United States Government Accountability Office

Report to Congressional Requesters

September 2018

MANAGING FOR RESULTS

Government-wide Actions Needed to Improve Agencies' Use of Performance Information in Decision Making

GAO-18-609SP

GAO Highlights

Highlights of GAO-18-609SP, a report to congressional requesters

September 2018

MANAGING FOR RESULTS

Government-wide Actions Needed to Improve Agencies' Use of Performance Information in Decision Making

Why GAO Did This Study

To reform the federal government and make it more efficient and effective, agencies need to use data about program performance. The benefit of collecting performance information is only fully realized when it is used by managers to make decisions aimed at improving results.

GAO was asked to review agencies' use of performance information. This report assesses, among other things, the extent to which: (1) 24 agencies' reported use of performance information and related leading practices has changed since 2013 and (2) the Executive Branch has taken actions to enhance the use of performance information.

To address the first objective, GAO analyzed results from its 2017 survey of federal managers, and compared them to 2013 results. The survey covered a stratified random sample of 4,395 managers from the 24 Chief Financial Officers Act agencies. The survey had a 67 percent response rate and results can be generalized to the population of managers government-wide and at each agency. For the second objective, GAO reviewed agency documents and interviewed staff from OMB and the PIC.

What GAO Recommends

To improve the use of performance information within agencies and across the federal government, GAO recommends that OMB work with (1) fellow goal leaders to more fully develop action plans for the new goal to improve the use of data and (2) the PIC to prioritize efforts to identify and share proven practices and challenges. OMB had no comments on this report.

View GAO-18-609SP. For more information, contact Triana McNeil at (202) 512-6806 or mcneilt@gao.gov.

What GAO Found

Agencies' reported use of performance information to make decisions, and leading practices that can promote such use, generally has not improved since GAO's last survey of federal managers in 2013. However, GAO's survey results continue to point to certain practices that could help agencies improve managers' use of performance information. For example, as shown in the table below, GAO's survey found that managers whose programs were subject to data-driven reviews (regular reviews used to assess progress on select agency goals) to a greater extent reported statistically significantly greater use of performance information to make decisions.

Agency Reviews Associated with Increased Use of Performance Information in 2017

Extent Managers Report Their Programs Have Been Subject to Agency Data-Driven Reviews	Manager's Average Use of Performance Information Index Score
No Extent	2.86
Small Extent	3.02
Moderate Extent	3.33
Great Extent	3.59
Very Great Extent	4.08

Managers more subject to data-driven reviews report greater use of performance information.

Source: GAO analysis of survey results. | GAO-18-609SP

Note: GAO's index score is an average of responses to 11 related survey questions that approximates the reported use of performance information in decision making. The index runs from 1 to 5, where 1 reflects managers reported they and others use performance information to "no extent," and 5 reflects to a "very great extent."

The Executive Branch has begun taking steps to improve the use of performance information within agencies and across the government. For example,

- In the President's Management Agenda and government-wide reform plan, released in March and June 2018 respectively, the administration acknowledged the need to do more, and announced a goal, among other actions, to improve the use of data in federal decision making. However, the Office of Management and Budget (OMB) and others responsible for this goal have yet to fully develop action plans to hold agencies accountable for achieving it.
- The Performance Improvement Council (PIC), which is chaired by OMB, has undertaken efforts to improve the use of performance information by, for example, creating a working group on agency performance reviews. But it has not yet taken a systematic approach to identify and share proven practices that led to, or challenges that may be hampering, increased use of performance information by managers. GAO's survey results identified agencies that may have insights into such practices and challenges.

More fully developing action plans for the new goal, and identifying and sharing proven practices and challenges, could help ensure the Executive Branch takes further steps to improve the use of performance information by managers within agencies and across the federal government.

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Abbreviations

CAP	cross-agency priority
CFO	Chief Financial Officer

Commerce	Department of Commerce
COO	Chief Operating Officer
DHS	Department of Homeland Security
DOD	Department of Defense
DOJ	Department of Justice
DOL	Department of Labor
DOT	Department of Transportation
Education	Department of Education
Energy	Department of Energy
EPA	Environmental Protection Agency
GPRA	Government Performance and Results Act of 1993
GPRAMA	GPRA Modernization Act of 2010
GS	general schedule
GSA	General Services Administration
HHS	Department of Health and Human Services
HUD	Department of Housing and Urban Development
Interior	Department of the Interior
NASA	National Aeronautics and Space Administration
NRC	Nuclear Regulatory Commission
NSF	National Science Foundation
OMB	Office of Management and Budget
OPM	Office of Personnel Management
PIC	Performance Improvement Council
PIO	Performance Improvement Officer
PMA	President's Management Agenda
PMC	President's Management Council
SBA	Small Business Administration
SES	Senior Executive Service
SSA	Social Security Administration
State	Department of State
Treasury	Department of the Treasury
USAID	U.S. Agency for International Development
USDA	Department of Agriculture
VA	Department of Veterans Affairs

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U.S. GOVERNMENT ACCOUNTABILITY OFFICE
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September 5, 2018

Congressional Requesters

The federal government is one of the world's largest and most complex entities. It oversees a broad array of programs central to protecting the health, safety, and security of the American public. As the nation confronts both new and long-standing challenges, the public expects the government to be more transparent and accountable. This requires federal agencies to focus on their performance and improving results. To modernize the federal government and improve agencies' abilities to achieve results, the Office of Management and Budget (OMB) released the President's Management Agenda and its plan to reform and reorganize the federal government.[1] These initiatives propose a range of reform efforts and priorities designed to address the complex and interconnected challenges facing federal agencies.

To successfully implement reforms and improve their operations and results, agencies will need to robustly manage their performance.[2] This involves not only measuring progress toward goals, but also using that information to identify and correct problems, improve program implementation, and make other important management and resource allocation decisions. However, for more than two decades, our work has highlighted weaknesses in the use of performance information in decision making across the federal government.[3] For example, in September 2017, we found that the use of performance information (i.e., data

[1]OMB, *Delivering Government Solutions in the 21st Century: Reform Plan and Reorganization Recommendations* (Washington, D.C.: June 21, 2018), and *President's Management Agenda* (Washington, D.C.: Mar. 20, 2018).

[2]In June 2018, we identified key questions Congress, OMB, and agencies should consider for the development and implementation of government reforms. See GAO, *Government Reorganization: Key Questions to Assess Agency Reform Efforts*, GAO-18-427 (Washington, D.C.: June 13, 2018). The questions can help assess various aspects of reform efforts, including related goals and outcomes, and steps to implement and monitor progress.

[3]For example, see GAO, *Managing for Results: Further Progress Made in Implementing the GPRA Modernization Act, but Additional Actions Needed to Address Pressing Governance Challenges*, GAO-17-775 (Washington, D.C.: Sept. 29, 2017); *Government Performance: Lessons Learned for the Next Administration on Using Performance Information to Improve Results*, GAO-08-1026T (Washington, D.C.: July 24, 2008); and *The Government Performance and Results Act:1997 Governmentwide Implementation Will be Uneven*, GAO/GGD-97-109 (Washington, D.C.: June 2, 1997).

collected to measure progress toward agency goals) in various decision-making activities generally was unchanged or even declined government-wide, as reported by federal managers on a periodic survey we have conducted since 1997.[4] These persisting weaknesses could hinder agencies' abilities to achieve critical results.

Based on the aggregated, government-wide level survey results presented in our September 2017 report, you asked us to review individual agencies' use of performance information in decision making. This report assesses the extent to which:

- the reported use of performance information and related leading practices at 24 agencies has changed compared to our prior survey in 2013;
- being subject to data-driven reviews related to managers' reported use of performance information and leading practices; and
- the Executive Branch has taken actions to enhance agencies' use of performance information in various decision-making activities.

To address the first and second objectives, we analyzed relevant results from our 2017 survey of federal managers on organizational performance and management issues.[5] We administered the web-based survey to a stratified random sample of 4,395 managers at 24 agencies between November 2016 and March 2017.[6] We received usable questionnaires from about 67 percent of the eligible sample. The weighted response rate at each agency generally ranged from 57 percent to 82 percent, except for the Department of Justice, which had a weighted response rate of 36

[4]GAO-17-775. That report provided selected government-wide results and trends from our 2017 survey.

[5]In September 2017, we also issued online supplemental material that shows responses to all survey items at the government-wide level and for each individual agency. See GAO, *Supplemental Material for* GAO-17-775*: 2017 Survey of Federal Managers on Organizational Performance and Management Issues*, GAO-17-776SP (Washington, D.C.: Sept. 29, 2017).

[6]The 24 agencies are those identified in the Chief Financial Officers (CFO) Act of 1990, 31 U.S.C. § 901(b), which generally are the largest federal agencies. For the full list of these agencies, see appendix II.

percent.[7] The maximum margin of error for the government-wide estimates was less than or equal to 6 percentage points, and the maximum margin of error for agency estimates was less than 20 percentage points. These results are generalizable to the population of managers government-wide and at each individual agency.[8] The 2017 results are comparable to those from other surveys we conducted in 1997, 2000, 2003, 2007, and 2013.[9]

To further address the first objective, we conducted various statistical analyses on selected survey questions related to the use of performance information and practices that can promote such use.[10] For the use of performance information, we selected the same set of 11 survey questions used in our last report on our 2013 survey that focused on agency-level survey results.[11] Using 2017 survey data, we conducted statistical analyses and ensured that these 11 questions were still positively correlated and no changes were necessary. As in that September 2014 report, we updated our index to create a single score for each agency to approximate its reported use of performance information in decision making as of 2017. We also reviewed our 2017 survey and identified 22 questions that reflect five management practices—identified by our past work—that can promote the use of performance information in decision making.[12] Of those 22 questions, we selected 10 questions that

[7]Appendix I provides each agency's response rate. Estimates from agencies with low response rates, such as the Department of Justice, should be interpreted with caution because these estimates are associated with a higher level of uncertainty.

[8]Throughout this report, we use the terms "federal managers" and "managers" to collectively refer to managers and supervisors covered by our survey. In addition, we use the term "government-wide" to collectively refer to the 24 CFO Act agencies.

[9]See the Related GAO Products section for a list of past products on our surveys of federal managers. For more detailed information on the methodology used to administer our 2017 survey, see appendix I in GAO-17-775.

[10]These analyses included bivariate and multivariate regressions and tests of statistical significance. We describe our methodology for these various analyses in detail in appendix II.

[11]GAO, *Managing for Results: Agencies' Trends in the Use of Performance Information to Make Decisions*, GAO-14-747 (Washington, D.C.: Sept. 26, 2014).

[12]GAO, *Managing for Results: Enhancing Agency Use of Performance Information for Management Decision Making*, GAO-05-927 (Washington, D.C.: Sept. 9, 2005). To identify the practices described in this report, we reviewed relevant literature, including our prior reports, spoke to experts in using performance information, and held group discussions with federal program managers.

our analyses showed had statistically significant associations with greater reported use of performance information.

For the index and each question described above, we calculated results for each agency based on the 2017 survey results. We then determined if each agency's results were statistically significantly different from (1) their prior results in 2013 and (2) the government-wide average results in 2017.[13] We focus on statistically significant results throughout the report because these indicate that observed relationships between variables and differences between groups are likely to be valid, after accounting for the effects of sampling and other sources of survey error. Because our audit work was limited to analyzing and summarizing the results of our 2017 survey, we did not conduct any audit work at the agencies to determine what may have caused any statistically significant changes. Appendix I presents the relevant survey results for each of the 24 agencies.

To further address the second objective, we used 2017 survey results to identify managers who reported they were familiar with their agency's data-driven reviews.[14] For those who reported familiarity with the reviews, we identified the extent managers reported that their programs had been subject to those reviews. Based on the extent they were subject to reviews, we assessed differences among managers' (1) index scores and (2) responses on the 10 questions that reflect leading practices that can promote the use of performance information.

For the third objective, we identified and reviewed various resources (i.e., guidance, guides, and playbooks) developed by OMB and the Performance Improvement Council (PIC) that could support agencies' use of performance information.[15] We also reviewed our past work that

[13]Since each sample could have provided different estimates, we express our confidence in the precision of our particular sample's results as a 95 percent confidence interval. We defined differences between estimates as statistically significant through the p-value. Statistical significance is achieved when the p-value is < 0.05.

[14]Data-driven reviews are also known as "quarterly performance reviews," which is the language we used in our survey of federal managers. In this report we refer to them as "data-driven reviews."

[15]For instance, see OMB, Circular No. A-11, Part 6: *Federal Performance Framework: Strategic Planning, Annual Performance Plans and Reports, Priority Goals, Performance Reviews, Customer Experience, and Program and Project Management* (June 2018), and resources listed on https://pic.gov/pic-resources (last accessed July 11, 2018).

assessed Executive Branch activities to enhance the use of performance information.[16] Lastly, we reviewed documents on recent cross-agency efforts to improve the use of data in federal decision making, and interviewed OMB and PIC staff about any actions they have taken, or planned to take, to further support the use of performance information across the federal government. Appendix II provides additional details on the objectives, scope, and methodology of this report.

We conducted this performance audit from October 2017 to September 2018 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

Background

Use of Performance Information in the Federal Government

Concerned that the federal government was more focused on program activities and processes than the results to be achieved, Congress passed the Government Performance and Results Act of 1993 (GPRA).[17] GPRA sought to focus federal agencies on performance by requiring agencies to develop long-term and annual goals, and measure and report on progress towards those goals annually. Based on our analyses of the act's implementation, we concluded in March 2004 that GPRA's requirements had laid a solid foundation for results-oriented management.[18] At that time, we found that performance planning and measurement had slowly yet increasingly become a part of agencies' cultures. For example, managers reported having significantly more performance measures in 2003 than in 1997, when GPRA took effect government-wide.[19]

[16]We most recently summarized those findings in September 2017. See GAO-17-775.

[17]Pub. L. No. 103-62, 107 Stat. 285 (Aug. 3, 1993).

[18]GAO, *Results-Oriented Government: GPRA Has Established a Solid Foundation for Achieving Greater Results*, GAO-04-38 (Washington, D.C.: Mar. 10, 2004).

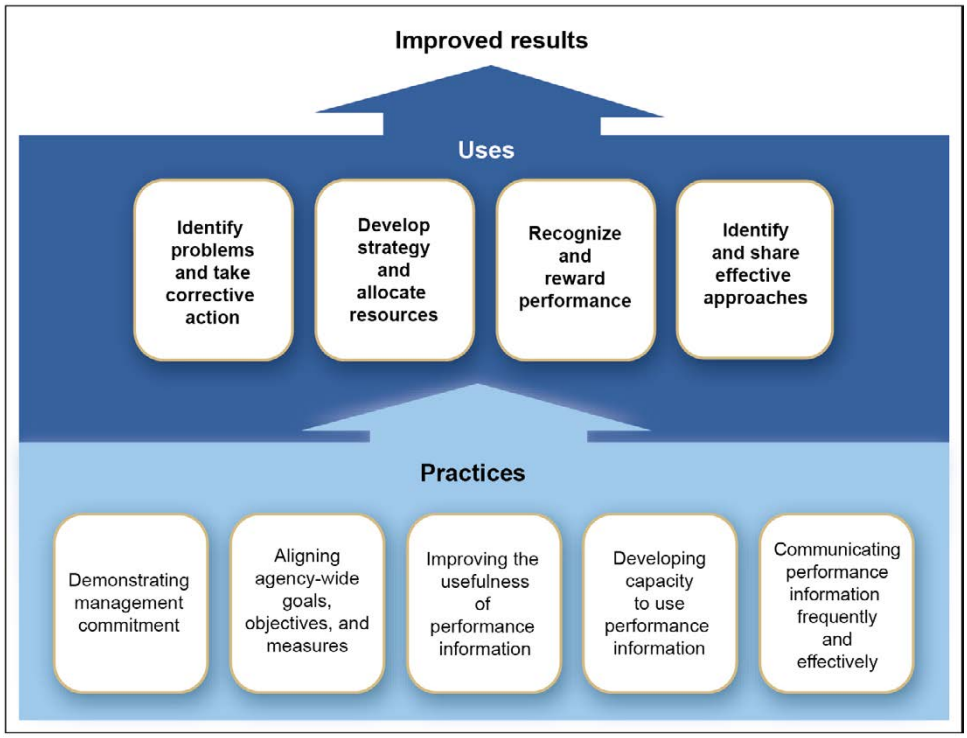
[19]GAO-04-38. In that report, we compared results from our 1997, 2000, and 2003 surveys of federal managers.

However, the benefit of collecting performance information is fully realized only when that information is actually used by managers to make decisions aimed at improving results. Although our 2003 survey found greater reported availability of performance information than in 1997, it also showed managers' use of that information for various management activities generally had remained unchanged. Based on those results, and in response to a request from Congress, in September 2005, we developed a framework intended to help agencies better incorporate performance information into their decision making.[20] As shown in figure 1, we identified

- five leading practices that can promote the use of performance information for policy and program decisions; and
- four ways agency managers can use performance information to make program decisions aimed at improving results.

[20]GAO-05-927. To identify the framework, we reviewed relevant literature, including our prior reports, spoke to experts in using performance information, and held group discussions with federal program managers. We also reviewed documentation from and interviewed individuals within five federal agencies—the Departments of Commerce, Labor, Transportation, and Veterans Affairs, and the Small Business Administration—to illustrate in greater detail how program managers have used performance information to make decisions and specific agency practices that facilitated those uses.

Figure 1: Practices That Can Promote the Use of Performance Information for Management Decision Making



Source: GAO. | GAO-18-609SP

Our September 2005 report also highlighted examples of how agencies had used performance information to improve results. For example, we described how the Department of Transportation's National Highway Traffic Safety Administration used performance information to identify, develop, and share effective strategies that increased national safety belt usage—which can decrease injuries and fatalities from traffic accidents—from 11 percent in 1985 to 80 percent in 2004.[21]

Subsequently, the GPRA Modernization Act of 2010 (GPRAMA) was enacted, which significantly expanded and enhanced the statutory framework for federal performance management.[22] The Senate

[21]GAO-05-927.

[22]Pub. L. No. 111-352, 124 Stat. 3866 (Jan. 4, 2011).

