The Roles of Feedback, Autonomy, and Meaningfulness in Employee Performance Behaviors
August 2018

In Brief

It is a merit system principle that the "Federal work force should be used efficiently and effectively."[1] Decades of social science research show that knowledge-based workers will be more likely to think creatively and be motivated to be high-performing employees if management provides a balance of feedback and autonomy. Feedback also can help employees to see the importance of their work and provide a basic structure to help them know what efforts will successfully foster a meaningful result.

This publication, building on previous MSPB research regarding employee engagement and motivation, presents selected data from our 2016 and 2010 Merit Principles Surveys (MPSs).[2] It briefly discusses the roles of feedback, autonomy, and meaningfulness, and demonstrates their relationship to positive employee performance behaviors.

Introduction

We combined several MPS questions to create composite measures for feedback, autonomy, and meaningfulness. We also created a "Performance Behaviors Composite" (PBC) by combining 15 questions.[3] For each composite, we separated the respondents into 3 groups of approximately equal size based upon their composite results (stronger, moderate, and weaker) to allow for comparisons between groups. The Methodology Appendix provides further information on the construction of the composites and their measurement properties.[4]

Feedback

Feedback is communication about performance expectations, progress, strengths, weaknesses, and recommendations for the future.[5] In recent years, the importance of feedback has been emphasized in literature regarding performance management.[6] However, not all feedback is effective. Research shows that general feedback or scattershot feedback may serve to distract an

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[1] 5 U.S.C. § 2301.

[2] To reduce the burden on survey respondents, some questions are not asked on every iteration of the MPS. The most recent information has been used where it is available. *See* the Methodology Appendix for more information on the MPS.

[3] The items used to construct the three main composites are as follows. **Feedback composite**: (1) "My supervisor provides timely feedback on my job performance;" and (2) "My supervisor provides constructive feedback on my job performance." **Autonomy composite**: (1) "I am empowered to do my work the way I see best;" (2) "I like the amount of autonomy and decision making in my work;" and (3) "I can apply my insights and ideas to my work without holding back." **Meaningfulness composite**: (1) "My work supports a purpose, cause, or mission that is important to me;" (2) My work gives me a good opportunity to make a meaningful difference or impact;" and (3) "The work I do is important." Please see the Methodology Appendix for the 15-item PBC.

[4] We also compared the three main composite measures to other "positive" items, such as overall satisfaction with supervisors, to examine the potential that a sense of overall positivity may be responsible for the results. However, as explained in the Methodology Appendix, the data indicate feedback, autonomy, and meaningfulness had an independent relationship to performance behaviors outside of satisfaction with supervisors.

[5] While our feedback composite is designed around feedback from supervisors, valuable feedback can come from other sources such as customers, peers, or subordinates. The MPS questions did not include a definition of feedback.

[6] Feedback was one of the five characteristics of the job we used to discuss employee motivation in our 2012 report, *The Motivating Potential of Job Characteristics and Rewards*, *available at* www.mspb.gov/studies.

employee from the goal, while feedback that is timely, specific, and future-oriented "allows performers to diagnose performance problems and to adjust strategies as needed."[7] Such feedback also assists the employee to know which tasks or missions should receive greater attention, and not just by having a supervisor give a directive order about priorities, as employees can react negatively to being micro-managed. Rather, by choosing which things to discuss, management is – in effect – sending a message about which things matter while still empowering employees to organize their work appropriately. Research shows that timely and specific feedback can make a task more attractive to the employee.[8] "By resolving feelings of uncertainty, feedback keeps people's work-related activities focused on… organizational goals. The quicker and more direct the feedback, the more useful it is."[9]

Feedback's Relationship to Performance Behaviors

The 2016 MPS data show that respondents with stronger feedback (timely and constructive) were more than twice as likely to report stronger performance behaviors compared to those who reported moderate or weaker feedback, as shown in Figure 1.

Figure 1: Strength of Feedback and Performance Behavior Composite (PBC) Results

> *Respondents with stronger feedback were more than twice as likely to report stronger performance behaviors compared to those who reported moderate or weaker feedback.*
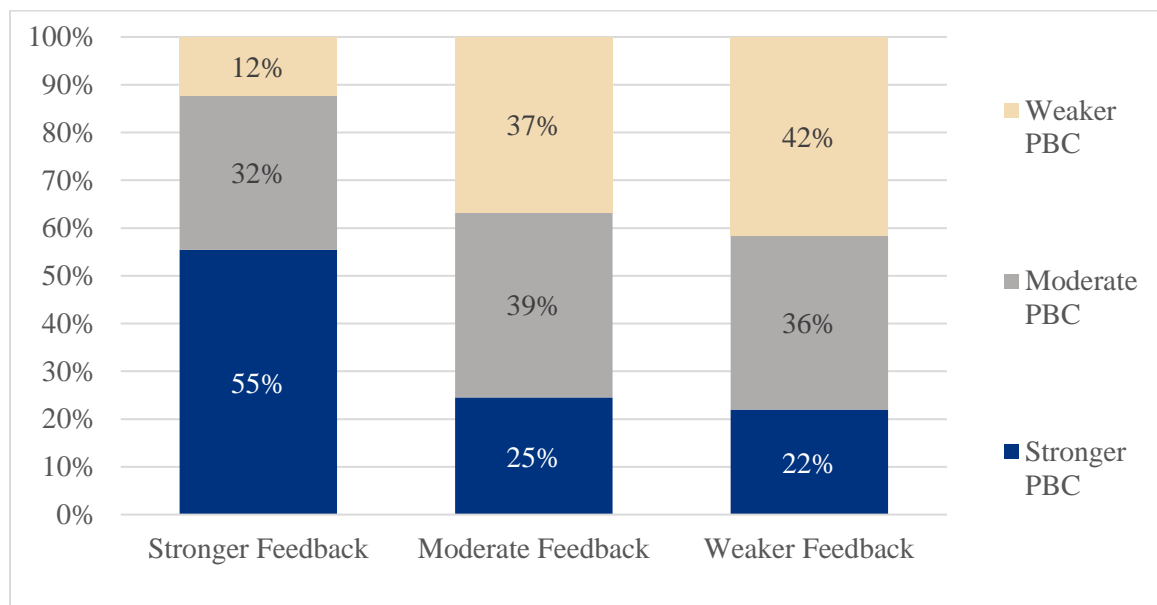
Note: Totals may not equal 100% due to rounding.

To adapt to rapidly evolving challenges, the civil service needs people who can (and will) think creatively and innovatively. Academic research shows that when feedback is seen as "constructive, informative, understanding, and supportive," the feedback recipient is more likely to maintain or increase his or her level of creativity.[10] MPS respondents with stronger feedback were more than twice as likely to report they were creative/innovative to a great extent compared to those with weaker feedback (43% vs. 19%). (*See* Figure A in the Data Appendix.)

