tolerated. (Q37) ▪ Prohibited Personnel practices are not tolerated. (Q38) 	0.85 0.79 0.87 0.86
Performance Feedback [3 items]	<ul style="list-style-type: none"> ▪ Discussions with my supervisor about my performance are worthwhile. (Q44) ▪ My supervisor provides me with constructive suggestions to improve my job performance. (Q46) ▪ In the last six months, my supervisor has talked with me about my performance. (Q50) 	0.89 0.95 0.93 0.74
Performance Rating [3 items]	<ul style="list-style-type: none"> ▪ My performance appraisal is a fair reflection of my performance. (Q15) ▪ I am held accountable for achieving results. (Q16) ▪ In my most recent performance appraisal, I understood what I had to do to be rated at different performance levels. (Q19) 	0.76 0.85 0.65 0.80

Table 15., Continued

Potential Drivers	FEVS Items	CFA Factor Loading (Reliability)
Organizational Climate		
Performance Recognition & Reward [4 items]	<ul style="list-style-type: none"> ▪ Promotions in my work unit are based on merit. (Q22) ▪ In my work unit, steps are taken to deal with a poor performer who cannot or will not improve. (Q23) ▪ In my work unit, differences in performance are recognized in a meaningful way. (Q24) ▪ Awards in my work unit depend on how well employees perform their jobs. (Q25) 	0.90 0.82 0.78 0.90 0.87
Supportive Coworkers [2 items]	<ul style="list-style-type: none"> ▪ The people I work with cooperate to get the job done. (Q20) ▪ Employees in my work unit share job knowledge with each other. (Q26) 	0.74 0.78 0.81

NOTES:

1. Qs indicate FEVS question numbers.
2. The Work/Life Balance, as a single item measure, was not included in this analysis. The item is “My supervisor supports my need to balance work and other life issues. (Q 42)”

Table 16. Potential Drivers: CFA Model Fit Indices

Individual Confirmatory Factor Analysis							
	# of items	χ^2	df	χ^2/df	CFI	RMSEA (CI)	SRMR
SAS	22	138,564.323	181		0.969	0.053 (0.053- 0.053)	0.034

NOTES:

1. * indicates Chi-square is significant at $p < 0.05$. CI = 90% confidence intervals.
2. CFI = Comparative Fit Index. RMSEA = Root Mean Square Error of Approximation. SRMR= Standardized Root Mean Square Residual.
3. Analysis used robust maximum likelihood estimates.

Calculation of Potential Drivers of the EEI for Current Analysis

Similar to the EEI, these factor scores were calculated at the individual level when the respondent answered at least 50 percent of the items within each. If there was an odd number of items, we rounded down (e.g., 5 items = 2.5 we required at least 2 items to be answered to calculate a factor score). Like the FEVS results, we did not include ‘no basis to judge’ or ‘don’t know’ responses in these calculations.

Appendix II. 2015 Participating Small/Independent Agencies

Table 17. Sample Sizes and Response Rates for the Small/Independent Agencies, 2015