Committee on Homeland Security and Governmental Affairs report accompanying the bill that would become GPRAMA stated that agencies were not consistently using performance information to improve their management and results.[23] The report cited the results of our 2007 survey of federal managers. That survey continued to show little change in managers' use of performance information.[24] The report further stated that provisions in GPRAMA are intended to address those findings and increase the use of performance information to improve performance and results. For example, GPRAMA requires certain agencies to designate a subset of their respective goals as their highest priorities—known as agency priority goals—and to measure and assess progress toward those goals at least quarterly through data-driven reviews.[25]

Our recent work and surveys suggest that data-driven reviews are having their intended effect. For example, in July 2015, we found that agencies reported that their reviews had positive effects on progress toward agency goals and efforts to improve the efficiency of operations, among other things.[26] In addition, for those managers who were familiar with their agencies' data-driven reviews, our 2013 and 2017 surveys showed that the more managers viewed their programs as being subject to a review, the more likely they were to report their agencies' reviews were driving results and conducted in line with our leading practices.[27] Recognizing the important role these reviews were playing in improving data-driven decision making, our management agenda for the presidential and congressional transition in 2017 included a key action to expand the use

[23]S. Rep. No. 111-372, at 11-12 (2010).

[24]GAO-08-1026T.

[25]31 U.S.C. § 1120(b) and 31 U.S.C. § 1121(b).GPRAMA states that the 24 agencies identified in the CFO Act of 1990, as amended (31U.S.C. § 901(b)), are to develop agency priority goals unless OMB determines otherwise.

[26]GAO, *Managing for Results: Agencies Report Positive Effects of Data-Driven Reviews on Performance but Some Should Strengthen Practices*, GAO-15-579 (Washington, D.C.: July 7, 2015).

[27]In 2017, 35 percent of managers reported being somewhat or very familiar with their agencies' data-driven reviews. In 2013, it was 33 percent. See, respectively, GAO-17-775 and GAO, *Managing for Results: Executive Branch Should More Fully Implement the GPRA Modernization Act to Address Pressing Governance Challenges*, GAO-13-518 (Washington, D.C.: June 26, 2013).

of data-driven reviews beyond agency priority goals to other agency goals.[28]

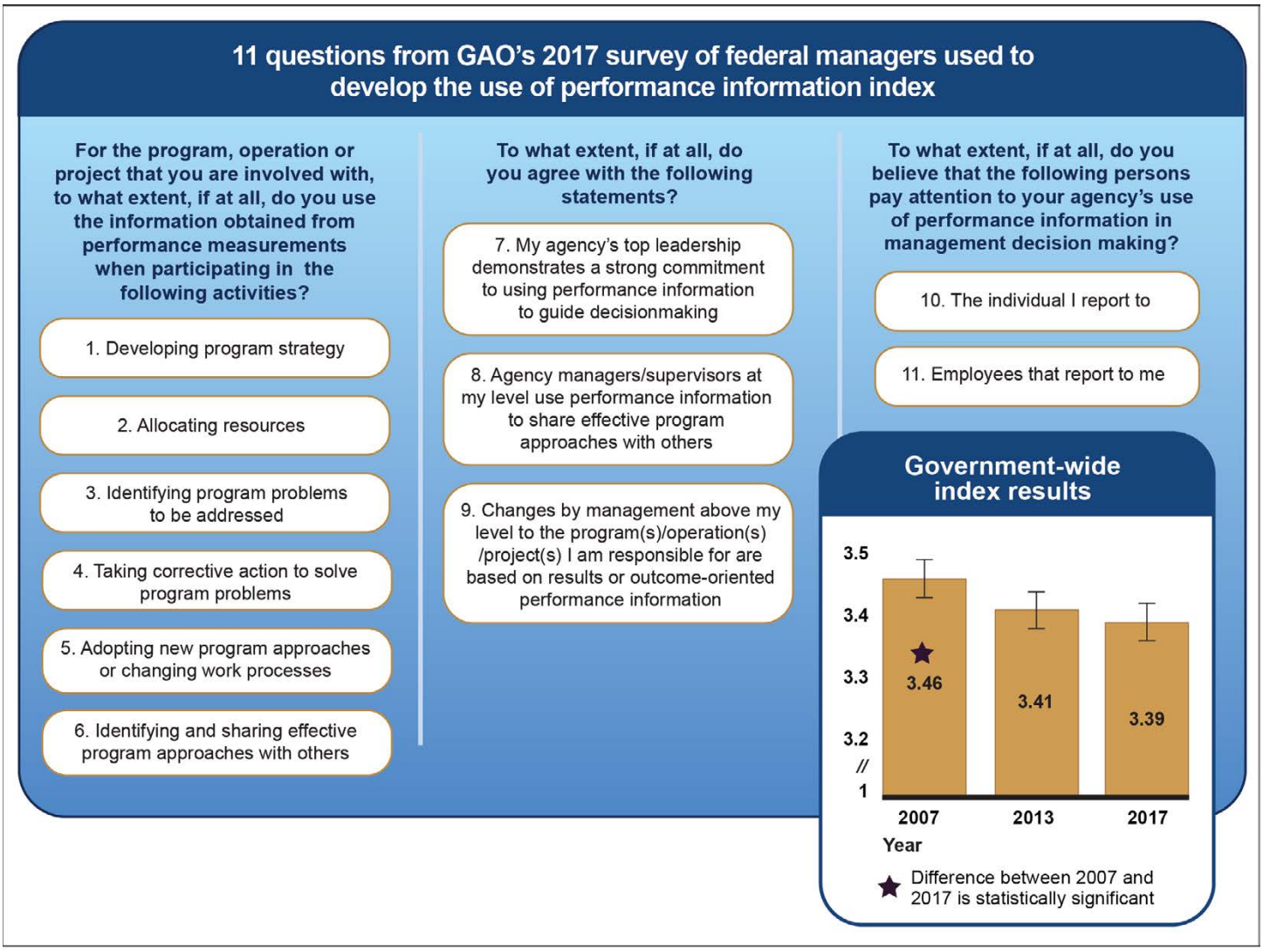
More broadly, our recent surveys of federal managers have continued to show that reported government-wide uses of performance information generally have not changed or in some cases have declined.[29] As we found in September 2017, and as illustrated in figure 2, the 2017 update to our index suggests that government-wide use of performance information did not improve between 2013 and 2017. In addition, it is statistically significantly lower relative to our 2007 survey, when we created the index.[30]

[28]GAO, "Use Data to Drive Decisions," *Management Agenda*, last accessed July 5, 2018, https://www.gao.gov/resources/presidential-transition/management-agenda.

[29]GAO-17-775 and GAO-13-518.

[30]GAO-17-775. In this report, we analyzed and summarized the government-wide results of our 2017 survey of federal managers. At that time, we did not conduct additional audit work to determine what may have caused statistically significant changes between our 2017 and past survey results.

Figure 2: Government-wide Use of Performance Information Index Shows a Statistically Significant Decrease Relative to 2007



Source: GAO analysis of survey results. I GAO-18-609SP

Note: The index is an average of responses from 11 survey questions and runs from 1 to 5. A 1 reflects that managers reported that they and others in their agency engage to "no extent" in the use of performance information for various decision-making activities. A 5 reflects to a "very great extent."

Moreover, in looking at the government-wide results on the 11 individual survey questions that comprise the index, we found few statistically significant changes in 2017 when compared to (1) our 2013 survey or (2) the year each question was first introduced. For example, in comparing

2013 and 2017 results, two questions had results that were statistically significantly different:

- The percentage of managers who reported that employees who report to them pay attention to their agency's use of performance information was statistically significantly higher (from 40 to 46 percent).
- The percentage of managers who reported using performance information to adopt new program approaches or change work processes was statistically significantly lower (from 54 to 47 percent).

As we stated in our September 2017 report, the decline on the latter question was of particular concern as agencies were developing plans to improve their efficiency, effectiveness, and accountability, as called for by an April 2017 memorandum from OMB.[31]

The Administration's Plans for Federal Performance Management

In early 2017, the administration announced several efforts intended to improve government performance. OMB issued several memorandums detailing the administration's plans to improve government performance by reorganizing the government, reducing the federal workforce, and reducing federal agency burden.[32] As part of the reorganization efforts, OMB and agencies were to develop government-wide and agency reform plans, respectively, designed to leverage various GPRAMA provisions. For instance, the April 2017 memorandum mentioned above stated that OMB intends to monitor implementation of the reforms using, among other things, agency priority goals.[33] While many agency-specific organizational improvements were included in the President's fiscal year 2019 budget, released in February 2018, OMB published additional government-wide and agency reform proposals in June 2018.[34]

The President's Management Agenda (PMA), released in March 2018, outlines a long-term vision for modernizing federal operations and

[31]GAO-17-775. OMB, *Comprehensive Plan for Reforming the Federal Government and Reducing the Federal Civilian Workforce*, M-17-22 (Washington, D.C.: Apr. 12, 2017).

[32]See, for example, OMB, *Reducing Burden for Federal Agencies by Rescinding and Modifying OMB Memoranda*, M-17-26 (Washington, D.C.: June 15, 2017), and M-17-22.

[33]OMB, M-17-22.

[34]OMB, *Delivering Government Solutions in the 21st Century: Reform Plan and Reorganization Recommendations* (Washington, D.C.: June 21, 2018).

improving the ability of agencies to achieve outcomes.[35] To address the issues outlined in the PMA, the administration established a number of cross-agency priority (CAP) goals. CAP goals, required by GPRAMA, are to address issues in a limited number of policy areas requiring action across multiple agencies, or management improvements that are needed across the government.

The PMA highlights several root causes for the challenges the federal government faces. Among them is that agencies do not consistently apply data-driven decision-making practices. The PMA states that smarter use of data and evidence is needed to orient decisions and accountability around service and results. To that end, in March 2018, the administration established the Leveraging Data as a Strategic Asset CAP goal to improve the use of data in decision making to increase the federal government's effectiveness.

Federal Performance Management Leadership Roles and Responsibilities

Over the past 25 years, various organizations, roles, and responsibilities have been created by executive action or in law to provide leadership in federal performance management. At individual agencies and across the federal government, these organizations and officials have key responsibilities for improving performance, as outlined below.

- **OMB:** At least every four years, OMB is to coordinate with other agencies to develop CAP goals—such as the one described earlier on leveraging data as an asset—to improve the performance and management of the federal government.[36] OMB is also required to coordinate with agencies to develop annual federal government performance plans to define, among other things, the level of performance to be achieved toward the CAP goals.[37] Following GPRAMA's enactment, OMB issued guidance for initial implementation, as required by the act, and continues to provide

[35]OMB, *President's Management Agenda* (Mar. 20, 2018).

[36]31 U.S.C. § 1120(a).

[37]31 U.S.C. § 1115(a).

updated guidance in its annual Circular No. A-11, additional memorandums, and other means.[38]

- **Chief Operating Officer (COO):** The deputy agency head, or equivalent, is designated as the COO, with overall responsibility for improving agency management and performance through, among other things, the use of performance information.[39]
- **President's Management Council (PMC):** The PMC is comprised of OMB's Deputy Director for Management and the COOs of major departments and agencies, among other individuals. Its responsibilities include improving overall executive branch management and implementing the PMA.[40]
- **Performance Improvement Officer (PIO):** Agency heads designate a senior executive as the PIO, who reports directly to the COO. The PIO is responsible for assisting the head of the agency and COO to ensure that agency goals are achieved through, among other things, the use of performance information.[41]
- **Performance Improvement Council (PIC):** The PIC is charged with assisting OMB to improve the performance of the federal government.[42] It is chaired by the Deputy Director for Management at OMB and includes PIOs from each of the 24 Chief Financial Officers Act agencies, as well as other PIOs and individuals designated by the

[38]See, for example, OMB, Circular No. A-11, pt 6 (June 2018); *Delivering an Efficient, Effective, and Accountable Government*, M-11-31 (Washington, D.C.: Aug. 17, 2011); and *Delivering on the Accountable Government Initiative and Implementing the GPRA Modernization Act of 2010*, M-11-17 (Washington, D.C.: Apr. 14, 2011).

[39]31 U.S.C. § 1123. The COO role existed at agencies prior to GPRAMA's enactment, with past responsibilities outlined in two presidential memorandums. See The White House, *Presidential Memorandum, Implementing Government Reform*, (Washington, D.C.: July 11, 2001), and *Presidential Memorandum, Implementing Management Reform in the Executive Branch*, (Washington, D.C.: Oct. 1, 1993).

[40]The PMC, first created by presidential memorandum in 1993, was given additional responsibilities in 2001. See The White House, *Presidential Memorandum, Implementing Government Reform*, (Washington, D.C.: July 11, 2001), and *Presidential Memorandum, Implementing Management Reform in the Executive Branch*, (Washington, D.C.: Oct. 1, 1993).

[41]31 U.S.C. § 1124(a). The PIO role was created by a 2007 executive order. See Executive Order No. 13450, *Improving Government Program Performance*, 72 Fed. Reg. 64519 (Nov. 13, 2007).

[42]31 U.S.C. § 1124(b). The PIC was originally established by the same executive order that created the role of PIO.

chair. Among its responsibilities, the PIC is to work to resolve government-wide or cross-cutting performance issues, and facilitate the exchange among agencies of practices that have led to performance improvements.

Previously, the General Service Administration's (GSA) Office of Executive Councils provided analytical, management, and administrative support for the PIC, the PMC, and other government-wide management councils. In January 2018, the office was abolished and its functions, staff, and authorities, along with those of the Unified Shared Services Management Office, were reallocated to GSA's newly created Shared Solutions and Performance Improvement Office.[43]

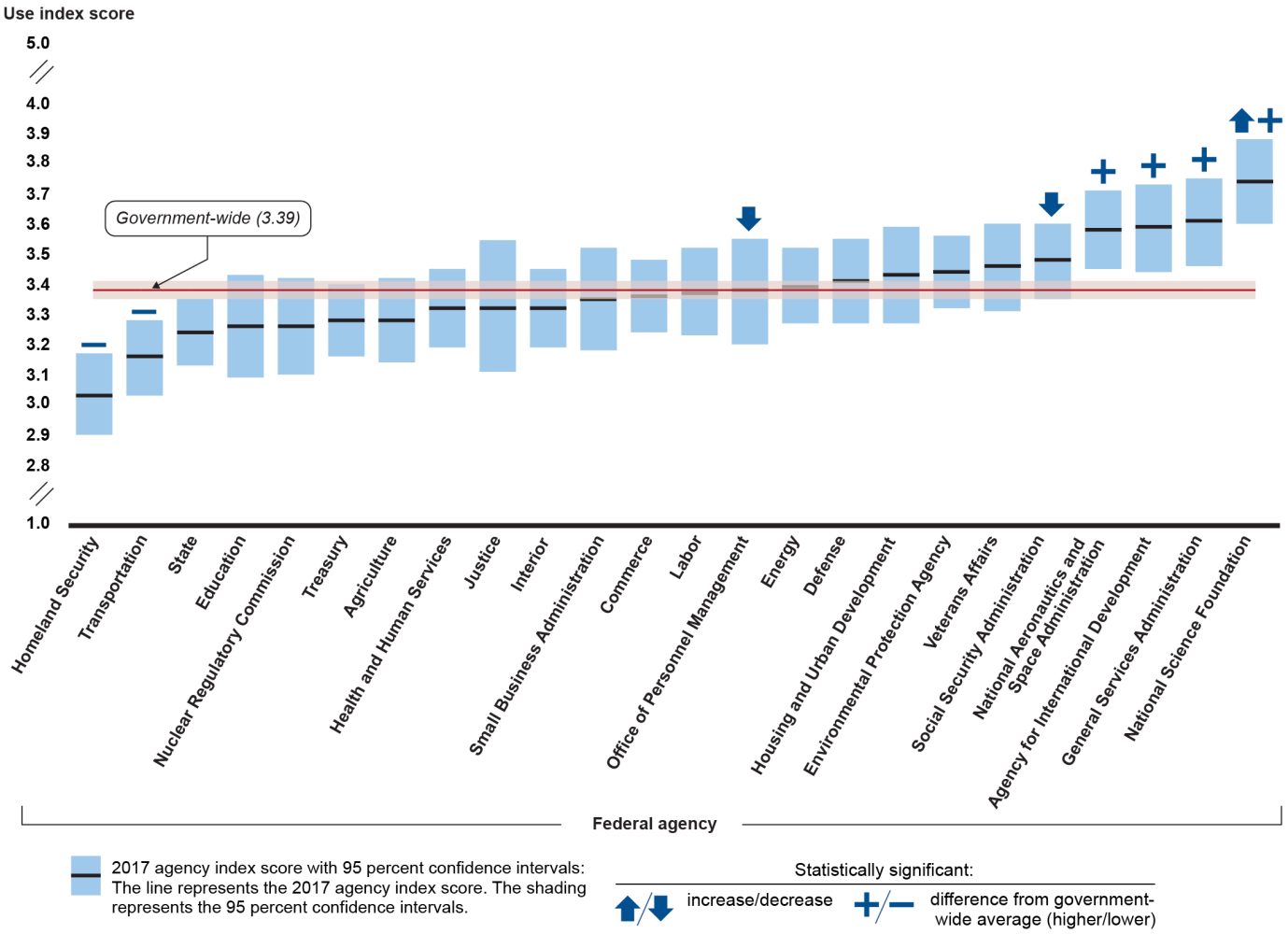
Agencies' Use of Performance Information in Decision Making and Related Leading Practices Generally Has Not Improved

Reported Use of Performance Information in Decision Making Generally Has Not Improved at Individual Agencies Since 2013

As at the government-wide level—where, as described earlier, the use of performance information did not change from 2013 to 2017—managers' reported use of performance information at most agencies also did not improve since 2013 (illustrated in figure 3).

[43]According to a statement from the GSA administrator, the office also supports the management and implementation of shared service efforts throughout government. These are designed to encourage agencies to share investments in common administrative services like financial management, human resources, and information technology. Emily W. Murphy, Administrator of the General Services Administration, testimony before the Subcommittee on Financial Services and General Government, Committee on Appropriations, United States House of Representatives, 115th Cong., 2nd sess., April 17, 2018.

Figure 3: Few 2017 Agency Index Scores Statistically Significantly Different since 2013



Source: GAO analysis of survey data. | GAO-18-609SP

Note: The index is an average of responses from 11 survey questions and runs from 1 to 5. A 1 reflects that managers reported that they and others in their agency engage to “no extent” in the use of performance information for various decision-making activities. A 5 reflects to a “very great extent.”