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[7] Gregory B. Northcraft and Aaron M. Schmidt, "Feedback and the Rationing of Time and Effort Among Competing Tasks," *Journal of Applied Psychology* (2011), Vol. 96, No. 5, at 1076, 1083.

[8] *Id.*

[9] Gretchen Spreitzer and Christine Porath, "Creating Sustainable Performance," *Harvard Business Review* (Jan.-Feb. 2012) *available at* https://hbr.org/2012/01/creating-sustainable-performance. We discussed the importance of timely and constructive feedback in our 2015 publication, *Performance is More than an Appraisal*, *available at* www.mspb.gov/studies/noteworthyarchive.htm.

[10] Jing Zhou, "Feedback Valence, Feedback Style, Task Autonomy, and Achievement Orientation: Interactive Effects on Creative Performance," *Journal of Applied Psychology* (1998), Vol. 83, No. 2, at 261, 262-63.

Feedback's Relationship to Performance Appraisals

Timely and constructive feedback is a major component of effective performance management. Survey respondents with stronger feedback were more likely to report receiving the highest possible performance appraisal rating from their supervisors compared to those with moderate or weaker feedback (61%, 50%, and 42%, respectively).[11] Respondents in the stronger feedback group were also more likely to strongly agree that they know what is expected of them on the job compared to those with moderate or poor feedback (73%, 25%, and 17%, respectively). (*See* Figure B in the Data Appendix for more detail.)

The data also show that good feedback is associated with a better annual performance review experience. The 2016 MPS asked respondents if they agreed that, "My last annual performance review made me feel more enthusiastic about my work." Nearly three-quarters of those with good feedback agreed, while slightly less than half of those with moderate feedback and 17% of those with poor feedback agreed. (*See* Figure C in the Data Appendix for more detail.) If an employee is given guidance along the way, then the destination (annual review) should serve as positive reinforcement that the employee has done what was asked. In contrast, if the employee is not given timely and constructive feedback, the employee may feel frustrated about expending so much effort while being denied the necessary guidance to direct the effort more effectively.[12]

Survey respondents with stronger feedback were more likely to report receiving the highest possible performance appraisal rating from their supervisors.

Timeliness and Constructiveness

Timely Feedback. In the private sector, many companies are either abandoning the annual appraisal or limiting its importance in favor of continuous feedback.[13] In the civil service, both statute and regulations require the use of an appraisal system that provides annual summary levels of performance. But, they do not mandate that agencies rely on the annual cycle to provide communication. Rather, the regulations instruct that there will be "one or more progress reviews during each appraisal period."[14] While agencies are free to perform this function in whatever manner their (OPM-approved) systems require, the MPS data show that – for good performance management – timely feedback may be an excellent way to accomplish this communication.

Data from our 2010 MPS show that employees who receive feedback more frequently are more likely to find that feedback helpful. For example, of those who received weekly feedback, 57% said feedback was very helpful, while of those who received feedback two or fewer times per year, less than 15% said that feedback was very helpful. To make feedback helpful, supervisors can – and should – discuss performance with employees beyond formal appraisal meetings.

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[11] Percentage of those with the highest possible rating in an appraisal system with multiple levels of success.

[12] *See also* Rose Mueller-Hanson and Elaine Pulakos, *Transforming Performance Management to Drive Performance: An Evidence-based Roadmap* (2018), at 6 (explaining that employees can become "resentful" if negative feedback was not shared with them prior to the formal performance review).

[13] *See, e.g*., Jeff Kauflin, "Hate Performance Reviews? Good News: They're Getting Shorter and Simpler," *Forbes* (Mar. 9, 2017) *available at* https://www.forbes.com/sites/jeffkauflin/2017/03/09/hate-performance-reviews-good-news-theyre-getting-shorter-and-simpler/#2e1d3506384e (explaining that instead of relying on annual reviews, "companies are adopting shorter, more continuous feedback practices and it's having a positive impact on their business"); Patrick May, "Companies Reimagining the Annual Performance Review," *Detroit News* (Sep. 13, 2015) *available at* http://www.detroitnews.com/story/business/personal-finance/2015/09/13/companies-re-imagining-annual-performance-review/72232702/ (explaining that companies are abandoning annual performance reviews in favor of ongoing feedback); Dana Wilkie, "Is the Annual Performance Review Dead," *Society for Human Resource* Management (Aug. 19, 2015) *available at* https://www.shrm.org/resourcesandtools/hr-topics/employee-relations/pages/performance-reviews-are-dead.aspx (explaining that "Progressive HR leaders are realizing that they need continuous, real-time feedback"). *Cf.* Google, "Google's Manager Feedback Study, re: Work, *available at* https://rework.withgoogle.com/guides/managers-give-feedback-to-managers/steps/try-googles-manager-feedback-survey (on the importance of providing "actionable feedback on a regular basis").

[14] 5 U.S.C. § 4314(a); 5 C.F.R. § 430.206 ("The appraisal period generally shall be 12 months so that employees are provided a rating of record on an annual basis.").