Agency	Number Surveyed	Number Responded	Response Rate
<i>Governmentwide</i>	848,237	421,748	49.7%
Small Agencies, Combined	7,194	5,121	71.2%
Advisory Council on Historic Preservation (ACHP)	35	28	80.0%
African Development Foundation (AFD)	24	13	54.2%
American Battle Monuments Commission (ABMC)	24	14	58.3%
Chemical Safety and Hazard Investigations Board (CSB)	31	31	100.0%
Committee for Purchase from People Who Are Blind or Severely Disabled (CPPBSD)	24	11	45.8%
Commission on Civil Rights (USCCR)	24	19	79.2%
Commodity Futures Trading Commission (CFTC)	617	488	79.1%
Consumer Product Safety Commission (CPSC)	467	299	64.0%
Corporation For National And Community Service (CNCS)	591	492	83.2%
Defense Nuclear Facilities Safety Board (DNFSB)	97	81	83.5%
Export-Import Bank of the United States (EXIM)	360	217	60.3%
Farm Credit Administration (FCA)	258	225	87.2%
Farm Credit System Insurance Corporation (FCSIC)	11	9	81.8%
Federal Retirement Thrift Investment Board (FRTIB)	170	142	83.5%
Federal Election Commission (FEC)	294	163	55.4%
Federal Housing Finance Agency (FHFA)	482	350	72.6%
Federal Labor Relations Authority (FLRA)	117	98	83.8%
Federal Maritime Commission (FMC)	98	77	78.6%
Federal Mediation And Conciliation Service (FMCS)	203	164	80.8%
Institute Of Museum And Library Services (IMLS)	59	46	78.0%
Inter-American Foundation (IAF)	35	33	94.3%
International Boundary and Water Commission (IBWC)	205	104	50.7%
Marine Mammal Commission (MMC)	10	8	80.0%
Merit Systems Protection Board (MSPB)	192	138	71.9%
National Capital Planning Commission (NCPC)	28	24	85.7%
National Endowment For The Arts (NEA)	95	58	61.1%
National Endowment For The Humanities (NEH)	115	74	64.3%
National Gallery of Art (NGA)	696	456	65.5%
National Indian Gaming Commission (NIGC)	88	67	76.1%
National Mediation Board (NMB)	35	16	45.7%
National Transportation Safety Board (NTSB)	384	228	59.4%
Nuclear Waste Technical Review Board (NWTRB)	10	4	40.0%
Occupational Safety and Health Review Commission (OSHRC)	47	32	68.1%

Table 17., Continued

Agency	Number Surveyed	Number Responded	Response Rate
<i>Governmentwide</i>	848,237	421,748	49.7%
Small Agencies, Combined	7,194	5,121	71.2%
Office of Navajo And Hopi Indian Relocation (ONHIR)	33	27	81.8%
Office of The U.S. Trade Representative (USTR)	178	82	46.1%
Overseas Private Investment Corporation (OPIC)	197	148	75.1%
Postal Regulatory Commission (PRC)	59	53	89.8%
Selective Service System (SSS)	103	80	77.7%
Surface Transportation Board (STB)	119	78	65.5%
U.S. Access Board (USAB)	26	16	61.5%
U.S. International Trade Commission (USITC)	317	280	88.3%
U.S. Office of Government Ethics (OGE)	60	47	78.3%
U.S. Office of Special Counsel (OSC)	106	65	61.3%
U.S. Trade And Development Agency (USTDA)	39	28	71.8%
Woodrow Wilson International Center For Scholars (WWICS)	31	8	25.8%

Appendix III. OLS Regression Results of the Drivers of Engagement

Our analysis of the key drivers of engagement examines the extent to which composite measures of selected FEVS items predicted scores on the EEI and the three EEI Subindices: Leaders Lead, Supervisors, and Intrinsic Work Experience. Using 2013, 2014, and 2015 FEVS data, we used Ordinary Least Squares (OLS) multiple regression to analyze the relationships between the potential drivers and the EEI and the three EEI Subindices, controlling for agency, supervisory status, gender, minority status, age group, and agency tenure. In addition to the governmentwide analysis, we analyzed the drivers of the EEI for six different groups within the Federal workforce: 1) generations, 2) supervisory status, 3) military service, 4) agency tenure, 5) telework status, and 6) those employed in mission-critical occupations (MCOs). Also, we analyzed the key drivers among employees at the EPA, DHS, the Small/Independent Agencies (combined), and SBA. Examining these agencies permit an analysis of the key drivers across varying sizes and/or levels of the EEI.

Overall Results for the EEI

Using multiple regression analysis, we analyzed the impact of the following nine factors on the EEI and the three EEI Subindices: 1) Collaborative/Cooperative Management; 2) Employee Training & Development; 3) Job Resources; 4) Merit System Principles; 5) Performance Feedback; 6) Performance Rating; 7) Performance Recognition & Reward; 8) Supportive Coworkers; and 9) Work/Life Balance. With the exception of the models for selected groups of Federal employees, all models included controls for agency, supervisory status, gender, minority status, age group, and agency tenure.