Agencies with Statistically Significant 2017 Index Results

Results Suggest Proven Practices for Using Performance Information at:

- Agency for International Development
- General Services Administration
- National Aeronautics and Space Administration
- National Science Foundation

Results Suggest Challenges Related to the Use of Performance Information at:

- Homeland Security
- Office of Personnel Management
- Social Security Administration
- Transportation

Source: GAO | GAO-18-609SP

At the agency level, 3 of the 24 agencies had statistically significant changes in their index scores—1 increase (National Science Foundation) and 2 decreases (Social Security Administration and the Office of Personnel Management).[44] Also, in 2017, 6 agencies had results that were statistically significantly different—4 higher and 2 lower—than the government-wide average (see sidebar).

Throughout the report, we highlight two different types of statistically significant results—changes from our last survey in 2013 and differences from the 2017 government-wide average. The former indicates when an agency's reported use of performance information or leading practices has measurably improved or declined. The latter indicates when it is statistically significantly higher or lower than the rest of government. These results suggest agencies have taken actions that led to improvements in their use of performance information. For example, when a result is a statistically significant increase since 2013, as with the National Science Foundation index score in 2017, this suggests that the agency has adopted practices that led to a measurable increase in the use of performance information by managers.

When a result is statistically significantly higher than the government-wide average, like GSA's 2017 index score, this suggests that the agency's use of performance information is among the highest results when compared to the rest of government. These agencies could also have insights into practices that led to relatively high levels of performance information use. Finally, when a result is a *statistically significant decrease* since 2013, as with the Social Security Administration's index score in 2017, or *statistically significantly lower* than the government-wide average, like the Department of Homeland Security's 2017 index score, this suggests the agencies face challenges that are hampering their ability to use performance information. Appendix III provides each agency's index scores from 2007, 2013, and 2017 to show changes between survey years.

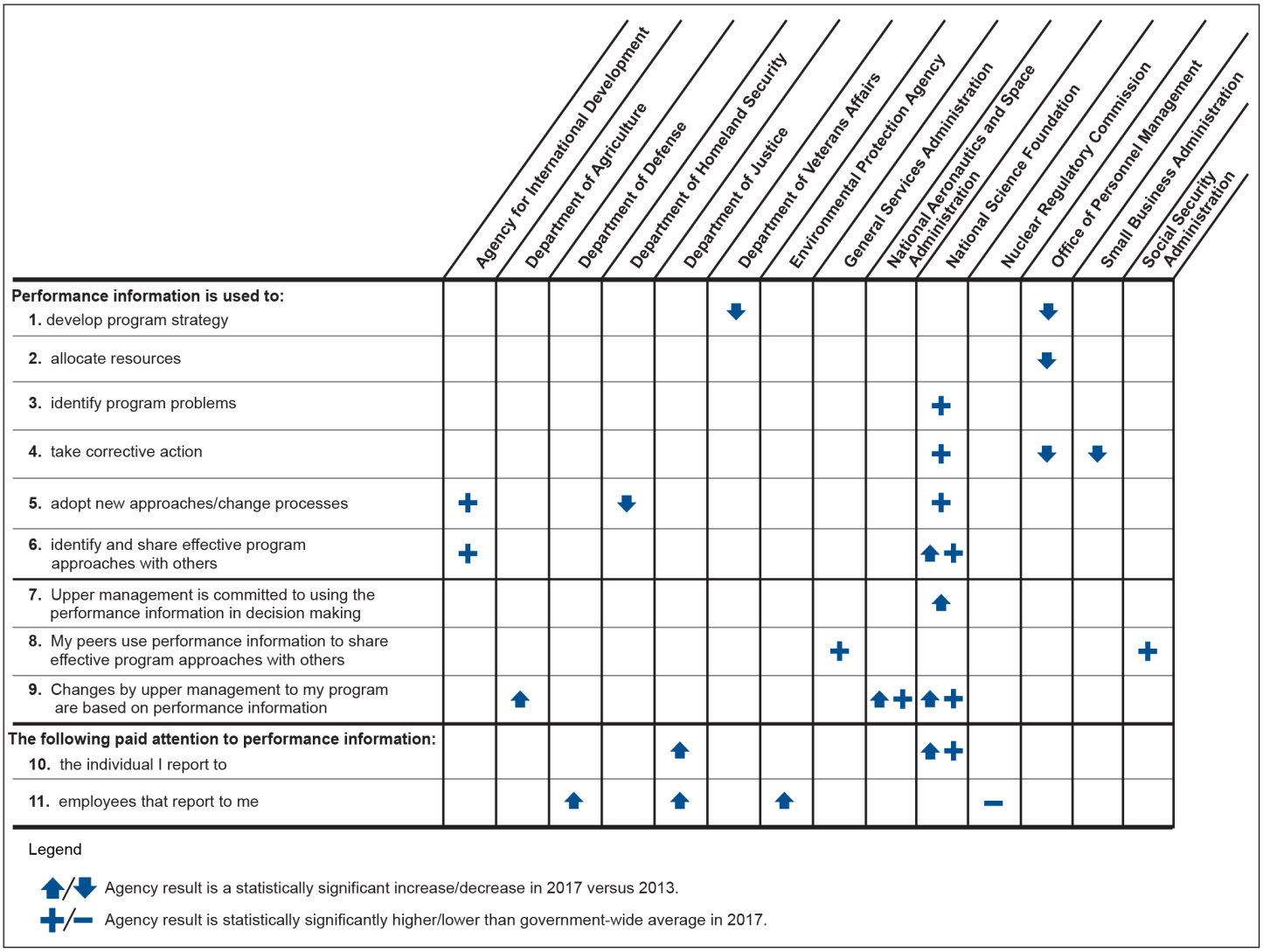
[44]When compared to 2007, seven agencies had statistically significant changes in their scores in 2017, six of which were decreases. The U.S. Agency for International Development was the one agency with a statistically significant increase in its score when compared to 2007. The Departments of Education, Homeland Security, Treasury, and Veterans Affairs, as well as the Nuclear Regulatory Commission and the Social Security Administration had statistically significant decreases in their scores. Appendix III provides index scores, government-wide and at each agency, for 2007, 2013, and 2017.

When we disaggregated the index and analyzed responses from the 11 questions that comprise the index—which could help pinpoint particular actions that improved the use of performance information—we similarly found relatively few changes in agencies' recent results. Specifically, we identified 16 instances where agency responses on individual questions were statistically significantly different from 2013 to 2017—10 increases and 6 decreases. This represents about 6 percent of the total possible responses to the 11 survey questions from each of the agencies.[45]

In addition, we found 12 instances where an agency's result on a question was statistically significantly higher (11) or lower (1) than the government-wide average in 2017. For example, the percentage of Social Security Administration (SSA) managers reporting that their peers use performance information to share effective approaches was statistically significantly higher than the government-wide average. Although SSA's index score had a statistically significant decline in 2017 compared to 2013, the agency's index score remains relatively high, as it has in prior years. The scope of our work has not allowed us to determine definitively what factors caused the decline in SSA's index score and whether the decline is likely to continue, although its result on this particular question may indicate a continued strength. Each agency's results on the 11 questions that comprise the index are presented in appendix I. The agencies' respective statistically significant results are identified in figure 4.

[45]The total possible (264) represents the number of agencies (24) multiplied by the number of questions (11).

Figure 4: 14 Agencies Had Statistically Significant Results on the 11 Questions That Comprise the Use of Performance Information Index



Source: GAO analysis of survey data. | GAO-18-609SP

Note: Results reflect the percentage of managers who responded “great extent” or “very great extent” on each question. None of the other 10 agencies included in our survey had statistically significant results on these questions. While the Social Security Administration (SSA) had a positive, statistically significant result on one question in the figure above, the agency’s index score had a statistically significant decline in 2017 compared to 2013. The scope of our work has not allowed us to determine definitively what factors caused the decline in its index score. Survey questions are abbreviated. See GAO-17-776SP for the full list of the agencies included in the survey, as well as the full text of survey questions 7a, 7c, 7d, 7e,7f, 7m, 9h, 9m, 10, 11c, and 11d.

While some agencies had statistically significant improvements on individual questions, and could point to actions that led to improvements in their use of performance information, these improvements should be considered in relation to the range of agency results and the government-wide average. In figure 4, there are five agencies with statistically significant increases on responses to individual questions, where those results were not statistically significantly higher than the government-wide average (see arrows without plus signs for the Departments of Agriculture, Defense, and Justice; the Environmental Protection Agency; and the National Science Foundation). While these represent improvements, they should be considered in relation to the range of agency results and the government-wide average (provided in detail in the agency summaries in appendix I). For example, in 2017, the percentage of managers at the Department of Agriculture who reported that upper management use performance information to inform decisions about program changes was statistically significantly higher than in 2013. However, the department's 2017 result (37 percent) was relatively lower when compared to the maximum agency result on that question (60 percent).[46] Appendix I presents the results on the index and the 11 questions that comprise it for each of the 24 agencies.

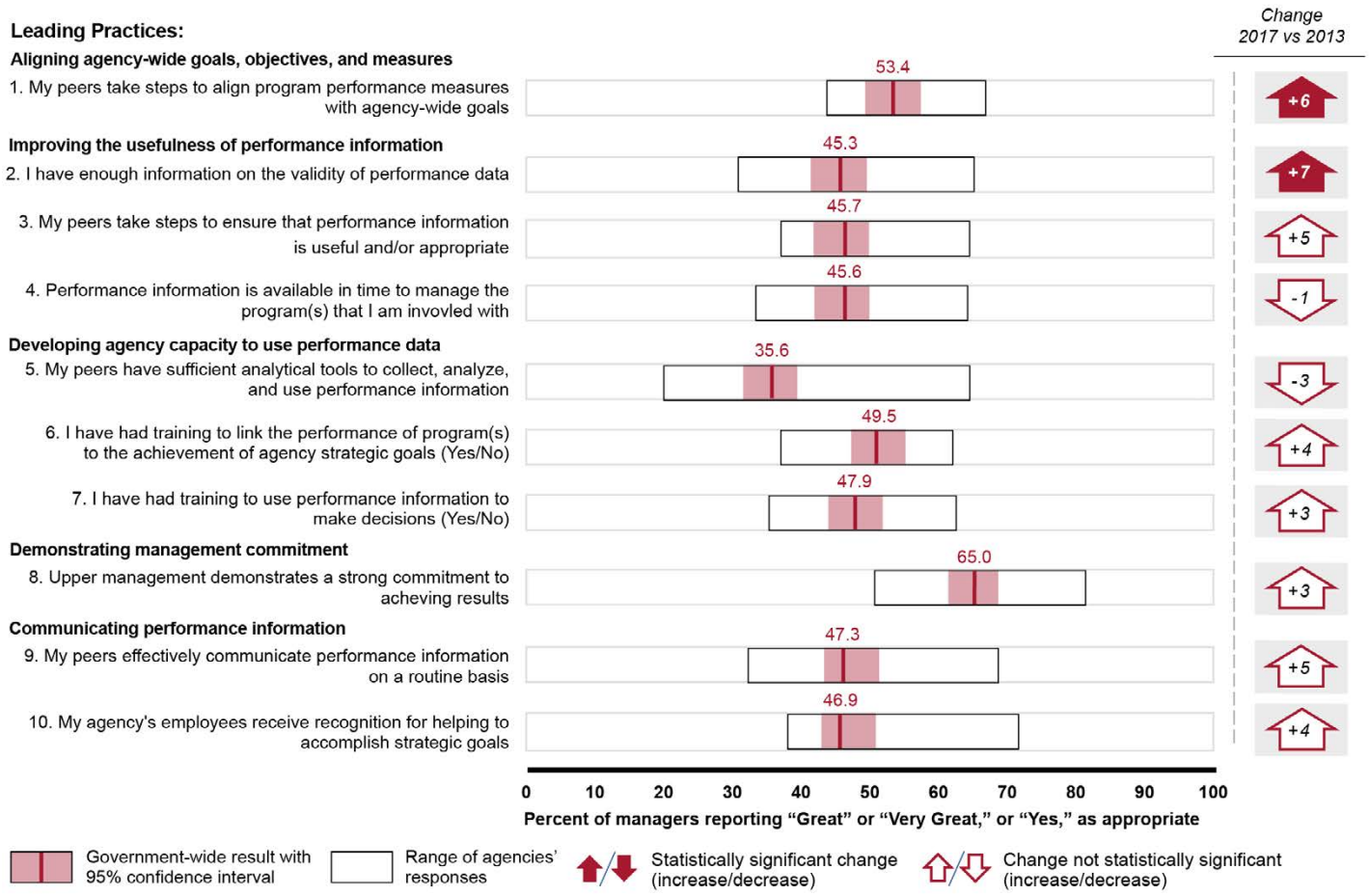
Individual Agencies' Reported Use of Leading Practices Generally Remains Unchanged

When we compared government-wide and agency-level results on selected survey questions that reflect practices that promote the use of performance information, we found that results between 2013 and 2017 generally remained unchanged. As described earlier, there are 10 survey questions that both reflect the five leading practices identified in our past work and had statistically significant associations with higher index scores. As shown in figure 5, government-wide results on 2 of the 10 questions were statistically significantly different, both increases, from 2013 to 2017.[47] Despite these two increases, the overall results suggest these practices are not widely followed government-wide. On most of the 10 questions, only about half (or fewer) of the managers reported their agencies were following them to a "great" or "very great" extent.

[46]The government-wide average for this question was 29 percent.

[47]GAO-17-775 provides a more detailed analysis of the government-wide results on these individual questions.

Figure 5: Few Statistically Significant Changes Government-wide on 10 Key Questions Related to Practices That Can Promote the Use of Performance Information



Source: GAO analysis of survey data. | GAO-18-609SP

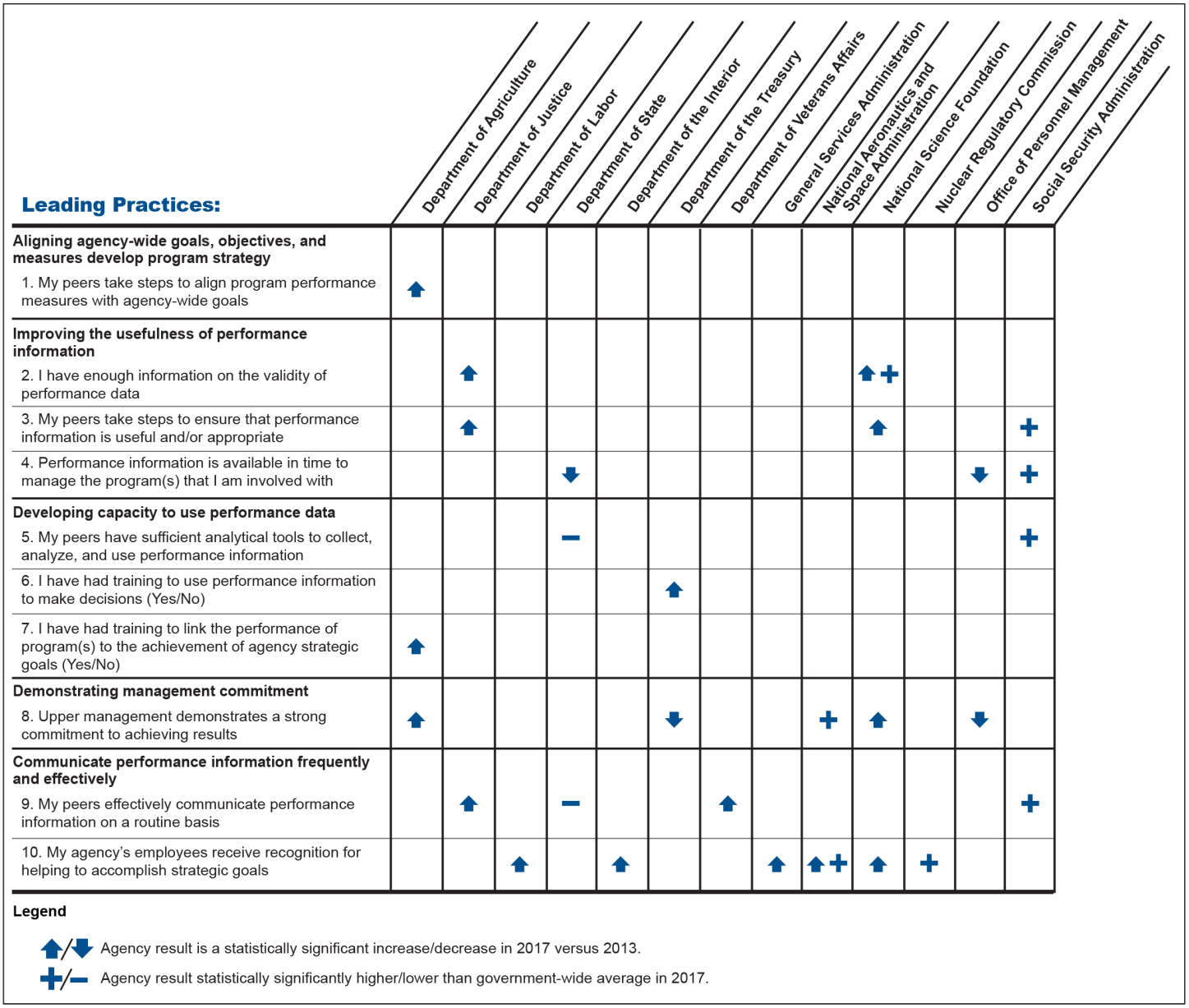
Note: Survey questions are abbreviated. See GAO-17-776SP for the full text for survey questions 6e, 6g, 9e, 9g, 9j, 9k, 9l, 10d, 13e, and 13f.

When we analyzed agency-level responses to these 10 questions, we also found relatively few changes in recent results. Specifically, our analysis found 20 instances—16 increases and 4 decreases—where agencies' responses on individual questions were statistically significantly different from 2013 to 2017. This represents about 8 percent of the total possible responses to the 10 survey questions from each of the agencies.[48]

In addition, we found 10 instances where an agency's result on a question was statistically significantly higher (8) or lower (2) than the government-wide average in 2017. Each agency's results on these 10 questions are presented in appendix I, and the statistically significant results are identified in figure 6.

[48]The total possible (240) represents the number of agencies (24) multiplied by the number of questions (10).