Constructive Feedback. Constructiveness also plays an important role in the value of feedback. The data from our 2010 MPS show that if feedback is timely but not constructive, only 41% will report feeling inspired to do their best work, while if it is constructive but not timely, then 58% will feel inspired. Among those who agreed that the feedback was both constructive and timely, 88% felt inspired to do their best work. One thing that can help make feedback more constructive is the tone of that feedback. Research shows that "discouraging feedback" can have "a strong negative effect on subsequent performance." Rather than focus on past mistakes, feedback should be forward-focused on how the employee can have the ability to do better in the future.[15]
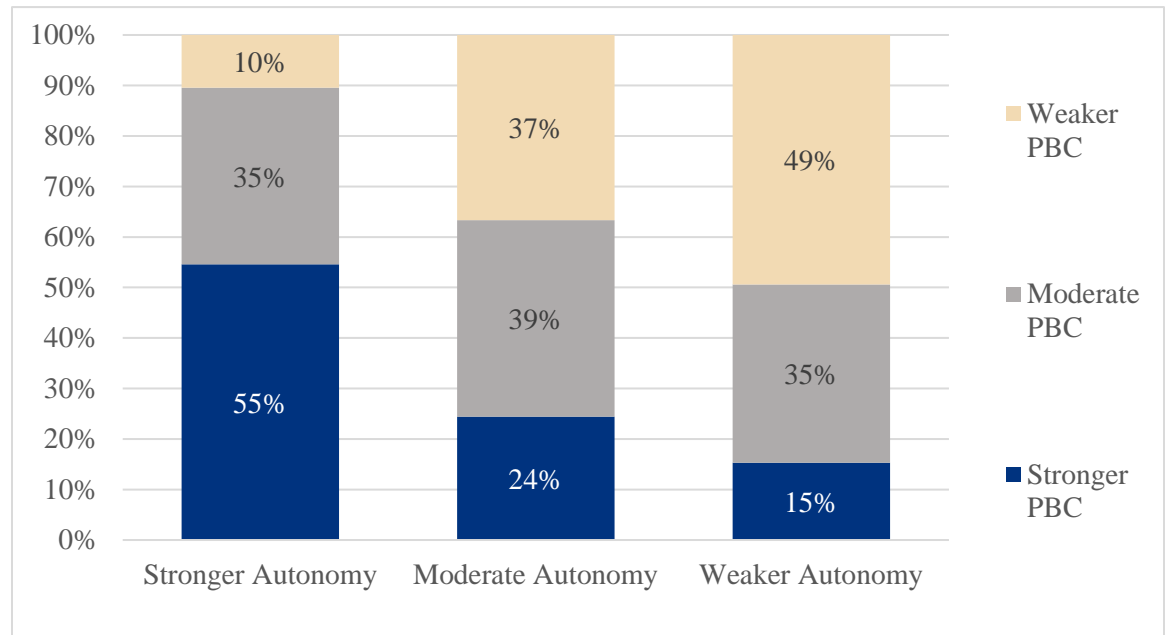
Autonomy

> *The more freedom employees have to make decisions and to direct the activities of their work, the greater their motivation to perform that work.*

Autonomy is the degree of freedom that employees have to make decisions about how to accomplish their work. Research shows that, generally, the more freedom employees have to make decisions and to direct their work activities, the greater their motivation to perform that work. As we explained in our 2012 report on motivation, "employees in jobs with high perceived levels of autonomy are more likely to be highly motivated – and perform at a higher level – than employees who believe that they have little autonomy."[16] The report recommended increasing employee autonomy to the extent permitted by mission requirements and employees' capabilities.

Autonomy's Relationship to Performance Behaviors

As with feedback, autonomy had a strong relationship to the 15-item PBC, as shown in Figure 2.

Figure 2: Strength of Autonomy and Performance Behavior Composite Results

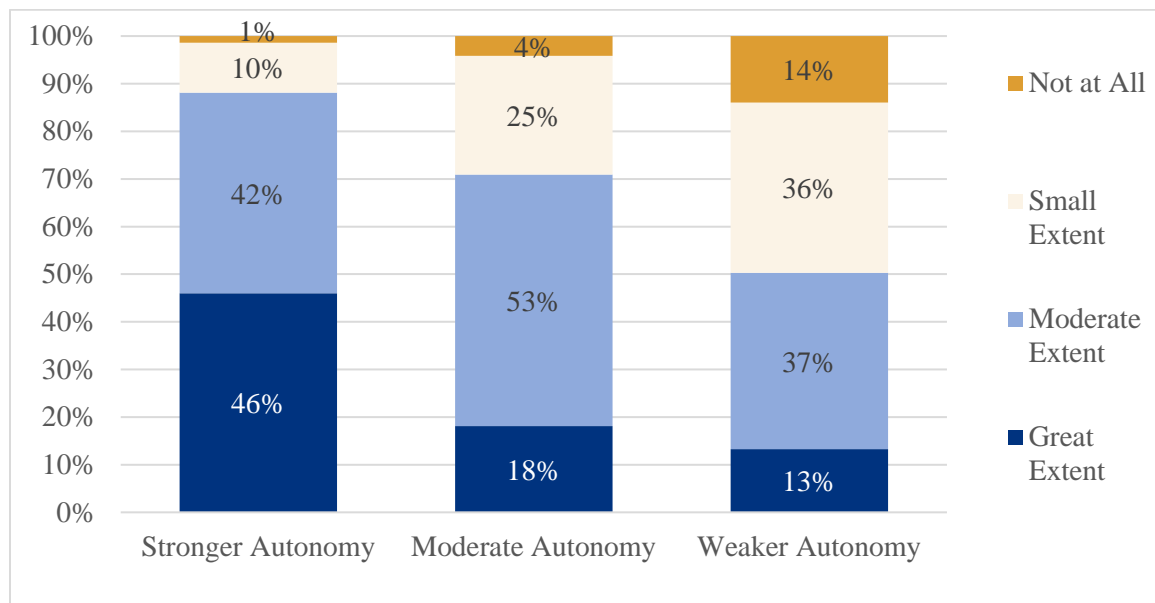
Note: Totals may not equal 100% due to rounding.

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[15] Elaine Y. Chou, *et al.*, "The Goldilocks Contract: The Synergistic Benefits of Combining Structure and Autonomy for Persistence, Creativity, and Cooperation," *Journal of Personality and Social Psychology* (2017), Vol. 113, No. 3, 393, 394. There is even evidence that different parts of the brain are involved in responding to different styles of feedback. Fuhong Li, *et al.*, "Electrophysiological Response to the Informative Value of Feedback Revealed in a Segmented Wisconsin Card Sorting Test," *Frontiers in Psychology*, Vol. 9, Art. 57 (Feb. 5, 2018), at 2. *See* U.S. Merit Systems Protection Board, *Performance Is More than an Appraisal*, "Feedback Should Focus on the Future, not the Past" (Dec. 2015) at 5, *available at* www.mspb.gov/studies/noteworthyarchive.htm.

[16] U.S. Merit Systems Protection Board, *Federal Employee Engagement: The Motivating Potential of Job Characteristics and Rewards* (2012), at 9, ii, *available at* www.mspb.gov/studies. Studies also have shown other positive benefits from autonomy, including increased job satisfaction, increased productivity, reductions in stress levels, better coronary health, and lower quit rates. *Quartz*, "The Key to Happiness at Work Isn't Money–It's Autonomy," *available at* https://qz.com/676144/why-its-your-call-is-the-best-thing-you-can-say-to-keep-employees-happy/.

The performance behavior with one of the strongest relationships to autonomy was trying creative or innovative things. As shown in Figure 3, respondents with stronger autonomy were far more likely to state that they try creative/innovative things in their work to a great extent compared to those with moderate or weaker autonomy.

> *Respondents with stronger autonomy were far more likely to state that they try creative/innovative things in their work to a great extent compared to those with moderate or weaker autonomy.*

Figure 3: Autonomy and Extent to Which Respondent Would Try Creative/Innovative Things

Note: Totals may not equal 100% due to rounding.