[Table 18](#) presents these results. Given the sample sizes of our governmentwide analyses, each of the potential drivers attained statistical significance. Accordingly, we established a statistical threshold in determining whether an independent variable was a “key driver.” We considered factors to be “key drivers” of the EEI and the Subindices if they had a standardized regression coefficient of .10 or above, indicating on average each standard deviation increase in the factor was associated with at least 0.10 standard deviation increase in the EEI.²¹ As shown in this table, for 2013, 2014, and 2015, the same five factors emerged as the key drivers of the EEI governmentwide. Also, these five factors were key drivers for the selected agencies. The five key drivers were:

- Performance Feedback,
- Collaborative/Cooperative Management,
- Merit System Principles,
- Employee Training & Development, and
- Work/Life Balance.

[Tables 19](#), [20](#), and [21](#) provide the OLS regression results for the drivers of the EEI by generation, supervisory status, military service, agency tenure, telework status, and mission-critical occupations. The results show the same five factors were key drivers across all of the different groups of employees.

Collectively, the results shown in Tables 18 – 21 indicate the two strongest drivers of the EEI were Performance Feedback and Collaborative/Cooperative Management. Performance Feedback, which is a

²¹ Tables 18 – 24 provide the standardized regression coefficients so readers can see the relative importance of each driver.

part of the Performance Management process, primarily had the greatest impact on the EEI. The second strongest driver of the EEI largely was Collaborative/Cooperative Management, which measures the extent to which managers support collaboration and teamwork in achieving agency goals and objectives. The other three factors—Merit System Principles, Employee Training & Development, and Work/Life Balance—had slightly smaller standardized regression coefficients. Nevertheless, the results suggest having policies and practices that protect employees from favoritism and arbitrary actions, offering training and professional development opportunities to employees, and supporting work/life balance also contribute to a workplace culture that engages employees.

Across all of these analyses, the adjusted R^2 of our models ranged from a low of 0.85 for Economist to a high of 0.89 for HR Specialists.²² This suggests that the variables included in our regression models predict approximately 85% to 89% of the variation in the Employee Engagement Index (EEI).

Overall Results for the Three EEI Subindices

To assess potential drivers of the three EEI Subindices, we replicated our overall EEI models by regressing the three EEI Subindices on the nine factors. More specifically, in three separate models, we analyzed the impact of the following nine factors on the Leaders Lead, Supervisors, and Intrinsic Work Experience Subindices: 1) Collaborative/Cooperative Management; 2) Employee Training & Development; 3) Job Resources; 4) Merit System Principles; 5) Performance Feedback; 6) Performance Rating; 7) Performance Recognition & Reward; 8) Supportive Coworkers; and 9) Work/Life Balance. Each model controlled for agency, supervisory status, gender, minority status, age group, and agency tenure.

[Tables 22, 23](#), and [24](#) provide the OLS regression results, with standardized coefficients shown, for the Leaders Lead, Supervisors, and Intrinsic Work Experience Subindices, respectively. Overall, the results revealed different key drivers for each subindex. For the Leaders Lead Subindex, the key drivers were Collaborative/Cooperative Management, Merit System Principles, and Performance Recognition & Reward. For the Supervisors Subindex, Performance Feedback and Work/Life Balance were the two key drivers. For Intrinsic Work Experience, the top five drivers were Employee Training and Development, Job Resources, Performance Rating, Merit System Principles, and Collaborative/Cooperative Management.

The adjusted R^2 of these models are somewhat lower than the adjusted R^2 for the overall EEI models, ranging from a low of 0.68 for Intrinsic Work Experience for 2013 to a high of 0.86 for Supervisors for SBA. This suggests that the variables included in these regression models predict approximately 68% to 86% of the variation in the three EEI subindices.