Figure 6: 13 Agencies Had Statistically Significant Results on Questions Related to Practices That Promote the Use of Performance Information



Source: GAO analysis of survey data. | GAO-18-609SP

Note: Results reflect the percentage of managers who responded "great extent" or "very great extent," or "yes," on each question, as appropriate. None of the other 11 agencies included in our survey had statistically significant results on these questions. While the Social Security Administration (SSA) had statistically significant results on four questions in the figure above, the agency's index score had a statistically significant decline in 2017 compared to 2013. The scope of our work has not allowed us

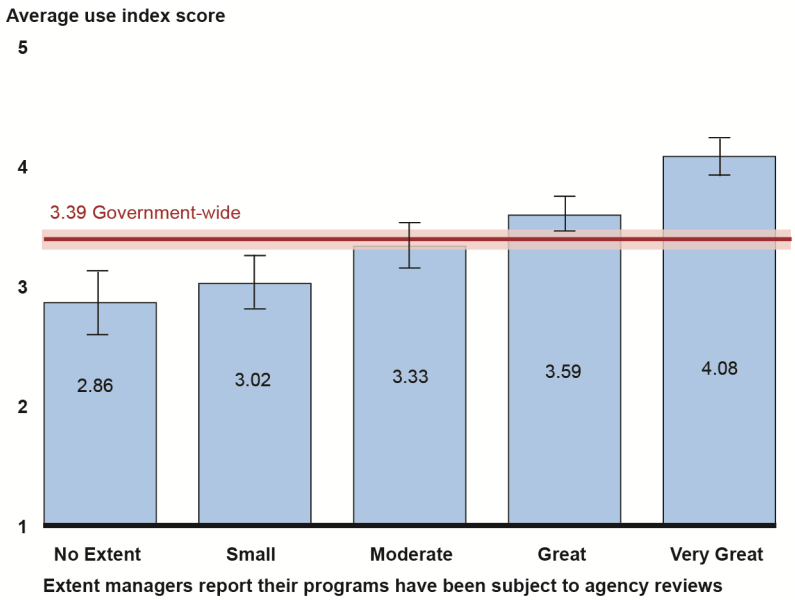
to determine definitively what factors caused the decline in SSA's index score. Survey questions are abbreviated. See GAO-17-776SP for the full list of the agencies included in the survey, as well as the full text for survey questions 6e, 6g, 9e, 9g, 9j, 9k, 9l, 10d, 13e, and 13f.

Those agencies with results on individual questions that are either statistically significantly higher than 2013, higher than the 2017 government-wide average, or both may have taken actions in line with our leading practices for promoting the use of performance information. For example, the National Science Foundation had both types of statistically significant results on a question about having sufficient information on the validity of their performance data. Here, the agency's result increased 27 percentage points from 2013 to 2017. While the scope of our review does not allow us to definitively determine the reasons for the National Science Foundation's higher results, they suggest the agency has taken recent actions that greatly improved the availability and accessibility of information on the validity of performance data. In both 2013 and 2017, our analyses found this particular question to be the strongest predictor of higher performance information use when we tested for associations between the questions that reflect leading practices and our index.

Managers Whose Programs Were Subject to Data-Driven Reviews Reported Greater Use of Performance Information and Leading Practices

Our 2017 survey results show that managers who reported their programs were subject to data-driven reviews also were more likely to report using performance information in decision making to a greater extent (see figure 7). For the 35 percent of managers who reported being familiar with data-driven reviews, those who reported their programs had been subject to data-driven reviews to a "great" or "very great" extent had index scores that were statistically significantly higher than those whose programs were subject to these reviews to a lesser extent.

Figure 7: Managers Reporting Their Programs Were Subject to Data-Driven Reviews to a Greater Extent Also Reported Greater Use of Performance Information



Source: GAO analysis of survey results. | GAO-18-609SP

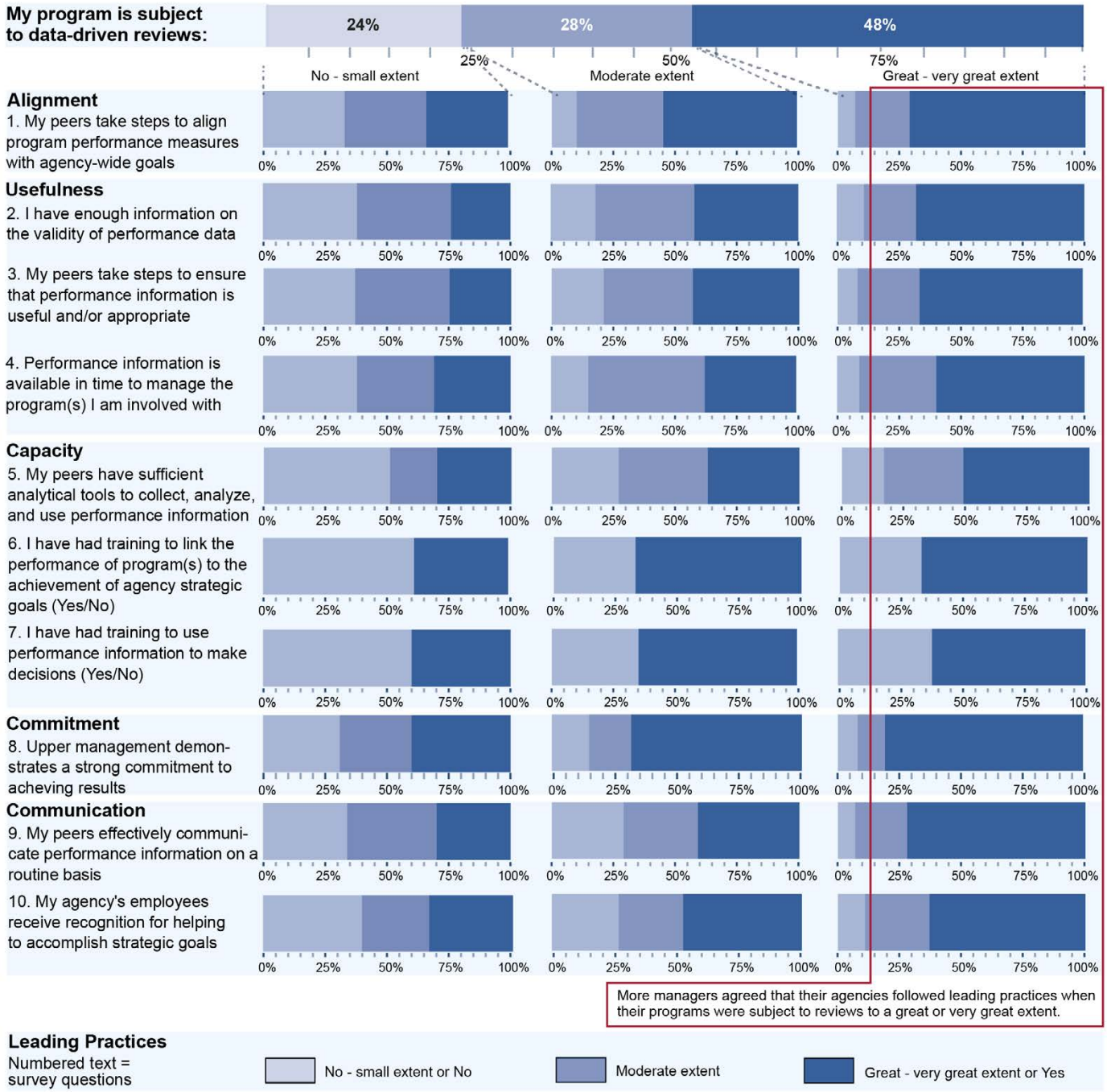
Note: The index is an average of responses from 11 survey questions and runs from 1 to 5. A 1 reflects that managers reported that they and others in their agency engage to "no extent" in the use of performance information for various decision-making activities. A 5 reflects to a "very great extent." The government-wide index score is an average of manager's responses from across the 24 CFO Act agencies. Results are presented with 95 percent confidence intervals.

Similarly, we found that being subject to data-driven reviews to a greater extent was also related to greater reporting of agencies following practices that can promote the use of performance information. As figure 8 shows, managers who reported their programs were subject to these reviews to a "great" or "very great" extent more frequently reported that their agencies followed the five leading practices that promote the use of performance information, as measured by the 10 related survey questions associated with higher scores on the index. For example, of the estimated 48 percent of managers who reported their programs were subject to data-driven reviews to a "great" or "very great" extent, 72 percent also reported that managers at their level (peers) effectively communicate performance information on a routine basis to a "great" or "very great" extent. Conversely, for the 24 percent of managers who reported their programs were subject to data-driven reviews to a "small" or "no" extent,

only 30 percent reported that managers at their level do this to a “great” or “very great” extent.[49]

[49]For the estimated 28 percent of managers who reported their programs were subject to data-driven reviews to a “moderate extent,” 41 percent also reported that managers at their level effectively communicate performance information on a routine basis to a “great” or “very great” extent.

Figure 8: Managers Reporting Their Programs Were More Subject to Data-Driven Reviews Also Reported Greater Use of Leading Practices



Source: GAO analysis of survey results. I GAO-18-609SP

Note: This figure is based on the 35 percent of survey respondents who responded that they were "somewhat" or "very" familiar with their agency's data-driven reviews. Survey items abbreviated. See survey items 6e, 6g, 9e, 9g, 9j, 9k, 9l, 10d, 13e, and 13f in GAO-17-776SP for details.

Opportunities Exist for the Executive Branch to Increase the Use of Performance Information within Agencies

Disparities Exist in the Use of Performance Information by Senior Agency Leaders and Managers at Lower Levels

Our past work has found that the Executive Branch has taken steps to improve the use of performance information in decision making by senior leaders at federal agencies. However, our survey results indicate those steps have not led to similar improvements in use by managers at lower levels.[50] Through its guidance to implement GPRAMA, OMB developed a framework for performance management in the federal government that involves agencies setting goals and priorities, measuring performance, and regularly reviewing and reporting on progress. This includes expectations for how agency senior leaders should use performance information to assess progress towards achieving agency priority goals through data-driven reviews, and strategic objectives through strategic reviews.[51] For example, GPRAMA requires, and OMB's guidance reinforces, that data-driven reviews should involve the agency head, Chief Operating Officer, Performance Improvement Officer, and other senior officials responsible for leading efforts to achieve each goal.[52]

[50]See, for example, GAO-17-775; GAO, *Managing for Results: Implementation of GPRA Modernization Act Has Yielded Mixed Progress in Addressing Pressing Governance Challenges*, GAO-15-819 (Washington, D.C.: Sept. 30, 2015); and GAO-13-518.

[51]A strategic objective is the outcome or impact the agency is intending to achieve through its various programs and initiatives. OMB's guidance states that agencies should use their annual strategic review process to synthesize available performance information and sources of evidence, and consider other perspectives, to assess the progress made on each strategic objective. It further states that the results of these reviews should inform many of the agency's decision-making processes. OMB, Circular No. A-11, pt 6, §§ 260.9-10, and 260.14 (2018).

[52]31 U.S.C. § 1121(b); OMB, Circular No. A-11, pt 6, §§ 260.2, 260.5 (2018).

OMB's guidance also identifies ways in which agency leaders should use the results of those reviews to inform various decision-making activities, such as revising strategies, formulating budgets, and managing risks. Our past work also found that agencies made progress in implementing these reviews and using performance information. In July 2015, we found that agencies generally were conducting their data-driven reviews in line with GPRAMA requirements and our related leading practices, including that agency leaders used the reviews to drive performance improvement.[53] In addition, in September 2017, we reported on selected agencies' experiences in implementing strategic reviews and found that the reviews helped direct leadership attention to progress on strategic objectives.[54]

Despite those findings, our survey results continue to show that the reported use of performance information by federal managers has generally not improved, and actually declined at some agencies. This could be because of the two different groups of agency officials covered by our work. GPRAMA's requirements, and the federal performance management framework established by OMB's guidance, apply at the agency-wide level and generally involve senior leaders. Our past work reviewing implementation of the act therefore focused on improvements in the use of performance information by senior leaders at the agency-wide level. In contrast, our surveys covered random samples of mid- and upper-level managers within those agencies, including at lower organizational levels such as component agencies. Their responses indicate that the use of performance information more broadly within agencies—at lower organizational levels—generally has not improved over time. The exception to this was managers whose programs were subject to the data-driven reviews required by GPRAMA. As described above, those managers were more likely to report greater use of

[53]GAO-15-579. In February 2013, we identified nine practices to promote effective data-driven reviews. To develop the practices, we reviewed academic and policy literature; information from practitioners at the local, state, and federal level; and OMB guidance. We surveyed Performance Improvement Officers at 24 federal agencies and examined review implementation at the Small Business Administration and the Departments of Energy and the Treasury. See GAO, *Managing for Results: Data-Driven Performance Reviews Show Promise But Agencies Should Explore How to Involve Other Relevant Agencies,* GAO-13-228 (Washington, D.C.: Feb. 27, 2013).

[54]GAO, *Managing for Results: Selected Agencies' Experiences in Implementing Strategic Reviews*, GAO-17-740R (Washington, D.C.: Sept. 7, 2017). The five agencies selected for this report were the General Services Administration, Small Business Administration, Department of State, U.S. Agency for International Development, and Department of the Treasury.

performance information in their agencies. This reinforces the value of the processes and practices put in place by GPRAMA. Our survey results suggest that limited actions have been taken to diffuse processes and practices related to the use of performance information to lower levels within federal agencies, where mid-level and senior managers make decisions about managing programs and operations.

Although OMB staff agreed that diffusing processes and practices to lower levels could lead to improved use of performance information, they told us they have not directed agencies to do so for a few reasons. First, OMB staff expressed concerns about potentially imposing a "one-size-fits-all" approach on agencies. They stated that agencies are best positioned to improve their managers' use of performance information, given their individual and unique missions and cultures, and the environments in which they operate. We agree that it makes sense for agencies to be able to tailor their approaches for those reasons. OMB's existing guidance provides an overarching framework that recognizes the need for flexibility and for agencies to tailor their approaches.[55] Moreover, given the long-standing and cross-cutting nature of this challenge, a government-wide approach also would provide a consistent focus on improving the use of performance information more extensively within agencies.

OMB staff also told us that they believed it would go beyond their mandate to direct agencies to extend GPRAMA requirements to lower levels. GPRAMA requires OMB to provide guidance to agencies to implement its requirements, which only apply at the agency-wide level. As noted earlier, however, GPRAMA also requires OMB to develop cross-agency priority (CAP) goals to improve the performance and management of the federal government. The President's Management Agenda established a CAP goal to leverage data as a strategic asset, in part, to improve the use of data for decision making and accountability throughout the federal government. This new CAP goal presents an opportunity for OMB and agencies to identify actions to expand the use of performance information in decision making throughout agencies.

[55]For example, OMB's guidance strongly encourages agencies to leverage existing decision-making processes to conduct strategic reviews. According to the guidance, in most cases, the strategic reviews should be integrated into existing agency management processes to raise key decisions, issues, and analysis to agency leadership. OMB's guidance also provides agencies flexibility in developing their processes, stating that agencies should use a tailored approach that is appropriate for the nature of the agency's programs, operations, and strategic objectives and evidence available. OMB, Cir. No. A-11, pt 6, § 260.11.

Plan for New CAP Goal Does Not Yet Contain Required Elements for Successful Implementation

As of June 2018, the action plan for implementing the Leveraging Data as a Strategic Asset CAP goal is limited.[56] According to the President's Management Agenda and initial CAP goal action plan, the goal primarily focuses on developing and implementing a long-term, enterprise-wide federal data strategy to better govern and leverage the federal government's data. It is through this strategy that, among other things, the administration intends to improve the use of data for decision making and accountability. However, the strategy is under development and not expected to be released until January 2019, with a related plan to implement it expected in April 2019.[57]

The existing action plan, released in March 2018 and updated in June 2018, does not yet include specific steps needed to improve the use of data—including performance information—more extensively within agencies. According to the action plan for the goal, potential actions currently under consideration focus on

- establishing agency "learning agendas" that prioritize the development and use of data and other evidence for decision-making;
- building agency capacity to use data and other evidence; and
- improving the timeliness of performance information and other data, and making that information available to decision makers and the public.[58]

Although developing learning agendas and building capacity could help improve the use of performance information in agencies, improving availability of data may be less effective. For example, as our past survey results have shown, increasing the availability of performance information

[56]GPRAMA requires a federal performance plan and quarterly progress updates related to the CAP goals. 31 U.S.C. §§ 1115(a), 1120, and 1122. OMB refers to these collectively as CAP goal action plans. Initial action plans were released in March 2018 and updated in June 2018.

[57]The CAP goal action plan refers to this implementation plan as the "Year 1 Action Plan." It also notes that additional information is available at https://strategy.data.gov/.

[58]The administration's plan for government reforms and reorganization released in June 2018 also encourages agencies to establish multiyear learning agendas that identify priority research questions and knowledge gaps, and outline their plans for evidence-building activities. OMB, *Delivering Government Solutions in the 21st Century: Reform Plan and Reorganization Recommendations* (Washington, D.C.: June 21, 2018).

has not resulted in corresponding increases in its use in decision making.[59]

We recognize that the CAP goal was created in March 2018. Nonetheless, it is important that OMB and its fellow goal leaders develop the action plan and related federal data strategy consistent with all key requirements to better ensure successful implementation. The action plan does not yet include complete information related to the following GPRAMA requirements:

- performance goals that define the level of performance to be achieved each year for the CAP goal;
- the various federal agencies, organizations, programs, and other activities that contribute to the CAP goal;
- performance measures to assess overall progress towards the goal as well as the progress of each agency, program, and other activity contributing to the goal; and
- clearly defined quarterly targets.[60]

Consistent with GPRAMA, Standards for Internal Control in the Federal Government identifies information that agencies are required to include in their plans to help ensure they achieve their goals.[61] The standards state that objectives—such as improving the use of data in decision making—should be clearly defined to enable the identification of risks. Objectives are to be defined in specific terms so they can be understood at all levels of the entity—in this case, government-wide as well as within individual agencies. This involves defining what is to be achieved, who is to achieve it, how it will be achieved, and the time frames for achievement.

[59]See, for example, GAO-17-775, GAO-13-518, and GAO-08-1026T. For the full list 13 products related to our past surveys of federal managers see the Related GAO Products section.

[60]31 U.S.C. § 1115(a). Officials from OMB, the Office of Science and Technology Policy, the Department of Commerce, and the Small Business Administration are identified as "goal leaders" for this CAP goal. According to OMB's guidance, goal leaders are responsible for developing strategies to achieve goals, managing execution, and regularly reviewing performance. See OMB, Circular No. A-11, pt 6, § 200.15 (2018).

[61]GAO, *Standards for Internal Control in the Federal Government*, GAO-14-704G (Washington, D.C.: Sept. 10, 2014). See Internal Controls 6.01-6.03.