For some positions with very rigid procedures or standardized tasks, this lack of creativity may be acceptable or even desirable. However, for agencies that would prefer innovative ideas, it seems that a lack of autonomy could be costly.

Our 2010 MPS asked respondents if they agreed that their jobs gave them the freedom to make decisions regarding how they accomplished their work. Of those who agreed, 81% also agreed with the statement, "I feel highly motivated in my work." Of those who disagreed that they had this autonomy, only 37% felt highly motivated. The 2016 data show a similar outcome when employees were asked about engagement. Of those with a stronger autonomy composite result, 71% strongly agreed that they felt engaged in their jobs, compared with 31% of those with moderate and 12% of those with weaker autonomy. (*See* Figure D in the Data Appendix for further details.)

Autonomy's Relationship to Performance Appraisals

Given autonomy's relationship with performance behaviors, it is not surprising that stronger autonomy was associated with a higher appraisal rating compared to moderate or weaker autonomy (62%, 50%, and 37%, respectively).[17]

Relationship between Autonomy and Feedback

Along with autonomy comes the expectation that employees will apply that autonomy correctly. Among other things, this requires that they be given the information necessary to direct their

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[17] Autonomy can often be a function of supervisory status and supervisory status often has a relationship to the appraisal rating. However, this pattern of stronger autonomy having a relationship to the appraisal level existed separately in both the supervisory (66%, 51%, and 45%) and non-supervisory (61%, 49%, and 35%) respondent groups.

efforts.[18] Even when employee autonomy is limited, feedback may – to varying degrees – still help improve performance behaviors. Figure 2 showed that autonomy, in general, is associated with stronger PBC results. But, our data also show that autonomy is not acting alone. For example, within the stronger autonomy group, those with stronger feedback were more likely to be in the stronger PBC group than those with moderate or weaker feedback (68%, 42%, and 42%, respectively.) Thus, while Figure 1 shows the potential benefit of feedback and Figure 2 shows the potential benefit of autonomy, the two working together produce an even more beneficial result. (*See* Figure E in the Data Appendix for more details.)

> *Feedback is a way to tell employees that they have ownership.*

One way in which feedback fosters positive outcomes is by providing structure to the autonomy. Feedback is a way to tell employees that they have ownership. Too little feedback, and an employee may feel frustrated by the lack of direction. Too much, and an employee may feel like an automaton (a mechanical device mindlessly following orders).[19] When feedback is seen as "informational" it can be empowering, while "controlling" feedback is more likely to be inhibiting or restraining.[20] An employee who believes that autonomy is being unreasonably withheld may want to withhold his or her best efforts as a means of restoring balance.[21]

We asked our 2016 MPS respondents whether it was important to "closely direct employee's work so they do not make bad decisions," and less than 20% agreed. We also asked if it was "important to let employees choose how to do their work, even if they sometimes make bad decisions," and over 50% agreed. Supervisors were even more inclined than non-supervisors to state that this ability to choose was important, even if it resulted in mistakes (62% of supervisors vs. 50% of non-supervisors). So, both supervisors and employees appreciate – in the abstract – the importance of autonomy. But, it is when individual supervisors make these decisions to grant or withhold autonomy that theory becomes practice. And supervisors may not be thinking of the larger questions of what it means for employees to have this autonomy when making their day-to-day choices.[22] One of purpose of this research brief is to show why they should.

Meaningfulness

Work is meaningful when it has a significance, purpose, or value that makes a difference. It has been said that, "talented people demand meaningful work[.]"[23] While there is a perception that millennials, in particular, want meaningful work, the reality is that this is a basic desire regardless

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[18] Barbara Stiglbauer and Carrie Kovacs, "The More, the Better? Curvilinear Effects of Job Autonomy on Well-Being from Vitamin Model and PE-Fit Theory," *Perspectives Journal of Occupational Health Psychology* (Dec. 28, 2017), at 2.

[19] Elaine Y. Chou, *et al*., "The Goldilocks Contract: The Synergistic Benefits of Combining Structure and Autonomy for Persistence, Creativity, and Cooperation," *Journal of Personality and Social Psychology* (2017), Vol. 113, No. 3, 393, 394.

[20] Jing Zhou, "Feedback Valence, Feedback Style, Task Autonomy, and Achievement Orientation: Interactive Effects on Creative Performance," *Journal of Applied Psychology* (1998), Vol. 83, No. 2, at 261, 262-63.

[21] *See* Benjamin D. Rosenberg and Jason T. Siegel, "A 50-Year Review of Psychological Reactance Theory," *Motivation Science* (Dec. 21, 2017) (discussing five decades of research into how people resist when others seek to control their behavior); Christina Steindl, *et al*., "Understanding Psychological Reactance: New Developments and Findings," *Zeitschrift für Psychologie* (2015), Vol. 223(4), 205 (explaining that people may want to exhibit the prohibited behavior or not follow the request for the desired behavior).

[22] *See, e.g.,* "Is Your Boss Too Controlling? Many Employees Clash With Micromanagers," *National Public Radio*, *available at* https://www.npr.org/2017/07/17/537750774/is-your-boss-too-controlling-many-employees-clash-with-micromanagers (explaining how micromanagement "can kill motivation, employee creativity and job satisfaction"); Alexander Huls, "5 Ways Micromanaging Will Make Your Employees Hate You," *The Hartford*, *available at* https://sba.thehartford.com/managing-employees/5-ways-micromanaging-will-make-your-employees-hate-you/ (explaining why "micromanagement is mismanagement").

[23] Rabindra Kumar Pradhan, *et al*., "Purpose, Passion, and Performance at the Workplace: Exploring the Nature, Structure, and Relationship," *The Psychologist-Manager Journal*, Vol. 20, No. 4 (2017), at 239.

of age.[24] The 2016 MPS asked employees to identify from a list of 10 items which was the most important factor for them to feel engaged in a job. In every age group on our survey, "supporting a particular purpose, mission, or calling" was selected more often than any other single factor. Overall, nearly a third of respondents chose that option over one of the nine other items. (*See* Figure F in the Data Appendix for the complete list and percentage of respondents who chose each option.) This does not mean that other factors are unimportant, only that, in the eyes of the respondents, they were not as important as having meaningful work. This is consistent with our earlier research on public service motivation. For example, on the 2010 MPS, 90% of respondents reported agreement that public service was important to them.

> *Meaningfulness, like feedback and autonomy, is associated with stronger performance behaviors.*

Meaningfulness's Relationship to Performance Behaviors

Given that meaningfulness is important to employees' personal priorities, it is not surprising that it also has a relationship to employees' performance behaviors. As shown in Figure 4, meaningfulness, like feedback and autonomy, is associated with stronger performance behaviors.