²² The Adjusted R^2 is a sample specific measure of how well the variation in the model's independent variables (such as Performance Feedback, Collaborative/Cooperative Management, Merit System Principles, Employee Training & Development, Work/Life Balance, Job Resources, Performance Recognition & Reward, Performance Rating, Supportive Coworkers and the control variables) predict the variation in the dependent or outcome variable (here, EEI, Leaders Lead, Supervisors, and Intrinsic Work Experience), correcting for the number of independent variables. It runs from 0 to 1, with a score of 0 suggesting that the model has no explanatory power and a score of 1 suggesting that the independent variables predict 100 percent of the variation in the dependent variable.

Table 18. OLS Regression Results: Drivers of the Employee Engagement Index (EEI)

		Employee Engagement Index (EEI)						
Potential Drivers		2013	2014	2015	DHS	EPA	Small Agencies	SBA
1.	Performance Feedback	0.28	0.27	0.26	0.27	0.26	0.25	0.31
2.	Collaborative/Cooperative Management	0.23	0.24	0.24	0.23	0.23	0.21	0.19
3.	Merit System Principles	0.16	0.17	0.16	0.16	0.17	0.16	0.17
4.	Employee Training & Development	0.13	0.14	0.14	0.14	0.16	0.16	0.11
5.	Work/Life Balance	0.12	0.11	0.11	0.12	0.09	0.10	0.09
6.	Job Resources	0.09	0.10	0.09	0.10	0.11	0.10	0.11
7.	Performance Recognition & Reward	0.07	0.07	0.07	0.08	0.07	0.06	0.11
8.	Performance Rating	0.06	0.06	0.06	0.05	0.08	0.05	0.04
9.	Supportive Coworkers	0.04	0.04	0.04	0.03	0.05	0.07	0.04
	N	287,272	298,315	322,153	33,971	3,372	2,491	1,021
	R ²	0.8765	0.8724	0.8769	0.8798	0.8551	0.8846	0.8917
	Adjusted R ²	0.8764	0.8723	0.8769	0.8797	0.8541	0.8826	0.8892

NOTES:

1. OLS standardized regression coefficients are shown.
2. Factors with standardized regression coefficients of .10 or above were identified as a “key driver”. Coefficients meeting this threshold are **bolded**.
3. Each model controlled for agency, supervisory status, gender, minority status, age group, and agency tenure.
4. Agencies were selected based upon variation in their sizes (e.g., number of employees who responded to the 2015 FEVS) and/or EEI scores. The number of employees who responded for the three Department/Large Agencies were as follows: DHS—43,090; EPA—4,456; and SBA—1,303. For the Small/Independent Agencies, the average number of employees that responded was 114.
5. Due to the small number of employees who work in many of the Small/Independent Agencies, the analyses were conducted with the employees from all 45 participating agencies as one group. [Appendix II](#) contains the list of these agencies.

Table 19. OLS Regression Results: Drivers of the EEI by Generations and Supervisory Status

		Employee Engagement Index (EEI)						
		GENERATIONS				SUPERVISORY STATUS		
Potential Drivers		Traditionalists	Baby Boomers	Gen X	Millennials	Non-supervisory	Supervisor	Executive
1.	Performance Feedback	0.23	0.25	0.26	0.27	0.26	0.26	0.28
2.	Collaborative/Cooperative Management	0.25	0.25	0.24	0.23	0.24	0.24	0.22
3.	Merit System Principles	0.15	0.16	0.16	0.15	0.16	0.17	0.20
4.	Employee Training & Development	0.12	0.13	0.14	0.16	0.14	0.14	0.14
5.	Work/Life Balance	0.15	0.12	0.11	0.11	0.12	0.11	0.09
6.	Job Resources	0.10	0.09	0.09	0.09	0.09	0.10	0.09
7.	Performance Recognition & Reward	0.06	0.06	0.07	0.08	0.07	0.07	0.04
8.	Performance Rating	0.05	0.07	0.06	0.04	0.06	0.06	0.07
9.	Supportive Coworkers	0.04	0.04	0.04	0.05	0.04	0.04	0.04
	N	4,027	158,481	125,646	33,999	247,360	45,748	29,045
	R ²	0.8812	0.8774	0.8788	0.8696	0.8785	0.8576	0.8626
	Adjusted R ²	0.8790	0.8773	0.8788	0.8693	0.8784	0.8573	0.8622