Ensuring that future updates to the new CAP goal's action plan includes all required elements is particularly important, as our previous work has found that some past CAP goal teams did not meet all planning and reporting requirements.[62] For example, in May 2016 we found that most of the CAP goal teams we reviewed had not established targets for all performance measures they were tracking. This limited the transparency of their efforts and the ability to track progress toward established goals.[63] We recommended that OMB, working with the Performance Information Council (PIC), report on actions that CAP goal teams are taking, or plan to take, to develop such targets and performance measures. OMB staff generally agreed and, in July 2017, told us they were working, where possible, to assist the development of measures for CAP goals. However, the recommendation has not been addressed and OMB staff said the next opportunity to address it would be when the administration established new CAP goals (which took place in March 2018). Following the initial release of the new CAP goals, CAP goal teams are to more fully develop the related action plans through quarterly updates. Given the ongoing importance of meeting these planning and reporting requirements, we will continue to monitor the status of actions to address this recommendation as implementation of the new CAP goals proceeds.

Our Survey Results Identify Additional Opportunities for the PIC to Improve Federal Use of Performance Information

While the PIC, which is chaired by OMB, has contributed to efforts to enhance the use of performance information, our survey results identify additional opportunities to further those efforts. The PIC's past efforts have included hosting various working groups and learning events for agency officials to provide performance management guidance, and developing resources with relevant practices. For example, the PIC created a working group focused on agency performance reviews, which was used to share recommendations for how agencies can implement reviews, along with a guide with practices for effectively implementing strategic reviews.[64] In January 2018, staff supporting the PIC joined with

[62]GAO, *Managing for Results: OMB Improved Implementation of Cross-Agency Priority Goals, But Could Be More Transparent About Measuring Progress*, GAO-16-509 (Washington, D.C.: May 20, 2016); GAO-13-518; and *Managing for Results: GAO's Work Related to the Interim Crosscutting Priority Goals under the GPRA Modernization Act*, GAO-12-620R (Washington, D.C.: May 31, 2012).

[63]GAO-16-509.

[64]We have also reported on effective practices for implementing data-driven reviews and strategic reviews. See GAO, *Managing for Results: Practices for Effective Agency Strategic Reviews*, GAO-15-602 (Washington, D.C.: July 29, 2015); and GAO-13-228.

staff from another GSA office to create a new group called Fed2Fed Solutions.[65] This group consults with agencies and provides tailored support, such as data analysis and performance management training for agency officials, to help them address specific challenges related to organizational transformation, data-driven decision making, and other management improvement efforts.

Our survey results identify useful information related to potential promising practices and challenges that OMB and the PIC could use to inform efforts to enhance the use of performance information more extensively within agencies (e.g., at lower levels). As was previously described, the PIC has responsibilities to (1) facilitate the exchange among agencies of proven practices, and (2) work to resolve government-wide or cross-cutting performance issues, such as challenges.[66] Our analyses of 2017 survey results identified instances where agencies may have found effective ways to enhance the use of performance information by agency leaders and managers in decision making, as well as instances where agencies (and their managers) face challenges in doing so.

Specifically, based on analyses of our survey responses, we identified 14 agencies that may have insights into specific practices that led to recent improvements in managers' use of performance information, or ways that they maintain relatively high levels of use by their managers when compared to the rest of the government. Figure 9 summarizes the agencies identified earlier in the report that had statistically significant increases, or results higher than the government-wide average, on our index or individual survey questions. As the figure shows, several agencies had statistically significant results across all three sets of analyses and therefore may have greater insights to offer: the General Services Administration, National Aeronautics and Space Administration, and the National Science Foundation.

[65]Previously, the General Services Administration's Office of Executive Councils provided analytical, management, and administrative support for the PIC, the PMC, and other government-wide management councils. In January 2018, the office was abolished and its functions, staff, and authorities, along with those of the Shared Services Management Office, were reallocated to the newly created Shared Solutions and Performance Improvement Office.

[66]31 U.S.C. § 1124(b).

Figure 9: Agencies with Survey Results That Suggest They Could Help Identify Proven Practices Related to Using Performance Information

Agency	Agency use of performance information index result	Result(s) on individual survey questions related to:	
		Use of performance information	Leading practices
Agency for International Development	+	+	
Department of Agriculture		↑	↑
Department of Defense		↑	
Department of Justice		↑	↑
Department of Labor			↑
Department of the Interior			↑
Department of the Treasury			↑
Department of Veterans Affairs			↑
Environmental Protection Agency		↑	
General Services Administration	+	+	↑
National Aeronautics and Space Administration	+	↑ +	↑ +
National Science Foundation	↑ +	↑ +	↑ +
Nuclear Regulatory Commission			+
Social Security Administration		+	+

Legend

↑ Agency result on the index or an individual survey question represents a statistically significant increase in 2017 versus 2013.

\+ Agency result on the index or an individual survey question result is statistically significantly higher than the government-wide average in 2017.

Source: GAO analysis of survey data. | GAO-18-609SP

Note: While the Social Security Administration had positive, statistically significant results on individual survey questions related to the use of performance information and leading practices, the agency's index score had a statistically significant decline in 2017 compared to 2013.

In addition, our analyses identified nine agencies where results suggest managers face challenges that have hampered their ability to use performance information. Figure 10 summarizes the agencies identified earlier in the report that had statistically significant decreases, or results lower than the government-wide average, on our index or individual survey questions. As the figure shows, the Office of Personnel

Management had statistically significant decreases in all three sets of analyses.

Figure 10: Agencies with Survey Results That Suggest They Face Challenges Related to Using Performance Information

Agency	Agency use of performance information index result	Result(s) on individual survey questions related to:	
		Use of performance information	Leading practices
Department of Homeland Security	▬	▼	
Department of State			▼ ▬
Department of Transportation	▬		
Department of the Treasury			▼
Department of Veterans Affairs		▼	
Nuclear Regulatory Commission		▬	
Office of Personnel Management	▼	▼	▼
Small Business Administration		▼	
Social Security Administration	▼		

Legend

▼ Agency result on the index or an individual survey question represents a statistically significant decrease in 2017 versus 2013.

▬ Agency result on the index or an individual survey question is statistically significantly lower than the government-wide average in 2017.

Source: GAO analysis of survey data. | GAO-18-609SP

Four agencies—the Departments of the Treasury and Veterans Affairs, the Nuclear Regulatory Commission, and the Social Security Administration—were common to both of the figures above. That is, they had results that indicate they may have insights on some aspects of using performance information and face challenges in other aspects. As was mentioned earlier, to provide proper context, these results should be considered in relation to the range of agency results and the government-wide average (provided in detail in the agency summaries in appendix I).

Given the prioritization of other activities, such as the recent creation of the Fed2Fed Solutions program, the PIC has not yet undertaken a systematic approach that could improve the use of performance

information by managers at lower levels within agencies. Such an approach would involve identifying and sharing practices that have led to improved use, as well as identifying common or cross-cutting challenges that have hampered such use. The results of our analyses could help the PIC do so, and in a more targeted manner. By identifying and sharing proven practices, the PIC could further ensure that agency leaders and managers are aware of effective or proven ways they can use performance information to inform their decisions across the spectrum of activities they manage within their agencies. Those proven practices also may help agency leaders and managers resolve any identified challenges.

Furthermore, in September 2017, we found that, for the estimated 35 percent of managers who reported familiarity with data-driven reviews, the more they viewed their programs being subject to a review, the more likely they were to report the reviews were driving results and were conducted in line with our leading practices for using performance information. Despite the reported benefits of and results achieved through data-driven reviews, they were not necessarily widespread. As noted above, GPRAMA requires agencies to conduct such reviews for agency priority goals, which represent a small subset of goals, and they are required at the departmental level. These reasons may explain why most managers reported they were not familiar with the reviews.

As a result, we recommended that OMB should work with the PIC to identify and share among agencies practices for expanding the use of data-driven reviews. OMB staff agreed with our recommendation but have yet to address it. In June 2018, OMB updated its annual guidance to agencies to explicitly encourage them to expand data-driven reviews to include other goals, priorities, and management areas as applicable to improve organizational performance. However, as of June 2018, OMB and the PIC have yet to take any steps to identify and share practices for expanding the use of these reviews in line with our recommendation. Given the additional analyses we conducted for this report—which show that being subject to data-driven reviews is related to greater reported use of performance information and leading practices that promote such use—we continue to believe these further actions would help agencies implement these reviews more extensively. We reiterate the importance of the September 2017 recommendation and will continue to monitor OMB's progress to address it.

Conclusions

For more than 20 years, our work has highlighted weaknesses in the use of performance information in federal decision making. While the

Executive Branch has taken some actions in recent years, such as establishing a framework for performance management across the federal government, our survey results underscore that more needs to be done to improve the use of performance information more extensively within agencies and government-wide. The President's Management Agenda and its related CAP goal to leverage data as a strategic asset present an opportunity to do so, as it aims to improve data-driven decision making. As OMB and its fellow goal leaders more fully develop the action plan for achieving this goal, providing additional details for its plans to improve data-driven decision making would help provide assurance that it can be achieved.

As part of those initiatives, our survey results could provide a useful guide for targeting efforts. Officials at each agency could use these results to identify areas for additional analysis and potential actions that could help improve the use of performance information across the agency and at lower levels. Similarly, OMB and the PIC could use the results to identify broader issues in need of government-wide attention. It will also be important, however, for OMB and the PIC to go beyond this analysis and work with agencies to identify and share proven practices for increasing the use of performance information at lower levels within agencies, as well as challenges that may be hampering agencies' ability to do so.

Recommendations for Executive Action

We are making the following two recommendations to OMB:

The Director of OMB should direct the leaders of the Leveraging Data as a Strategic Asset CAP Goal to ensure future updates to the action plan, and the resulting federal data strategy, provide additional details on improving the use of data, including performance information, more extensively within federal agencies. The action plan should identify performance goals; contributing agencies, organizations, programs, and other activities; those responsible for leading implementation within these contributors; planned actions; time frames; and means to assess progress. (Recommendation 1)

The Director of OMB, in coordination with the PIC, should prioritize efforts to identify and share among agencies proven practices for increasing, and challenges that hamper, the use of performance information in decision making more extensively within agencies. At a minimum, this effort should involve the agencies that our survey suggests may offer such insights. (Recommendation 2)

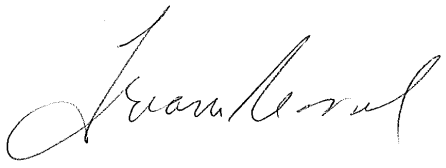
Agency Comments

We provided a draft of this report to the Director of the Office of Management and Budget for review and comment. We also provided a draft of the report to the heads of each of the 24 federal agencies covered by our survey.

OMB had no comments, and informed us that it would assess our recommendations and consider how best to respond.

We are sending copies of this report to congressional requesters, the Director of the Office of Management and Budget, the heads of each of the 24 agencies, and other interested parties. This report will also be available at no charge on the GAO website at http://www.gao.gov.

If you or your staff have any questions about this report, please contact me at (202) 512-6806 or mcneilt@gao.gov. Contact points for our Offices of Congressional Relations and Public Affairs may be found on the last page of our report. Key contributors to this report are listed in appendix IV.



Triana McNeil
Acting Director, Strategic Issues

List of Requesters

The Honorable Claire McCaskill
Ranking Member
Committee on Homeland Security and Governmental Affairs
United States Senate

The Honorable Gary Peters
Ranking Member
Subcommittee on Federal Spending Oversight and Emergency Management
Committee on Homeland Security and Governmental Affairs
United States Senate

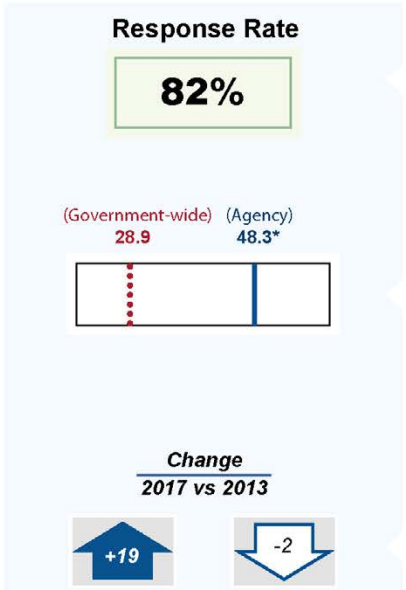
The Honorable Thomas R. Carper
Ranking Member
Permanent Subcommittee on Investigation
Committee on Homeland Security and Governmental Affairs
United States Senate

The Honorable Heidi Heitkamp
Ranking Member
Subcommittee on Regulatory Affairs and Federal Management
Committee on Homeland Security and Governmental Affairs
United States Senate

The Honorable Elijah Cummings
Ranking Member
Committee on Oversight and Government Reform
House of Representatives

Appendix I: Summaries of Agency Survey Results

This appendix presents, for 24 federal agencies, selected results from our 2017 survey of federal managers. Each summary is two pages and includes the following information:



This is the agency's weighted survey response rate in 2017. Response rates across the government ranged from 36 percent to 82 percent. Results from agencies with low response rates are associated with a higher level of uncertainty and should be interpreted with caution.

On these bars:

- the solid vertical line reflects the agency's result;
- the dotted line reflects the government-wide average;
- the box surrounding these lines reflects the range of results for all 24 agencies, from lowest to highest; and
- an asterisk (*) indicates that the difference between the agency's result and government-wide average was statistically significant at the 95 percent confidence interval.

This shows how the agency's results in 2017 compare to those from 2013. The number in the arrow provides the difference from 2013. Using a 95 percent confidence interval, a shaded arrow indicates a difference was statistically significant, while a non-shaded arrow indicates a difference was not statistically significant.

The index is an average of managers' responses from 11 survey questions related to the use of performance information. It runs from 1 to 5. A 1 reflects that managers reported that they, and others in the agency, engage to "no extent" in the use of performance information for various decision-making activities. A 5 reflects to a "very great extent."

This section presents results on the 11 individual questions that comprise the index. Each bar presents the percent of managers who responded either "great extent" or "very great extent" on the related survey question so the scale runs from 0 to 100.

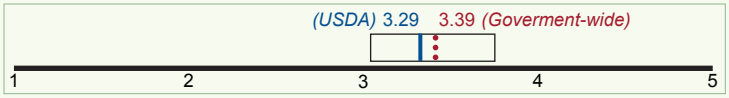
This section presents results on the 10 individual questions highly associated with the use index. Each bar presents the percent of managers who responded either "great extent" or "very great extent" (or "yes") on the related survey question so the scale runs from 0 to 100.

U.S. Department of Agriculture

Response Rate

73%

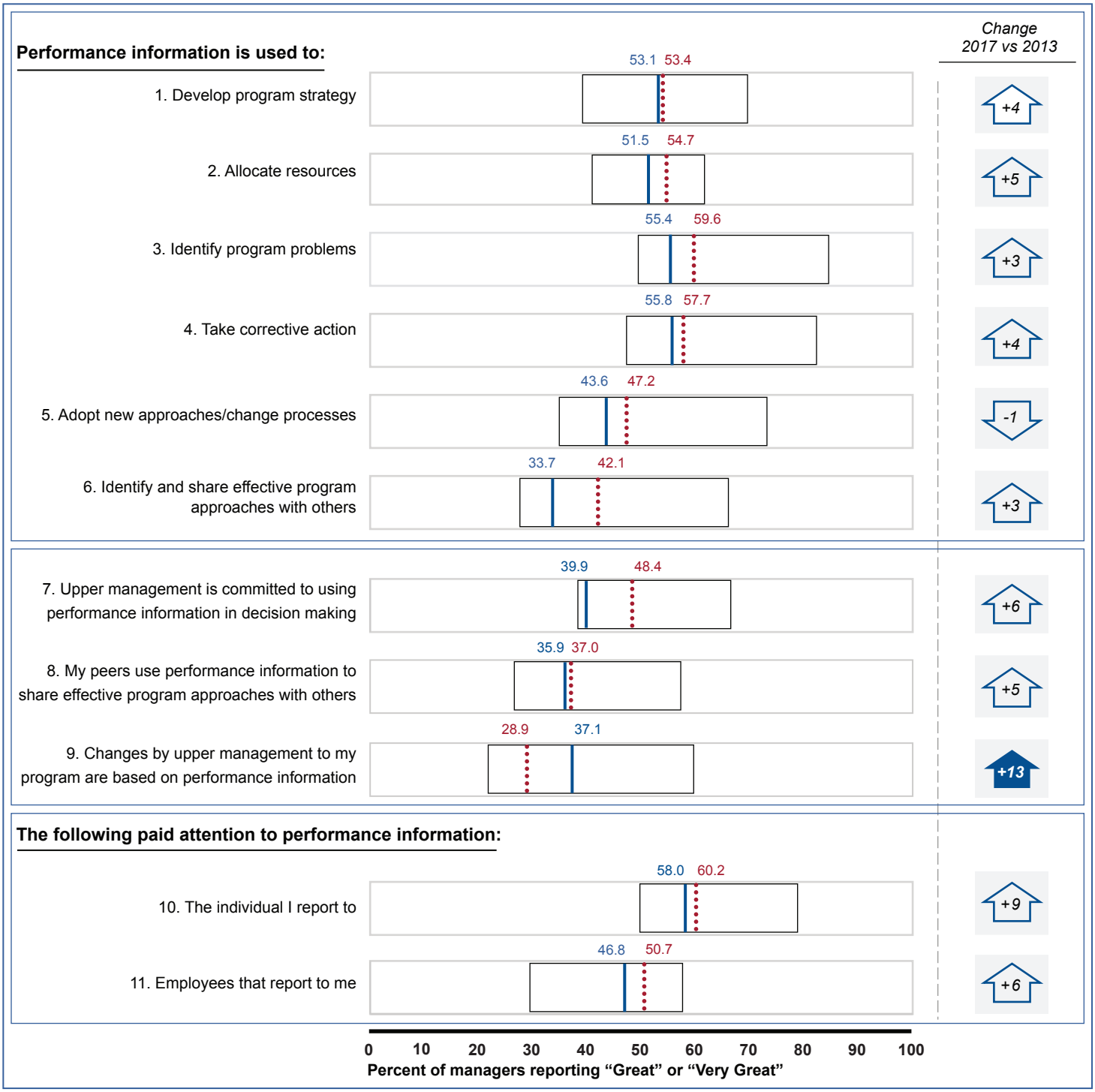
Use of Performance Information Index Results