Figure 4: Strength of Meaningfulness and Performance Behavior Composite Results
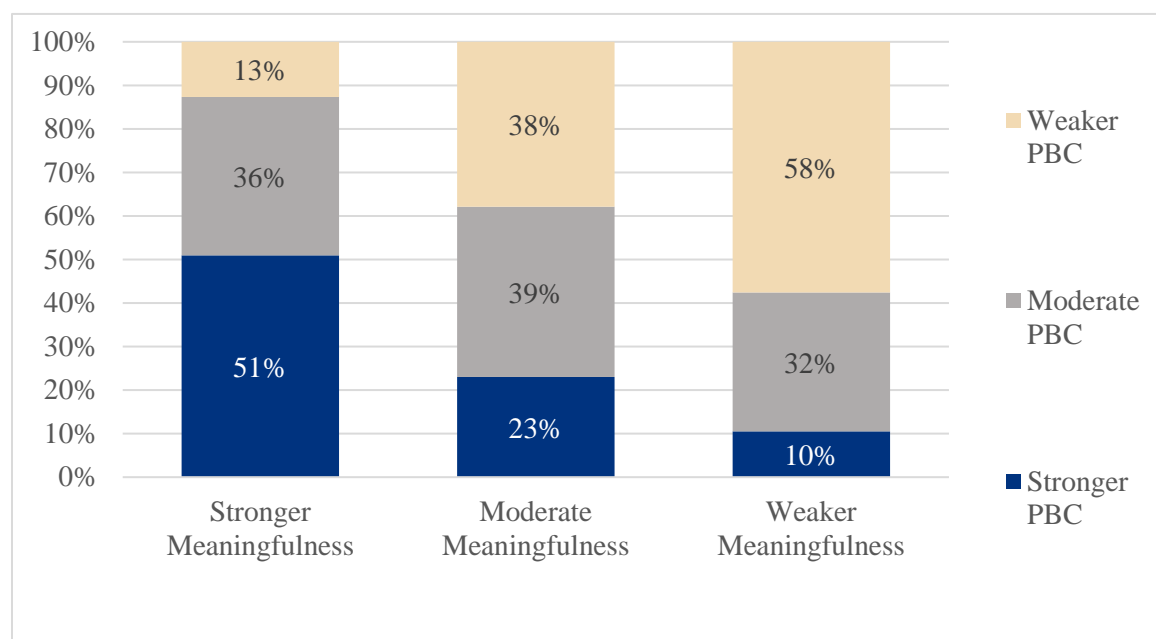
Meaningfulness's Relationship to Performance Appraisals

As with feedback and autonomy, stronger meaningfulness also was associated with a higher appraisal rating compared to moderate or weaker meaningfulness (57%, 48%, and 39%, respectively).[25]

Relationship between Meaningfulness and Feedback

The 2016 MPS data also indicate an interaction between meaningfulness and feedback, just as there was with autonomy and feedback. Within the stronger meaningfulness group, those with stronger feedback were more likely to be in the stronger PBC group than those with moderate or weaker feedback (68%, 41%, and 37%, respectively.) Thus, while Figure 1 shows the potential

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[24] Lauren Vesty, "Millennials want purpose over paychecks. So why can't we find it at work?" *The Guardian* (Sep. 14, 2016) *available at* https://www.theguardian.com/sustainable-business/2016/sep/14/millennials-work-purpose-linkedin-survey.

[25] *See* the Methodology Appendix for the items that comprise the meaningfulness composite.

benefit of feedback and Figure 4 shows the potential benefit of meaningfulness, the two working together generally tend to produce an even more beneficial result for performance behaviors. (*See* Figure G in the Data Appendix for more details.)

It is not surprising that people who are attracted to public service or meaningful work would seek out employment in the civil service. But, given these results, it is important for supervisors to emphasize the meaningfulness of the work to enhance employee performance. (Employees who receive services from other work units may also find it beneficial to help their providers understand the beneficial effects of the services being received.) In the private sector, one researcher found that meaningfulness was often "a thoughtful, retrospective act."[26] In other words, meaning is not just found by the individual when doing the work, but also when thinking about work that has been or will be done.

> *It is important for supervisors to emphasize the meaningfulness of the work to enhance employee performance.*

Feedback can be an opportunity to help employees to find the meaning in the work. "Moments of profound meaningfulness arose when [there was a] sense of a job well done, one recognized and appreciated by others."[27] It would be difficult for management to make work meaningful if meaning was not inherent in the work. But, supervisors "can encourage people to see their work as meaningful by demonstrating how jobs fit with the organization's broader purpose or serve a wider, societal benefit."[28] Managers can track and communicate the effects of the work being performed to show employees that their work matters. Researchers who conducted a series of 135 interviews found that "[f]eeling unrecognized, unacknowledged, and unappreciated by line or senior managers" can make work feel pointless.[29] This communication of meaningfulness may be especially important for jobs where tasks seem tedious.

By using feedback, supervisors may be able to enhance how that meaningfulness relates to employee performance. Data from the 2010 MPS show that for employees who received poor feedback, yet agreed that "meaningful public service" was important to them, 56% agreed that they were "prepared to make enormous sacrifices for the good of the agency." For those in the moderate feedback group, 57% agreed they would make such sacrifices. But, for those who received good feedback, 71% agreed they were prepared to make enormous sacrifices.

Federal agencies have a substantial advantage over many other employers because Federal agencies have meaningful missions to attract employees who care about those missions. As expressed in the preamble to the Constitution, the purpose of the Government includes establishing justice, insuring domestic tranquility, providing for the common defense, and promoting the general welfare. Communications from supervisors can help employees see how they serve that meaning. Conversely, poor managers can create the impression that the work being performed is meaningless to that larger, more important agency mission. It is not enough that the work has meaning in some abstract way as understood by the designers of the workforce planning documents. Rather, employees need to *feel* that the work has meaning to perform their best. As explained above, supervisors and managers can help make this happen.

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[26] Catherine Bailey and Adrian Madden, "What Makes Work Meaningful – or Meaningless," *MIT Sloan Management Review* (Summer 2016) *available at* https://sloanreview.mit.edu/article/what-makes-work-meaningful-or-meaningless/.

[27] *Id*.

[28] *Id*.

[29] *Id*.

Conclusion

Feedback, autonomy, and meaningful work can all play a role in employee performance behaviors. But, as shown in the discussion of our MPS data, these factors are most powerful and beneficial in combination. By providing feedback that is timely and constructive, offering the right degree of autonomy, and helping employees to see the meaning in their work, supervisors and managers can increase the potential that employees will engage in desirable performance behaviors. This is likely why feedback, autonomy, and meaningful work also are all associated with higher performance appraisal ratings.