NOTES:

- Total N = 421,748
- OLS standardized regression coefficients are shown.
- Factors with standardized regression coefficients of 0.10 or above were identified as a “key driver”. Coefficients meeting this threshold are **bolded**.
- Generations are defined as: *Traditionalists* (born 1945 or earlier), *Baby Boomers* (born 1946 – 1964), *Generation X* (born 1965 – 1980), and *Millennials* (born 1981 or later).
This OLS regression model controlled for agency, supervisory status, gender, minority status, and agency tenure.
- For Supervisory Status, the OLS regression model controlled for agency, gender, minority status, age group, and agency tenure.

Table 20. OLS Regression Results: Drivers of the EEI by Military Service, Agency Tenure, and Telework Status

		Employee Engagement Index (EEI)							
		MILITARY SERVICE		AGENCY TENURE			TELEWORK STATUS		
Potential Drivers		No Service	Some Military Service	Less than 4 years	4-10 years	More than 10 years	Telework	Barrier to Telework	Chooses not to telework
1.	Performance Feedback	0.27	0.25	0.26	0.26	0.26	0.27	0.26	0.25
2.	Collaborative/Cooperative Management	0.24	0.24	0.25	0.24	0.24	0.24	0.24	0.25
3.	Merit System Principles	0.16	0.17	0.15	0.17	0.16	0.16	0.16	0.15
4.	Employee Training & Development	0.14	0.14	0.14	0.14	0.13	0.14	0.14	0.14
5.	Work/Life Balance	0.11	0.12	0.12	0.11	0.11	0.11	0.12	0.11
6.	Job Resources	0.10	0.09	0.09	0.09	0.10	0.10	0.09	0.10
7.	Performance Recognition & Reward	0.07	0.06	0.06	0.07	0.07	0.07	0.06	0.07
8.	Performance Rating	0.06	0.06	0.05	0.06	0.06	0.06	0.06	0.06
9.	Supportive Coworkers	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
	N	228,073	91,216	44,219	119,574	158,360	151,657	127,556	39,247
	R ²	0.8725	0.8844	0.8797	0.8758	0.8758	0.8612	0.8801	0.8705
	Adjusted R ²	0.8724	0.8843	0.8795	0.8757	0.8758	0.8611	0.8801	0.8703

NOTES:

1. Total N = 421,748
2. OLS standardized regression coefficients are shown.
3. Factors with standardized regression coefficients of 0.10 or above were identified as a “key driver”. Coefficients meeting this threshold are **bolded**.
4. For military service and telework status, the OLS regression models controlled for agency, supervisory status, gender, minority status, age group, and agency tenure.
5. For Agency tenure, the OLS regression model controlled for agency, supervisory status, gender, minority status, and age group.
6. Barriers to telework include being required to be physically present, technical issues, and no approval.

Table 21. OLS Regression Results: Drivers of the EEI by Mission-Critical Occupations (MCOs)

		Employee Engagement Index (EEI)					
		MISSION-CRITICAL OCCUPATIONS (MCOs)					
Potential Drivers		Auditor	Contract Specialist	Economist	HR Specialist	IT Specialist	Non-MCO
1. Performance Feedback		0.26	0.26	0.24	0.25	0.26	0.26
2. Collaborative/Cooperative Management		0.23	0.25	0.22	0.27	0.25	0.24
3. Merit System Principles		0.15	0.13	0.16	0.15	0.16	0.16
4. Employee Training & Development		0.14	0.16	0.12	0.13	0.13	0.14
5. Work/Life Balance		0.08	0.11	0.12	0.13	0.10	0.12
6. Job Resources		0.12	0.08	0.10	0.09	0.10	0.09
7. Performance Recognition & Reward		0.07	0.09	0.11	0.07	0.07	0.07
8. Performance Rating		0.06	0.08	0.08	0.06	0.08	0.06
9. Supportive Coworkers		0.06	0.03	0.05	0.04	0.04	0.04
	N	4,875	6,157	1,840	5,926	16,521	283,459
	R ²	0.8754	0.8782	0.8507	0.8900	0.8730	0.8775
	Adjusted R ²	0.8736	0.8768	0.8455	0.8885	0.8724	0.8774