Change 2017 vs 2013

+0.16

11 Questions that Comprise the Index



Range of all agencies' results | Agency result | Government-wide average

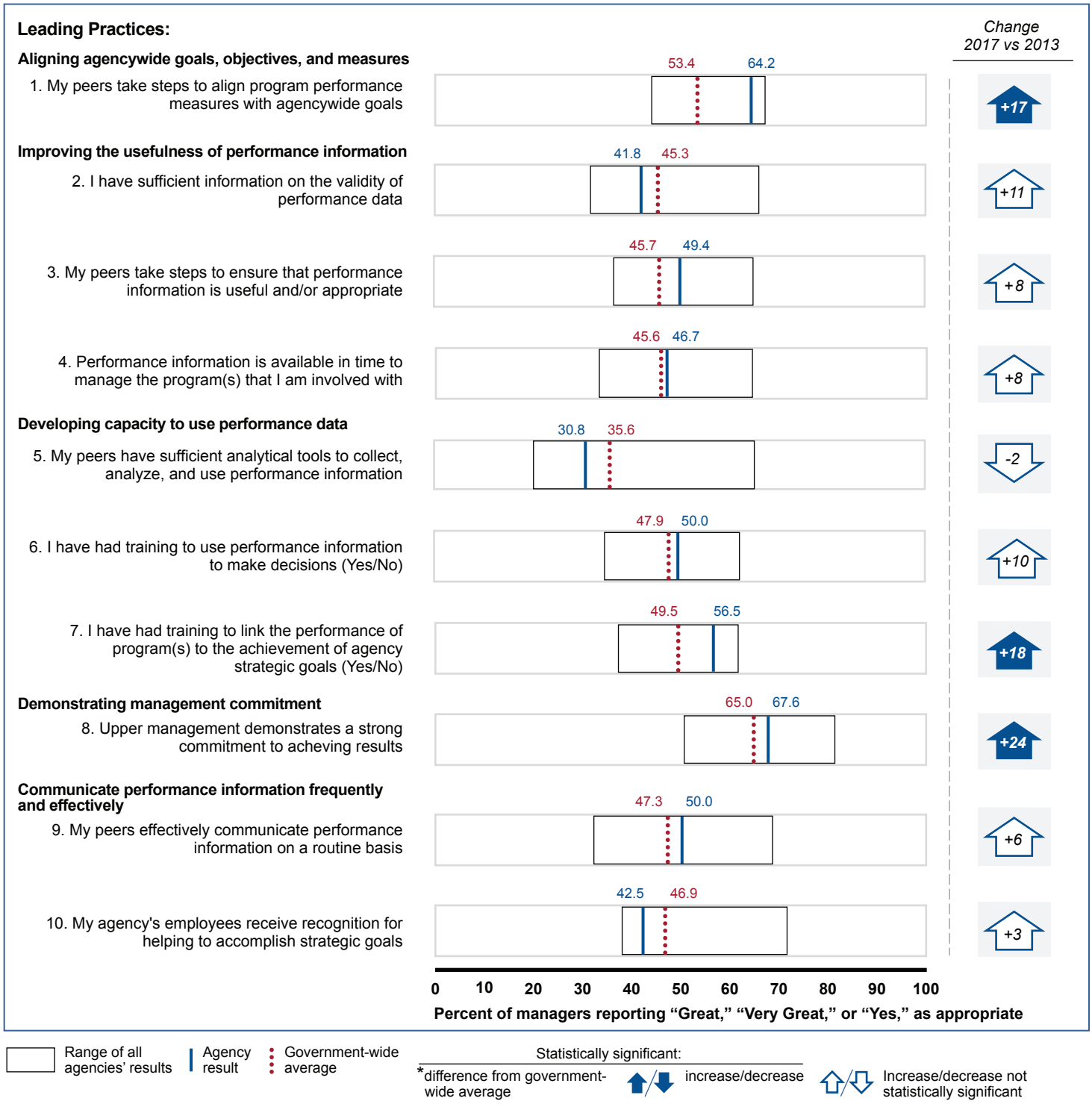
Statistically significant:

*difference from government-wide average

increase/decrease

Increase/decrease not statistically significant

10 Questions Related to Leading Practices That Promote the Use of Performance Information

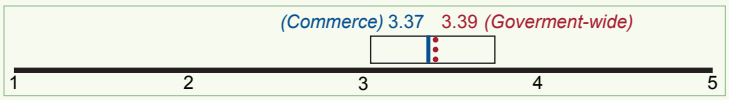


Department of Commerce

Response Rate

72%

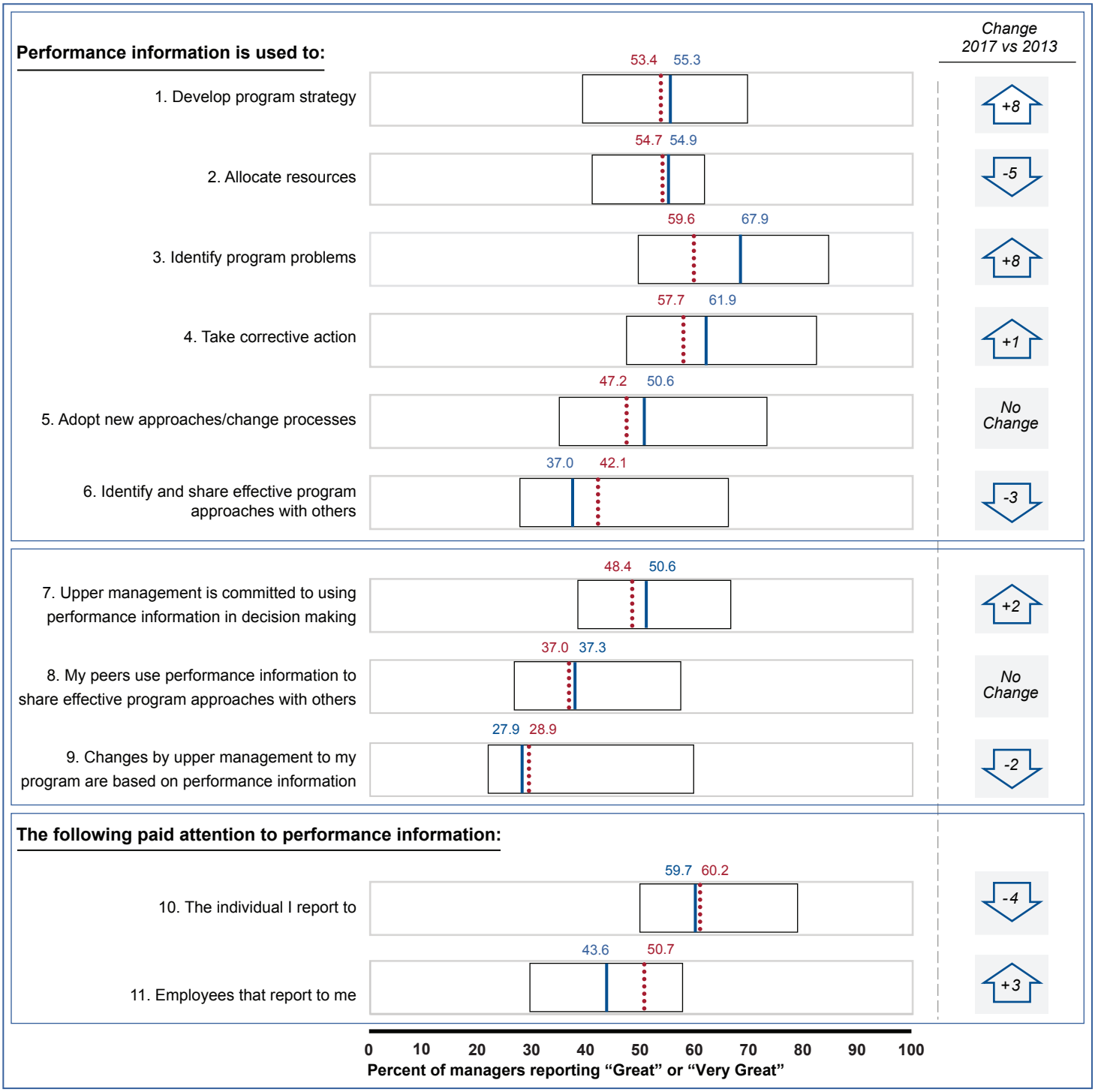
Use of Performance Information Index Results



Change 2017 vs 2013

+0.02

11 Questions that Comprise the Index



Range of all agencies' results | Agency result | Government-wide average

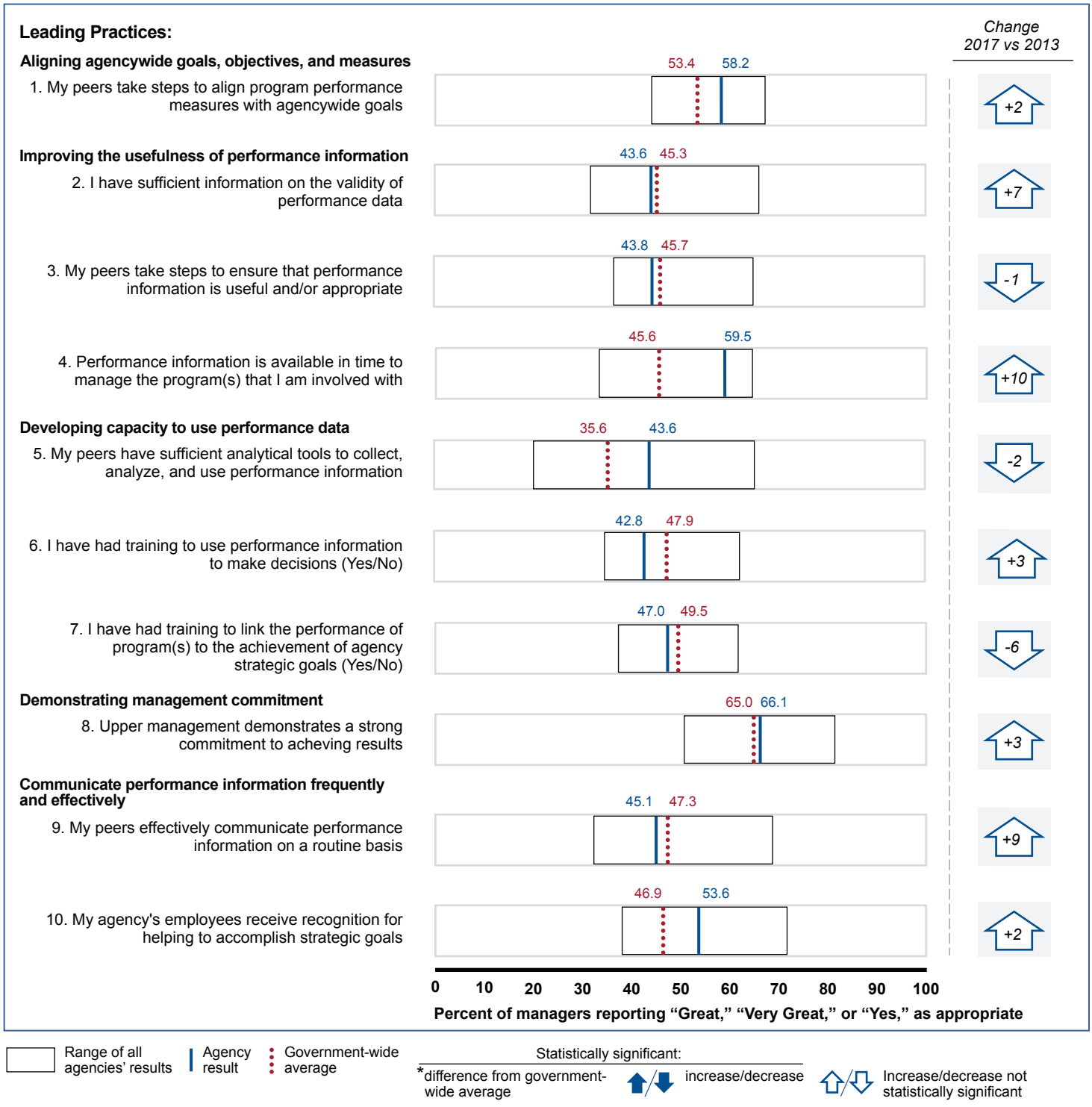
Statistically significant:

*difference from government-wide average

increase/decrease

Increase/decrease not statistically significant

10 Questions Related to 5 Leading Practices That Promote the Use of Performance Information

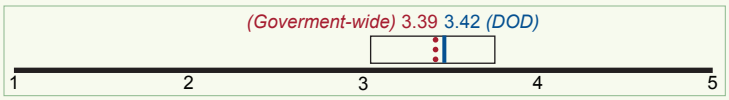


Department of Defense

Response Rate

57%

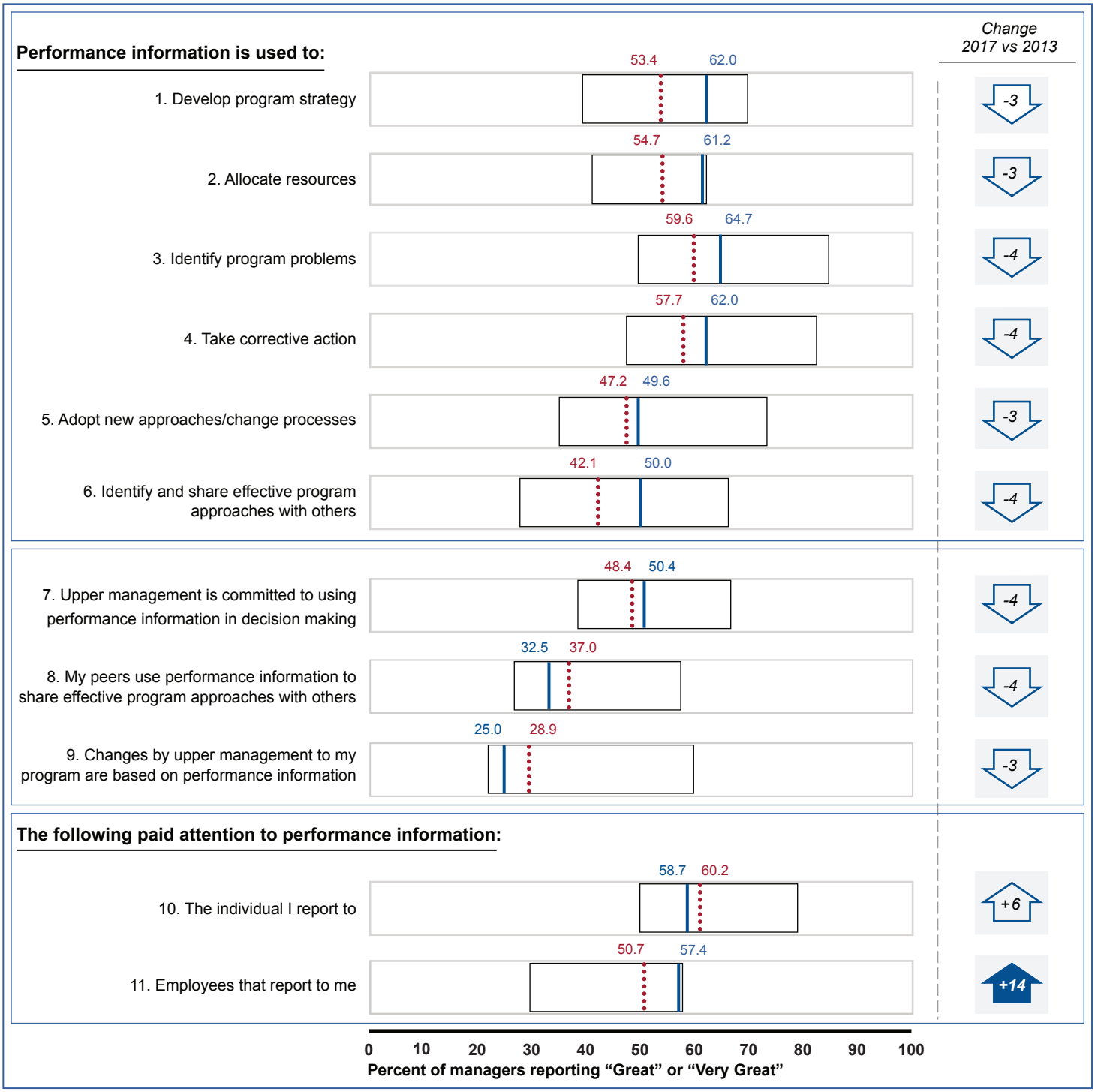
Use of Performance Information Index Results