Methodology Appendix

Survey Methodology

In July-September 2016, MSPB administered the Merit Principles Survey (MPS). MSPB has conducted the MPS periodically for more than 35 years. The MPS contains some questions that are asked in multiple administrations to track perceptions and some questions that are unique to a single survey administration. In 2016, to reduce the demands on survey respondents, the MPS was divided into three paths so that all respondents would only be asked a fraction of the total number of questions. The data discussed in this report comes from "Path 2" of that survey. Overall, 37,397 civilian employees were invited to respond to Path 2 and 14,473 responded, for a response rate of 38.7%. While the margin of error can vary by question, the margin of error on Path 2, with a 95% confidence interval, ranges from 0.50% to 4.40%.[30]

For information on the 2010 MPS methodology, please see our report, *Federal Employee Engagement: The Motivating Potential of Job Characteristics and Rewards* (2012), Appendix E, available at www.mspb.gov/studies.

Feedback, Autonomy, and Meaningfulness Composite Measures

To measure feedback, autonomy, and meaningfulness, MSPB used factor analysis to develop composites from a set of survey items related to each dimension. The survey items each had five response options (strongly agree, agree, neither agree nor disagree, disagree, and strongly disagree). The measure was the sum of the item responses, with "strongly agree" assigned a value of 5 and "strongly disagree" assigned a value of 1. We then assigned each employee to one of three groups (stronger, moderate, and weaker) of approximately equal size based on the measure responses. The items and groupings are summarized in the table below.

Dimensions	Items	Groups
Feedback	(1) "My supervisor provides timely feedback on my job performance." (2) "My supervisor provides constructive feedback on my job performance."	Stronger: 9-10 Moderate: 7-8 Weaker: 2-6
Autonomy	(1) "I like the amount of autonomy and decision making in my work." (2) "I can apply my insights and ideas without holding back." (3) "I am empowered to do my work the way I see best."	Stronger: 13-15 Moderate: 11-12 Weaker: 3-10
Meaningfulness	(1) "My work supports a purpose, cause, or mission that is important to me." (2) "The work I do is important." (3) My work gives me a good opportunity to make a meaningful difference or impact."	Stronger: 14-15 Moderate: 12-13 Weaker: 3-11

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[30] For more on the methodology for the 2016 MPS, please visit MSPB's Freedom of Information Act electronic reading room (e-FOIA), at www.mspb.gov.

Performance Behavior Composite (PBC) Measure

MSPB used factor analysis to develop the PBC. The survey items each had four response options (to a great extent, moderate extent, small extent, or not at all). The measure was the sum of the item responses, with "great extent" assigned a value of 4 and "not at all" assigned a value of 1. We then assigned each employee to one of three groups (stronger, moderate, and weaker) of approximately equal size based on the measure responses. Values of 56-60 were placed in the stronger PBC group, values of 47-55 were placed in the moderate PBC group, and values of 15-46 were placed in the weaker PBC group.

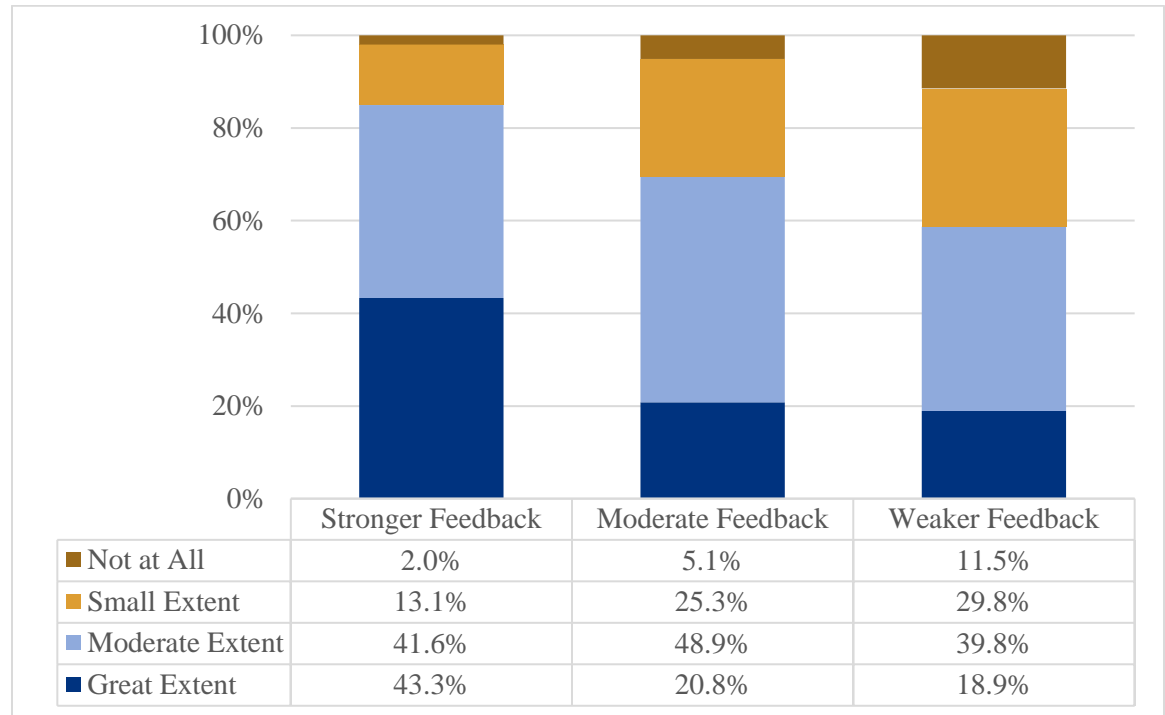The PBC asked: To what extent do you do the following things in your job?

1. Try creative or innovative things in my work.
2. Spread excitement about work to others.
3. Try to learn ways to do my work better.
4. Suggest ideas for new or different ways of doing work.
5. Look for potential problems, obstacles, or risks related to work.
6. Express my concerns about work matters.
7. Look for ways that I can help others with their work.
8. Take the initiative to collaborate with others on work.
9. Look for ways to solve work problems.
10. Take charge rather than wait for direction on my work.
11. Try to develop myself toward my potential.
12. Foster work-related discussion among my colleagues.
13. Voluntarily put in extra effort toward my work.
14. Look for ways to better apply my abilities at work.
15. Try to help my colleagues see their value and importance at work.