NOTES:

- Total N = 421,748
- OLS standardized regression coefficients are shown.
- Factors with standardized regression coefficients of 0.10 or above were identified as a “key driver”. Coefficients meeting this threshold are **bolded**.
- The model controlled for agency, supervisory status, gender, minority status, age group, and agency tenure.
- Mission-Critical Occupations (MCOs) are defined as those where staffing gaps could affect the ability of agencies across the government to carry out their mission (<http://www.gao.gov/products/GAO-15-223>). OPM and the Chief Human Capital Officer (CHCO) Council identified six occupation areas of concern: auditor, contract specialist/acquisitions, economist, human resource specialist, information technology/cybersecurity, and the Science, Technology, Engineering, and Mathematics (STEM) functional community (<http://www.gao.gov/products/GAO-15-223>). In the current analysis, we only examined five of these MCOs.
- We used the following Occupational Series Codes: Auditor – 0511; Contract Specialist – 1102; Economist – 0110; HR Specialist – 0201; and IT Specialist – 2210.

Table 22. OLS Regression Results: Drivers of the Leaders Lead Subindex

Potential Drivers	Leaders Lead							
	2013	2014	2015	DHS	EPA	Small Agencies	SBA	
1. Performance Feedback	0.06	0.02	0.01	0.02	0.01	0.03	0.00	
2. Collaborative/Cooperative Management	0.45	0.46	0.48	0.47	0.44	0.41	0.40	
3. Merit System Principles	0.22	0.22	0.21	0.20	0.24	0.23	0.25	
4. Employee Training & Development	0.07	0.07	0.07	0.08	0.10	0.10	0.10	
5. Work/Life Balance	0.02	0.00	0.01	0.02	-0.01	-0.02	0.01	
6. Job Resources	0.07	0.08	0.07	0.07	0.11	0.09	0.12	
7. Performance Recognition & Reward	0.15	0.14	0.14	0.16	0.13	0.13	0.20	
8. Performance Rating	0.02	0.02	0.02	0.01	0.00	0.00	-0.04	
9. Supportive Coworkers	-0.01	-0.02	-0.01	-0.02	-0.01	0.02	-0.02	
	N	287,281	298,321	322,165	33,972	3,372	2,491	1,021
	R ²	0.7633	0.7321	0.7412	0.7693	0.6871	0.7729	0.7373
	Adjusted R ²	0.7632	0.7321	0.7412	0.7691	0.6850	0.7690	0.7312

NOTES:

1. OLS standardized regression coefficients are shown.
2. Factors with standardized regression coefficients of .10 or above were identified as a “key driver”. Coefficients meeting this threshold are **bolded**.
3. Each model controlled for agency, supervisory status, gender, minority status, age group, and agency tenure.
4. Agencies were selected based upon variation in their sizes (e.g., number of employees who responded to the 2015 FEVS) and/or EEI scores. The number of employees who responded for the three Department/Large Agencies were as follows: DHS—43,090; EPA—4,456; and SBA—1,303. For the Small/Independent Agencies, the average number of employees that responded was 114.
5. Due to the small number of employees who work in many of the Small/Independent Agencies, the analyses were conducted with the employees from all 45 participating agencies as one group. [Appendix II](#) contains the list of these agencies.