Common Method Bias

Common method bias refers to the risk that survey responses may result from a generally positive outlook by the respondents versus their views on the specific items being asked. To examine whether responses may have been influenced by a "generally positive" attitude toward each respondent's supervisor and not toward the questions being asked, we compared data for each composite to the survey question asking for agreement with the statement, "Overall, I am satisfied with my supervisor." The general trend of data associations remained. (For example, among those who were satisfied, the strength of feedback, autonomy, and meaningfulness still made a difference in the reported strength of the performance behaviors and reported annual performance appraisal level.) Thus, it is unlikely that general positivity can fully account for the distinctions found in the MPS data.

This publication was originally issued in August 2018 and reposted in February 2019 to correct errors in the description of the methodology. No other changes were made to this document.

Data Appendix

Figure A: *Strength of feedback and expressed extent to which the respondent will "try creative or innovative things in my work"*

	Stronger Feedback	Moderate Feedback	Weaker Feedback
■ Not at All	2.0%	5.1%	11.5%
■ Small Extent	13.1%	25.3%	29.8%
■ Moderate Extent	41.6%	48.9%	39.8%
■ Great Extent	43.3%	20.8%	18.9%

Figure B: *Strength of feedback and agreement with the statement "I know what is expected of me on the job"*

	Stronger Feedback	Moderate Feedback	Weaker Feedback
■ Strongly Disagree	0.2%	0.1%	5.4%
■ Disagree	0.5%	1.3%	8.7%
■ Neither Agree nor Disagree	2.0%	6.2%	20.3%
■ Agree	24.7%	67.6%	48.8%
■ Strongly Agree	72.6%	24.7%	16.9%
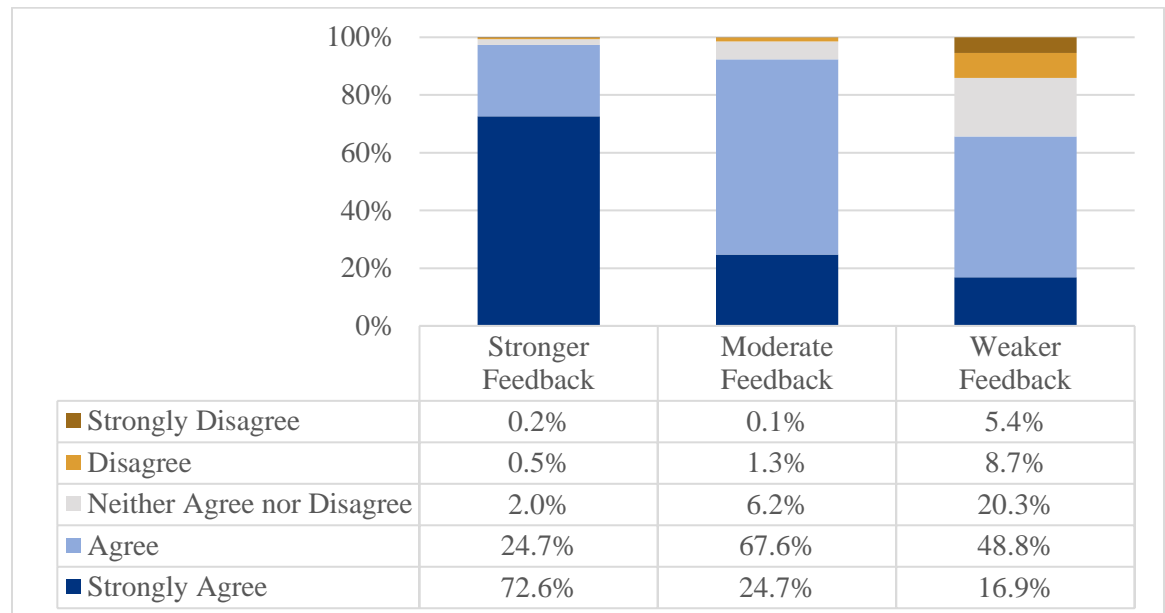
Figure C: *Strength of feedback and agreement with the statement "My last annual performance review made me feel more enthusiastic about my work"*

	Stronger Feedback	Moderate Feedback	Weaker Feedback
■ Strongly Disagree	3.8%	8.1%	32.8%
■ Somewhat Disagree	2.7%	7.6%	16.7%
■ Neither Agree nor Disagree	19.4%	35.0%	33.4%
■ Somewhat Agree	23.1%	31.6%	11.0%
■ Strongly Agree	51.0%	17.7%	6.2%
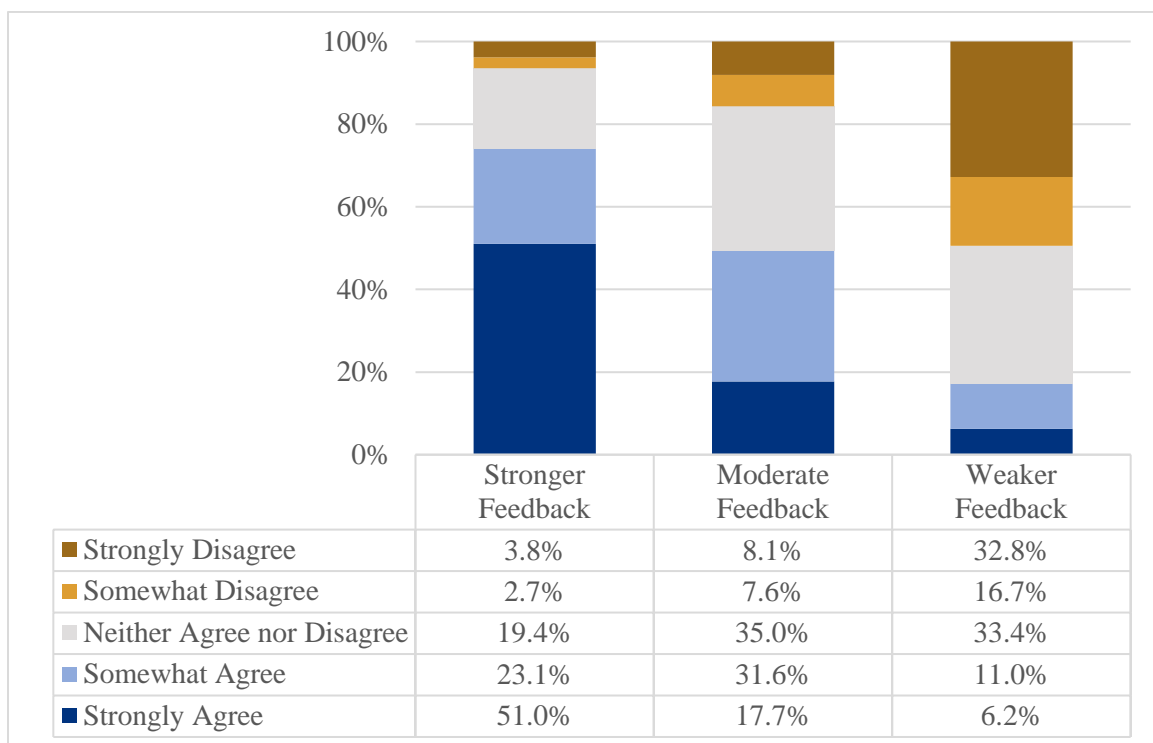
Figure D: *Strength of autonomy and agreement with the statement "I feel engaged in my job"*

	Stronger Feedback	Moderate Feedback	Weaker Feedback
■ Strongly Disagree	0.2%	0.3%	5.7%
■ Somewhat Disagree	0.6%	1.7%	12.2%
■ Neither Agree nor Disagree	1.9%	7.6%	28.7%
■ Somewhat Agree	26.0%	58.9%	41.3%
■ Strongly Agree	71.2%	31.4%	12.0%
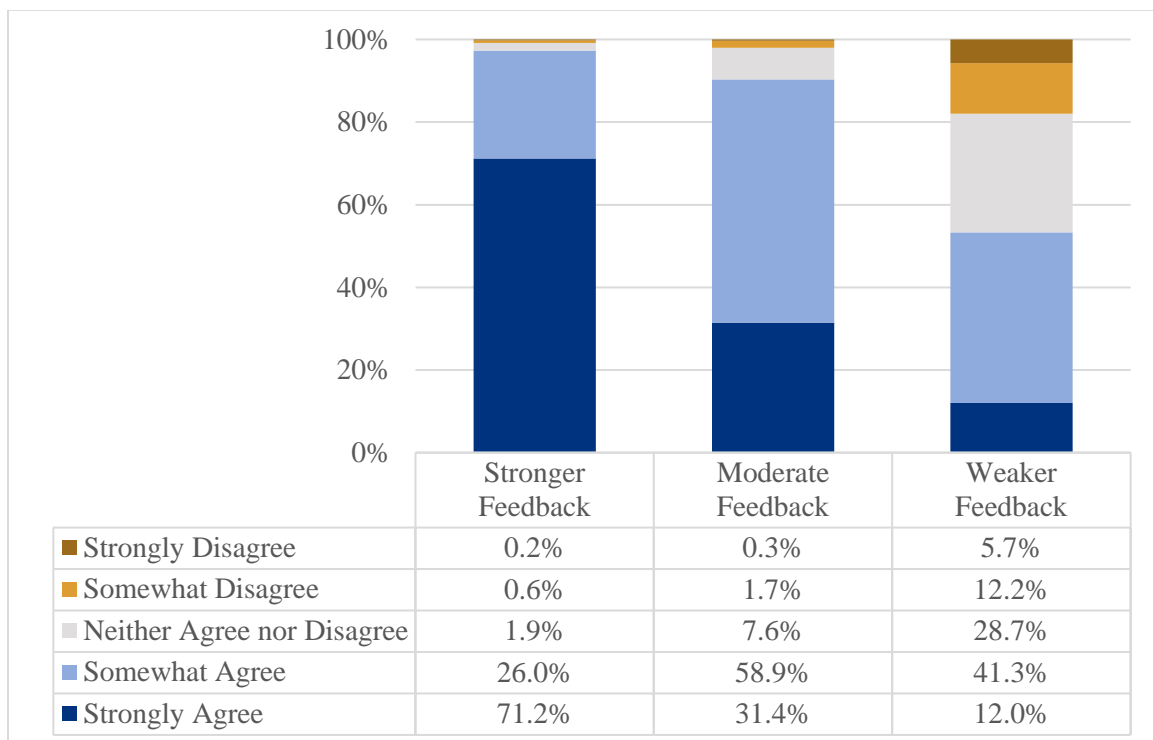
Figure E: *Relationship between autonomy, feedback, and performance behaviors*

		Stronger PBC	Moderate PBC	Weaker PBC
Stronger Autonomy	Stronger Feedback	67.6%	26.6%	5.8%
	Moderate Feedback	41.8%	41.9%	16.3%
	Weaker Feedback	41.1%	45.6%	13.3%
Moderate Autonomy	Stronger Feedback	35.3%	44.8%	20.0%
	Moderate Feedback	22.2%	38.4%	39.5%
	Weaker Feedback	22.2%	37.1%	40.8%
Weaker Autonomy	Stronger Feedback	24.0%	41.5%	34.5%
	Moderate Feedback	11.7%	36.9%	51.4%
	Weaker Feedback	15.9%	33.3%	50.8%

The MPS asks questions of a comparatively small number of people in order to identify what the likely views would have been had we posed the same questions to the entire (much larger) population from which the sample was drawn. In order to generalize survey results to a larger population, it is important that each row of data have responses from a sufficient number of individuals. All groups shown had an unweighted population of 688 or more respondents, except for weaker autonomy with stronger feedback, which had an unweighted population of 315. This provides an adequate confidence interval to demonstrate the overall pattern.

Figure F: Respondents' view of the most important factor to feel engaged

Legend:
- Supporting a particular purpose, mission, or calling through my work.
- Using or developing certain skills, talents, or abilities.
- Doing a certain type of work, job, occupation, or work role.
- Recognition and appreciation.
- Compensation and benefits.
- My relationship with my coworkers.
- Work unit or organizational culture.
- Work unit or organizational policies, programs, flexibilities, etc.
- My senior leaders' words and actions.
- My relationship with my supervisor.

Bar values (top to bottom): 32%, 20%, 12%, 9%, 7%, 6%, 5%, 3%, 3%, 2%

Note: Total does not equal 100% due to rounding..

Figure G: Relationship between meaningfulness, feedback, and performance behaviors

		Stronger PBC	Moderate PBC	Weaker PBC
Stronger Meaningfulness	Stronger Feedback	67.8%	26.9%	5.3%
	Moderate Feedback	40.6%	42.2%	17.2%
	Weaker Feedback	37.1%	44.9%	18.0%
Moderate Meaningfulness	Stronger Feedback	33.3%	45.8%	20.9%
	Moderate Feedback	20.8%	39.4%	39.8%
	Weaker Feedback	21.0%	35.0%	44.0%
Weaker Meaningfulness	Stronger Feedback	21.9%	37.6%	40.5%
	Moderate Feedback	7.6%	32.3%	60.1%
	Weaker Feedback	9.8%	31.1%	59.1%

All rows in this chart had an unweighted population of 753 or more respondents, except for weaker meaningfulness with stronger feedback, which had an unweighted population of 271.