Table 23. OLS Regression Results: Drivers of the Supervisors Subindex

Potential Drivers	Supervisors							
	2013	2014	2015	DHS	EPA	Small Agencies	SBA	
1. Performance Feedback	0.58	0.59	0.59	0.62	0.57	0.58	0.67	
2. Collaborative/Cooperative Management	0.04	0.03	0.02	0.02	0.01	-0.01	0.02	
3. Merit System Principles	0.08	0.09	0.09	0.08	0.05	0.10	0.09	
4. Employee Training & Development	0.03	0.03	0.03	0.02	0.06	0.03	0.01	
5. Work/Life Balance	0.27	0.26	0.26	0.26	0.25	0.25	0.19	
6. Job Resources	-0.01	-0.01	-0.01	-0.01	0.00	0.00	0.00	
7. Performance Recognition & Reward	0.01	0.02	0.01	0.00	0.03	0.03	0.03	
8. Performance Rating	0.00	-0.01	-0.01	-0.02	0.04	0.00	-0.02	
9. Supportive Coworkers	0.05	0.05	0.05	0.06	0.05	0.06	0.06	
	N	287,316	298,463	322,316	33,983	3,374	2,491	1,022
	R ²	0.8285	0.8272	0.8294	0.8168	0.8129	0.8292	0.8618
	Adjusted R ²	0.8285	0.8272	0.8293	0.8167	0.8116	0.8262	0.8586

NOTES:

1. OLS standardized regression coefficients are shown.
2. Factors with standardized regression coefficients of .10 or above were identified as a “key driver”. Coefficients meeting this threshold are **bolded**.
3. Each model controlled for agency, supervisory status, gender, minority status, age group, and agency tenure.
4. Agencies were selected based upon variation in their sizes (e.g., number of employees who responded to the 2015 FEVS) and/or EEI scores. The number of employees who responded for the three Department/Large Agencies were as follows: DHS—43,090; EPA—4,456; and SBA—1,303. For the Small/Independent Agencies, the average number of employees that responded was 114.
5. Due to the small number of employees who work in many of the Small/Independent Agencies, the analyses were conducted with the employees from all 45 participating agencies as one group. [Appendix II](#) contains the list of these agencies.

Table 24. OLS Regression Results: Drivers of the Intrinsic Work Experience Subindex

Potential Drivers	Intrinsic Work Experience							
	2013	2014	2015	DHS	EPA	Small Agencies	SBA	
1. Performance Feedback	0.07	0.06	0.06	0.05	0.07	0.06	0.11	
2. Collaborative/Cooperative Management	0.11	0.10	0.10	0.10	0.11	0.12	0.08	
3. Merit System Principles	0.11	0.11	0.11	0.13	0.13	0.10	0.12	
4. Employee Training & Development	0.28	0.28	0.29	0.28	0.27	0.30	0.21	
5. Work/Life Balance	0.02	0.02	0.02	0.02	-0.01	0.02	0.03	
6. Job Resources	0.20	0.20	0.20	0.21	0.19	0.19	0.18	
7. Performance Recognition & Reward	0.01	0.01	0.01	0.04	-0.01	-0.01	0.07	
8. Performance Rating	0.16	0.16	0.16	0.15	0.19	0.16	0.20	
9. Supportive Coworkers	0.08	0.08	0.08	0.06	0.09	0.12	0.07	
	N	287,317	298,465	322,322	33,982	3,374	2,491	1,022
	R ²	0.6759	0.6788	0.6912	0.7134	0.6698	0.7489	0.7279
	Adjusted R ²	0.6759	0.6787	0.6911	0.7132	0.6675	0.7446	0.7216

NOTES:

1. OLS standardized regression coefficients are shown.
2. Factors with standardized regression coefficients of .10 or above were identified as a “key driver”. Coefficients meeting this threshold are **bolded**.
3. Each model controlled for agency, supervisory status, gender, minority status, age group, and agency tenure.
4. Agencies were selected based upon variation in their sizes (e.g., number of employees who responded to the 2015 FEVS) and/or EEI scores. The number of employees who responded for the three Department/Large Agencies were as follows: DHS—43,090; EPA—4,456; and SBA—1,303. For the Small/Independent Agencies, the average number of employees that responded was 114.
5. Due to the small number of employees who work in many of the Small/Independent Agencies, the analyses were conducted with the employees from all 45 participating agencies as one group. [Appendix II](#) contains the list of these agencies.