Change 2017 vs 2013

-0.02

11 Questions that Comprise the Index

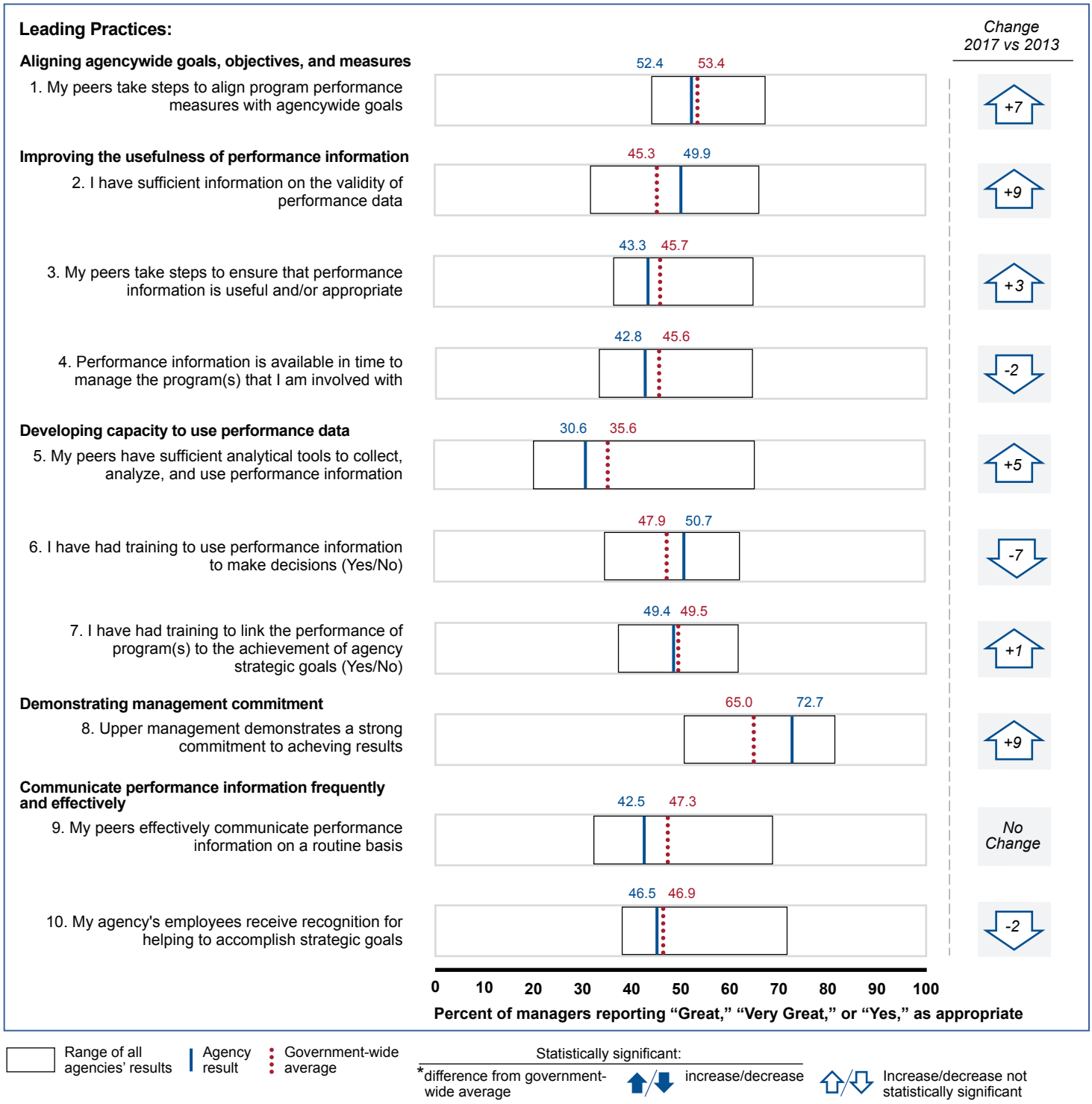


Range of all agencies' results | Agency result | Government-wide average

Statistically significant:

*difference from government-wide average | increase/decrease | Increase/decrease not statistically significant

10 Questions Related to Leading Practices That Promote the Use of Performance Information

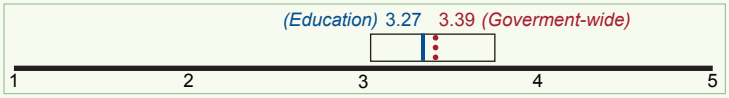


Department of Education

Response Rate

73%

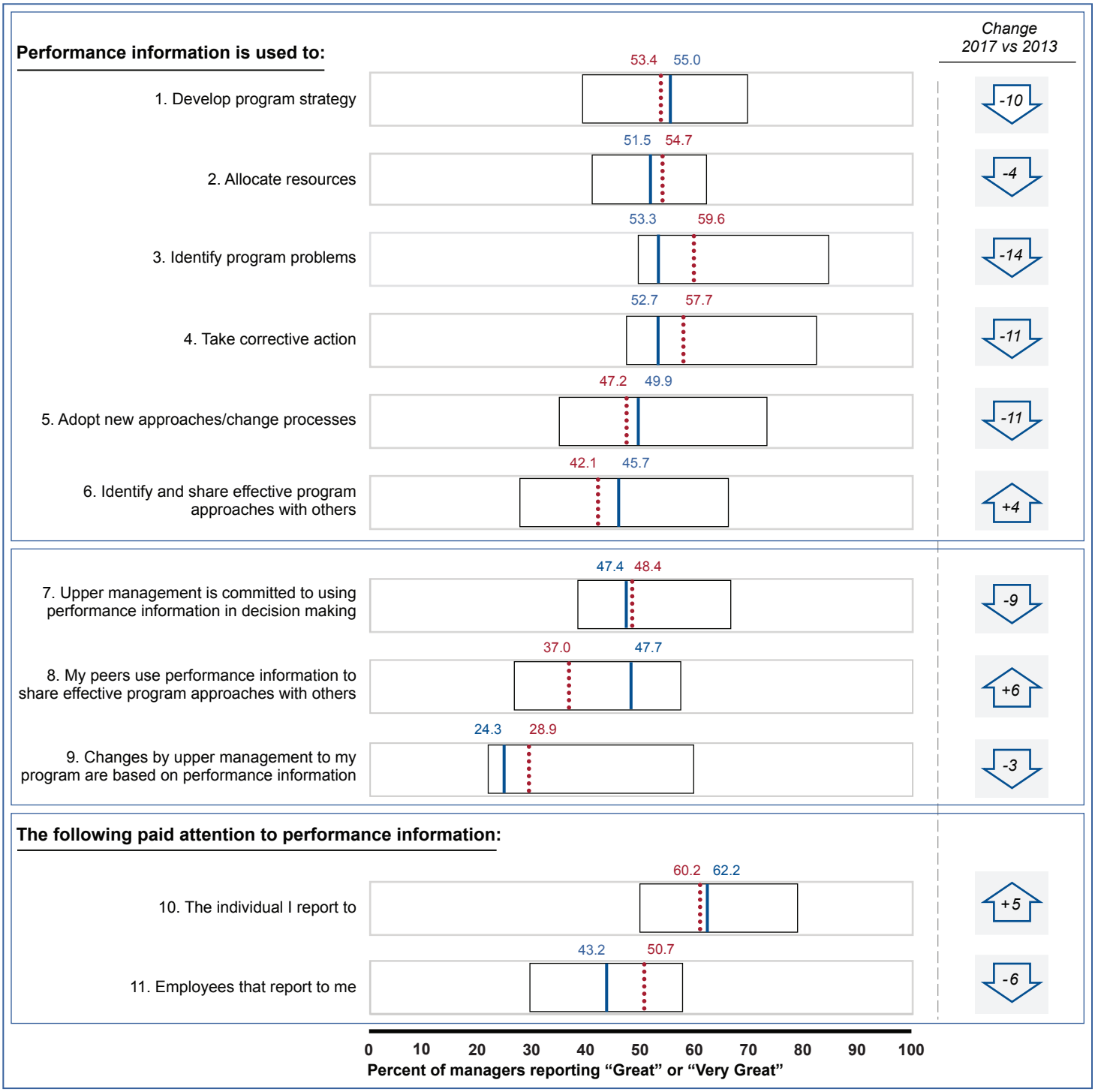
Use of Performance Information Index Results



Change 2017 vs 2013

-0.17

11 Questions that Comprise the Index



Range of all agencies' results | Agency result | Government-wide average

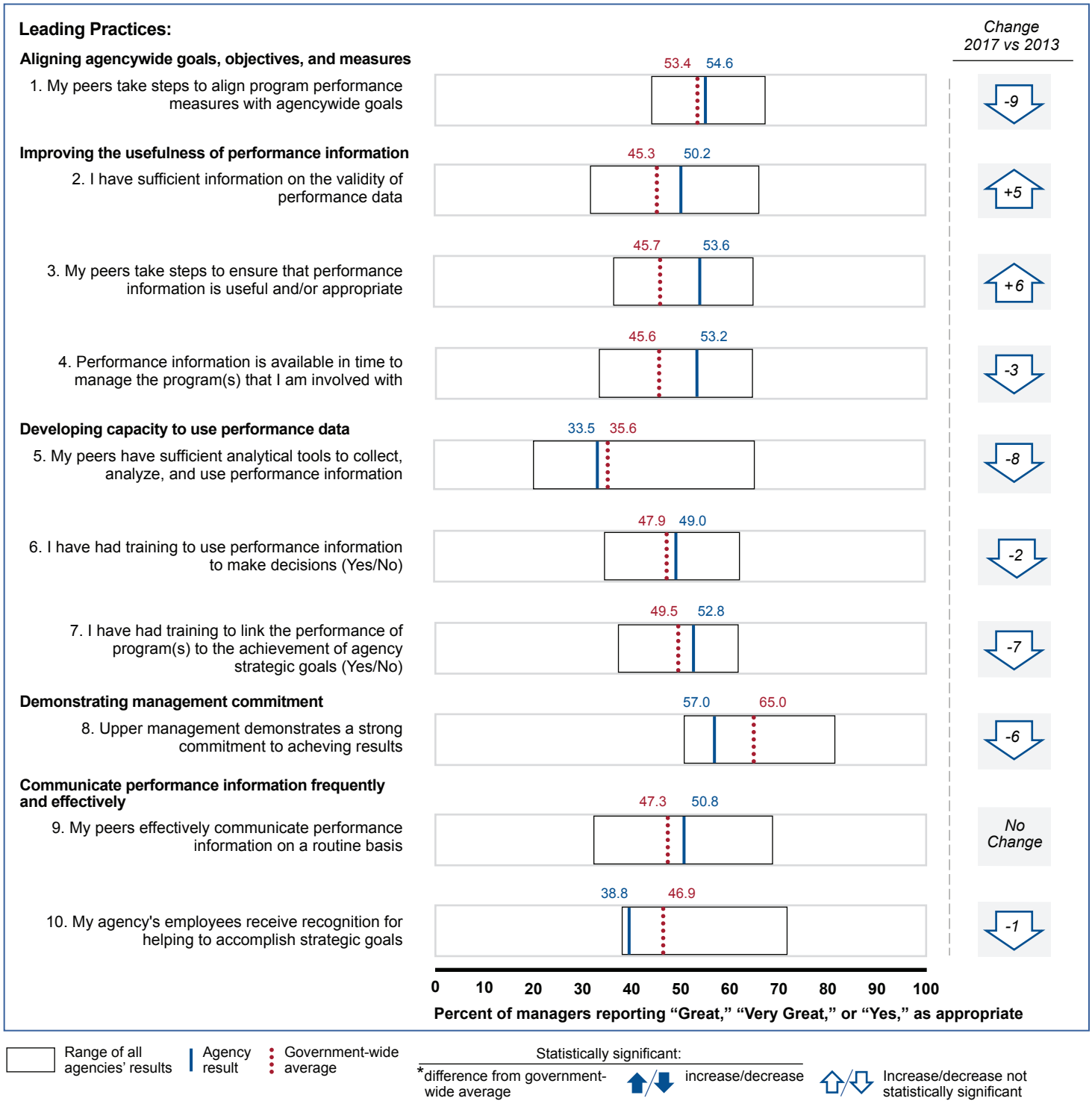
Statistically significant:

*difference from government-wide average

increase/decrease

Increase/decrease not statistically significant

10 Questions Related to Leading Practices That Promote the Use of Performance Information

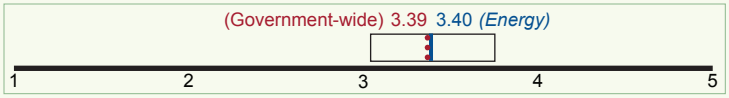


Department of Energy

Response Rate

77%

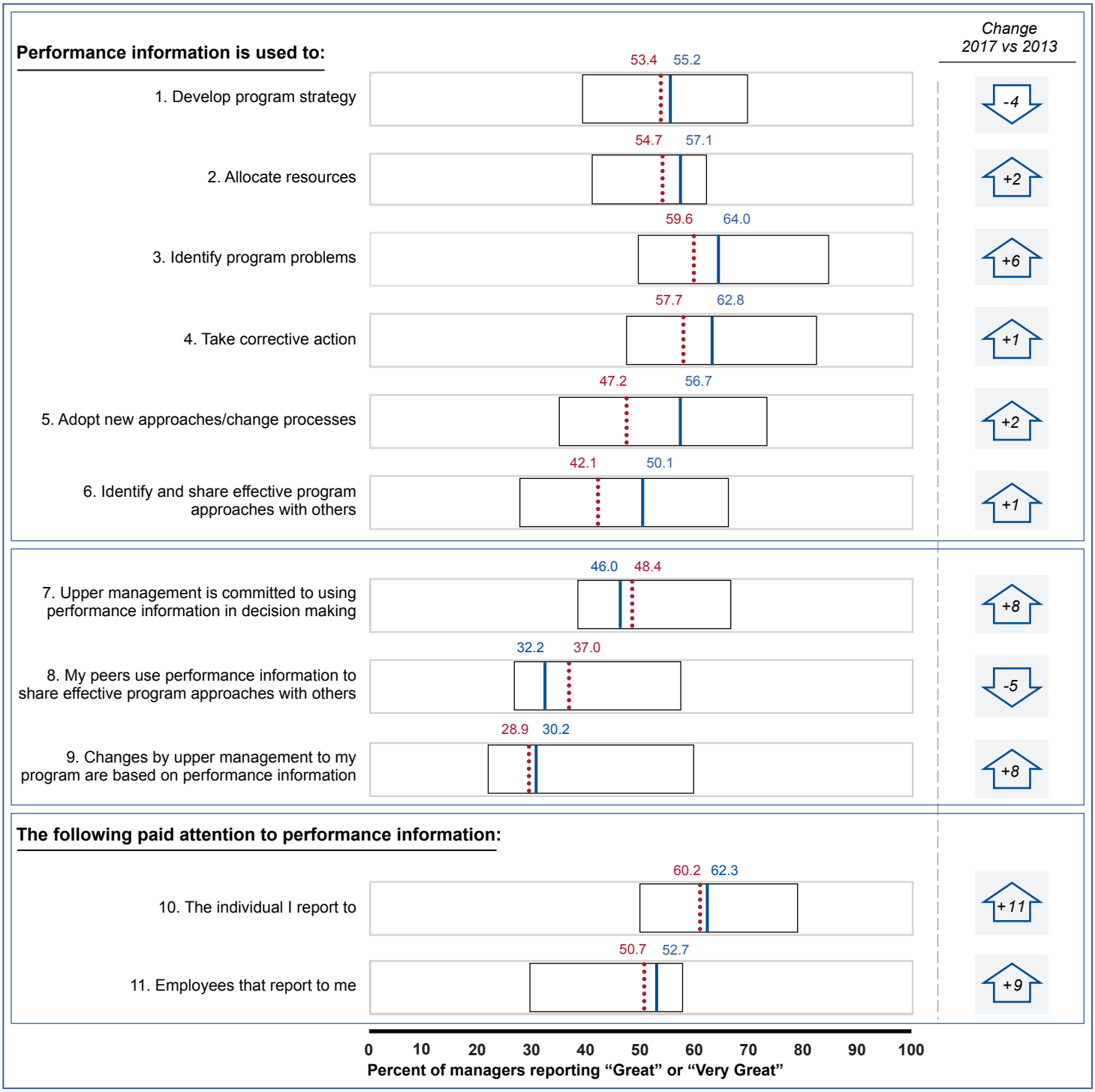
Use of Performance Information Index Results



Change 2017 vs 2013

+0.06

11 Questions that Comprise the Index



Range of all agencies' results | Agency result | Government-wide average

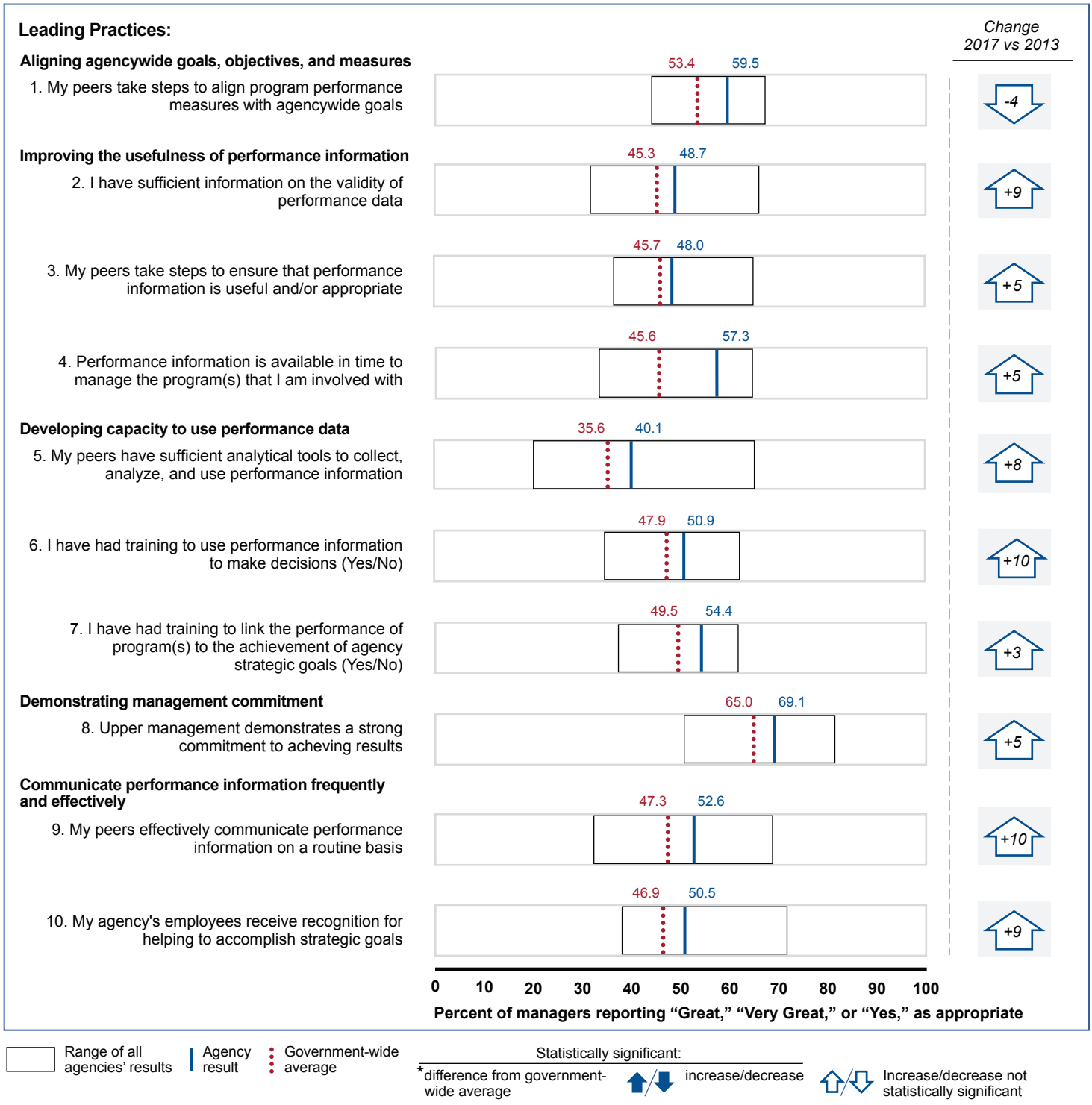
Statistically significant:

*difference from government-wide average

increase/decrease

Increase/decrease not statistically significant

10 Questions Related to Leading Practices That Promote the Use of Performance Information

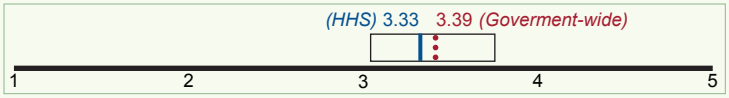


Department of Health & Human Services

Response Rate

82%

Use of Performance Information Index Results



Change 2017 vs 2013

-.04

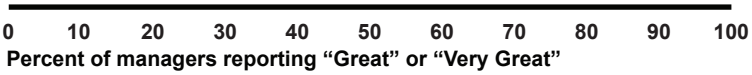
11 Questions that Comprise the Index

Performance information is used to:

		Change 2017 vs 2013
1. Develop program strategy	50.4 / 53.4	-2
2. Allocate resources	54.7 / 59.6	+5
3. Identify program problems	58.9 / 59.6	-2
4. Take corrective action	56.4 / 57.7	-7
5. Adopt new approaches/change processes	47.2 / 50.9	-8
6. Identify and share effective program approaches with others	36.6 / 42.1	-5
7. Upper management is committed to using performance information in decision making	48.4 / 50.0	+3
8. My peers use performance information to share effective program approaches with others	27.3 / 37.0	-8
9. Changes by upper management to my program are based on performance information	28.9 / 31.7	-2

The following paid attention to performance information:

10. The individual I report to	58.7 / 60.2	+1
11. Employees that report to me	45.3 / 50.7	+4



Percent of managers reporting "Great" or "Very Great"

Range of all agencies' results | Agency result | Government-wide average

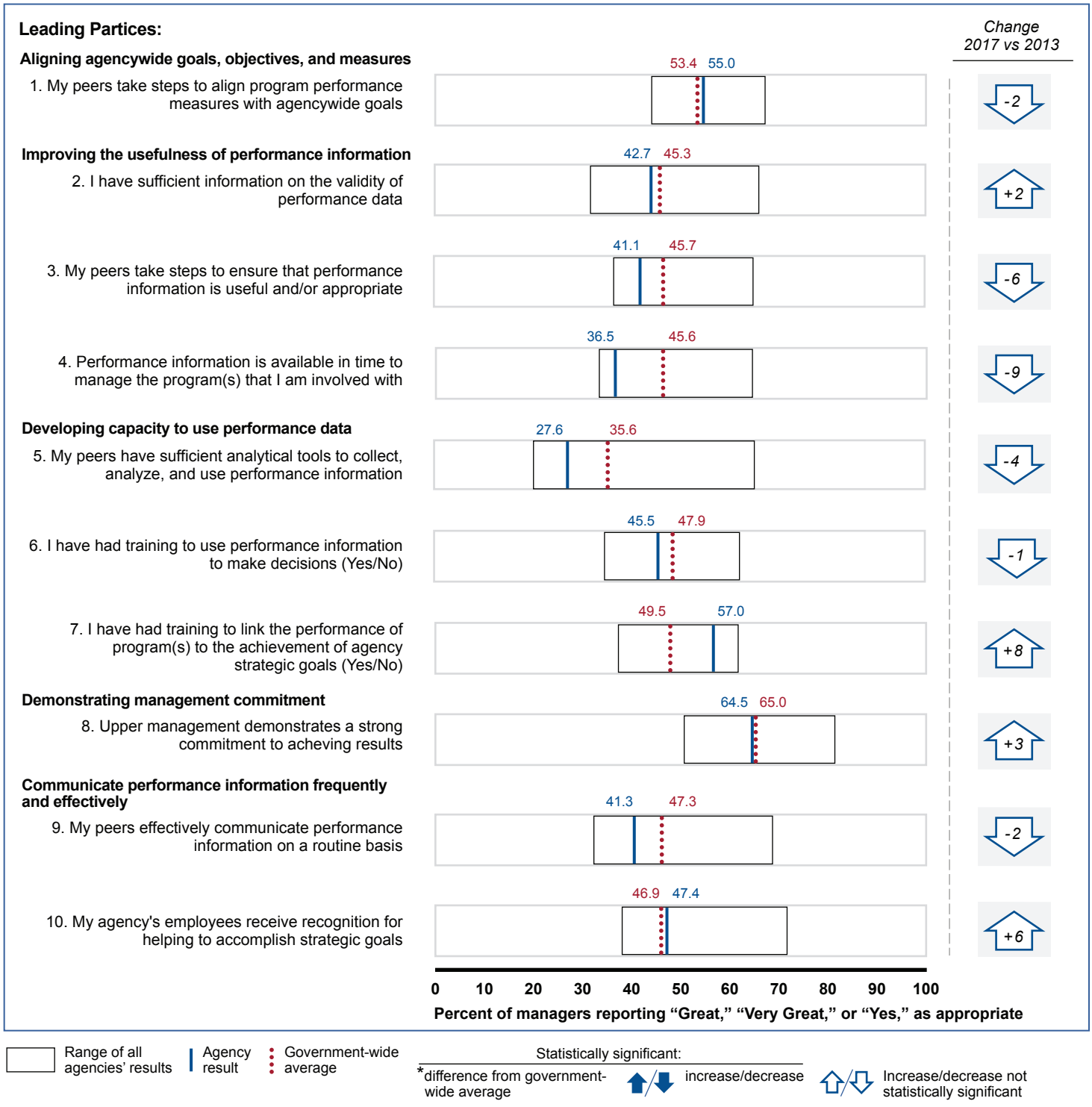
Statistically significant:

*difference from government-wide average

increase/decrease

Increase/decrease not statistically significant

10 Questions Related to Leading Practices That Promote the Use of Performance Information

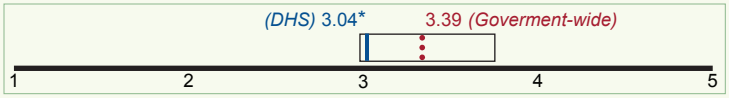


Department of Homeland Security

Response Rate

70%

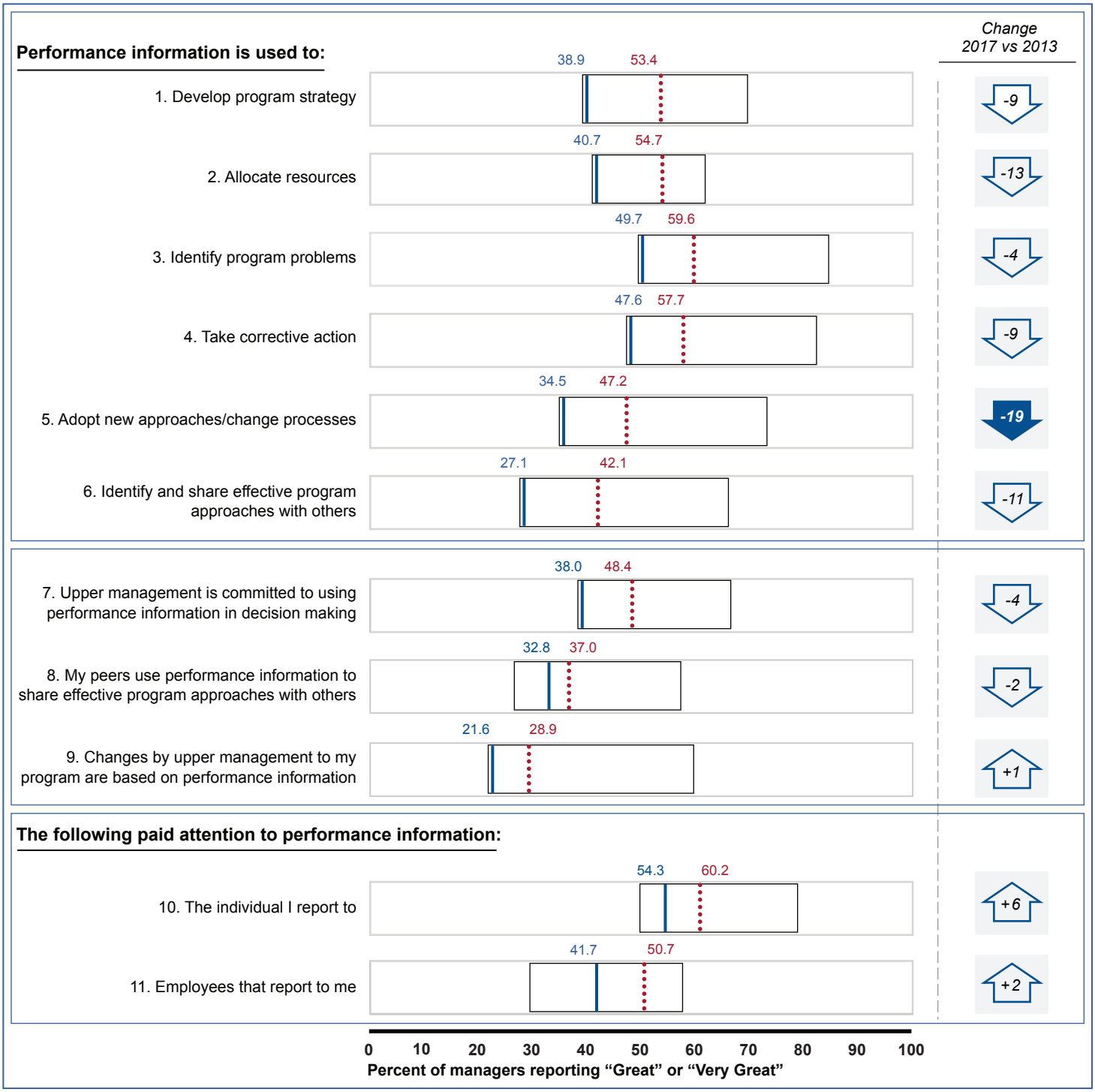
Use of Performance Information Index Results



Change 2017 vs 2013

-0.18

11 Questions that Comprise the Index



Range of all agencies' results | Agency result | Government-wide average

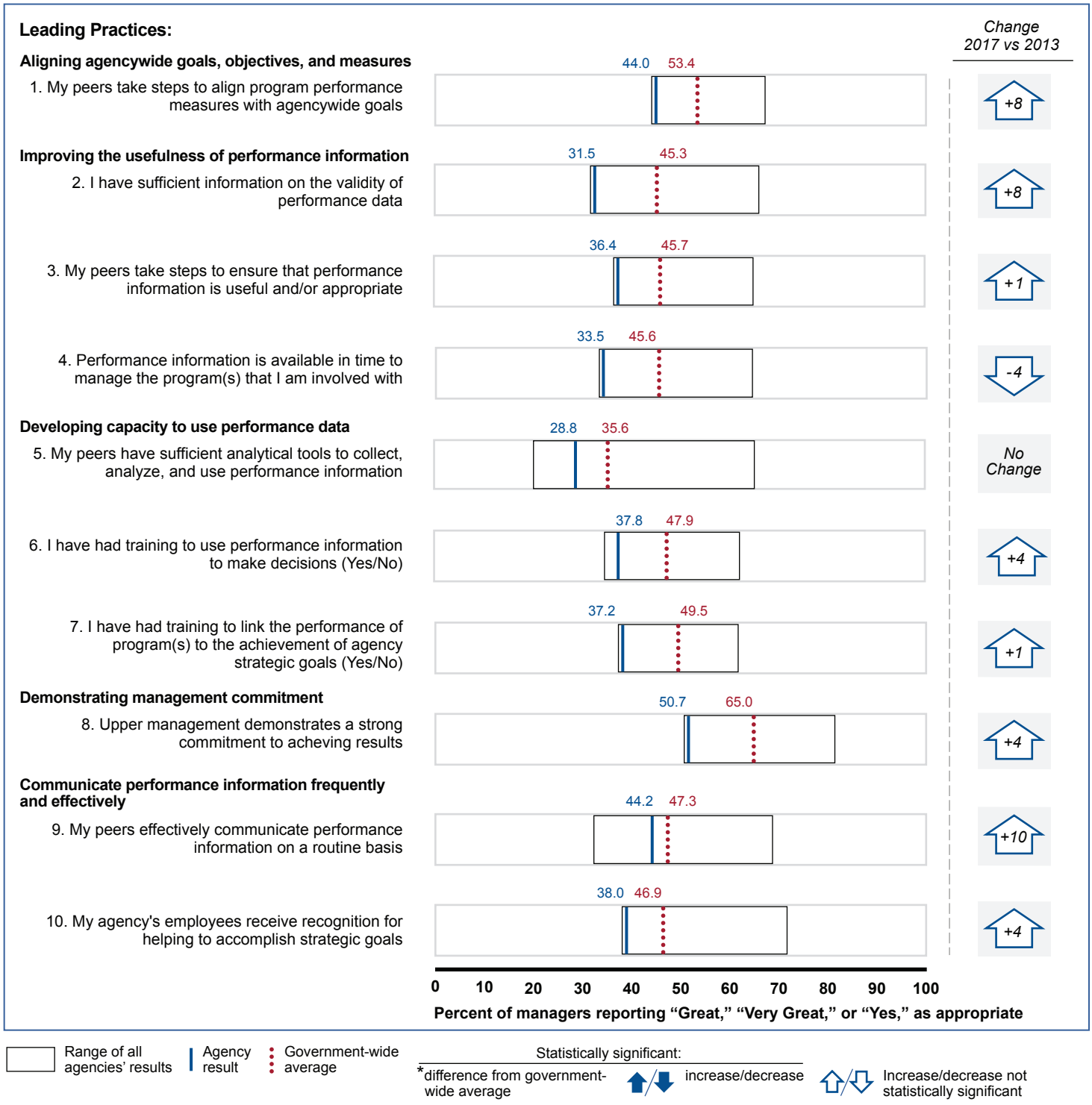
Statistically significant:

*difference from government-wide average

increase/decrease

Increase/decrease not statistically significant

10 Questions Related to Leading Practices That Promote the Use of Performance Information

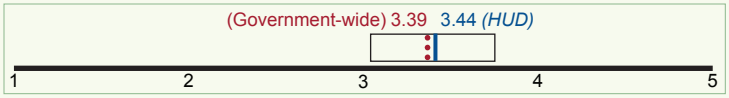


Housing and Urban Development

Response Rate

71%

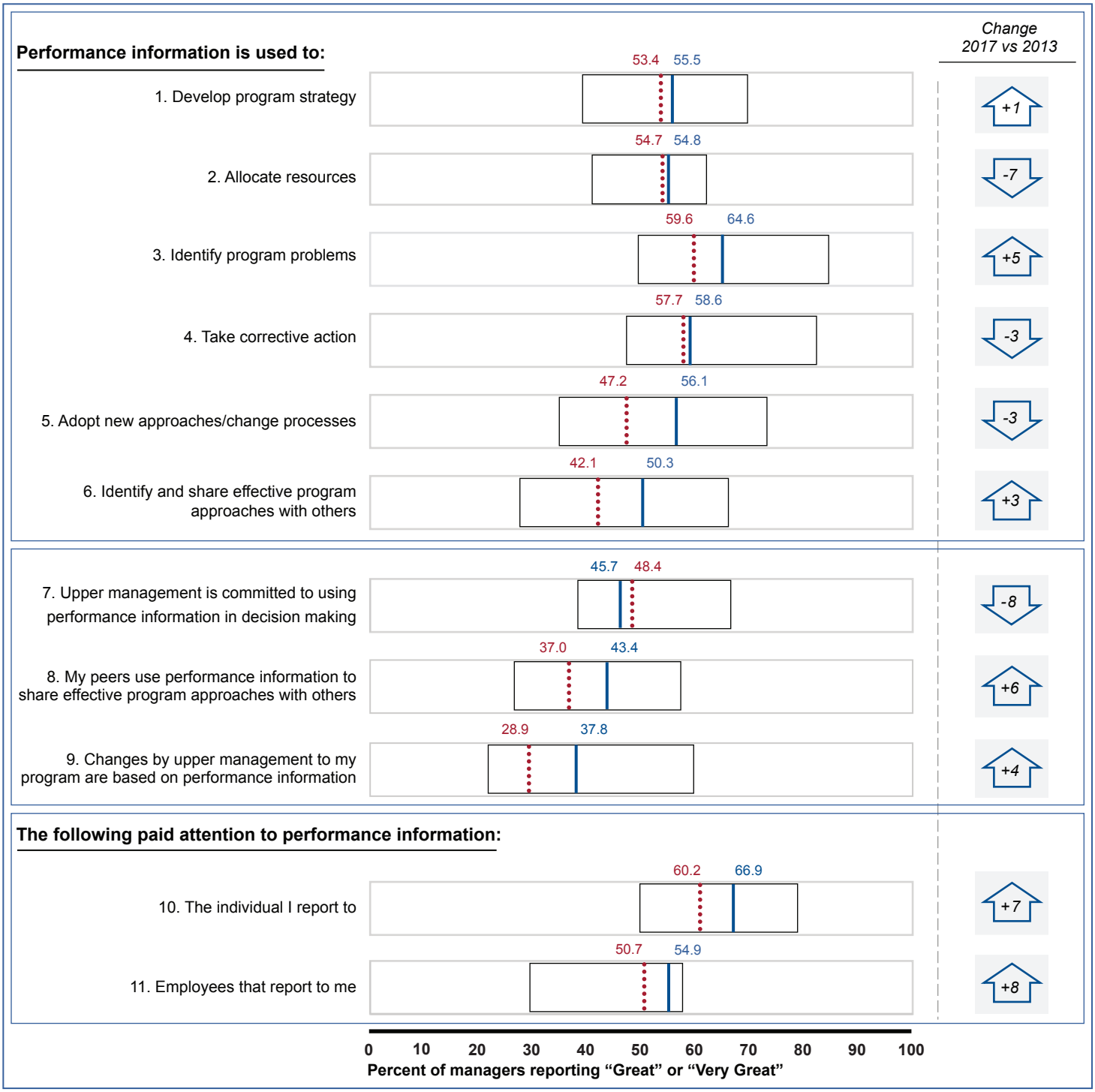
Use of Performance Information Index Results



Change 2017 vs 2013

+0.06

11 Questions that Comprise the Index



Range of all agencies' results | Agency result | Government-wide average

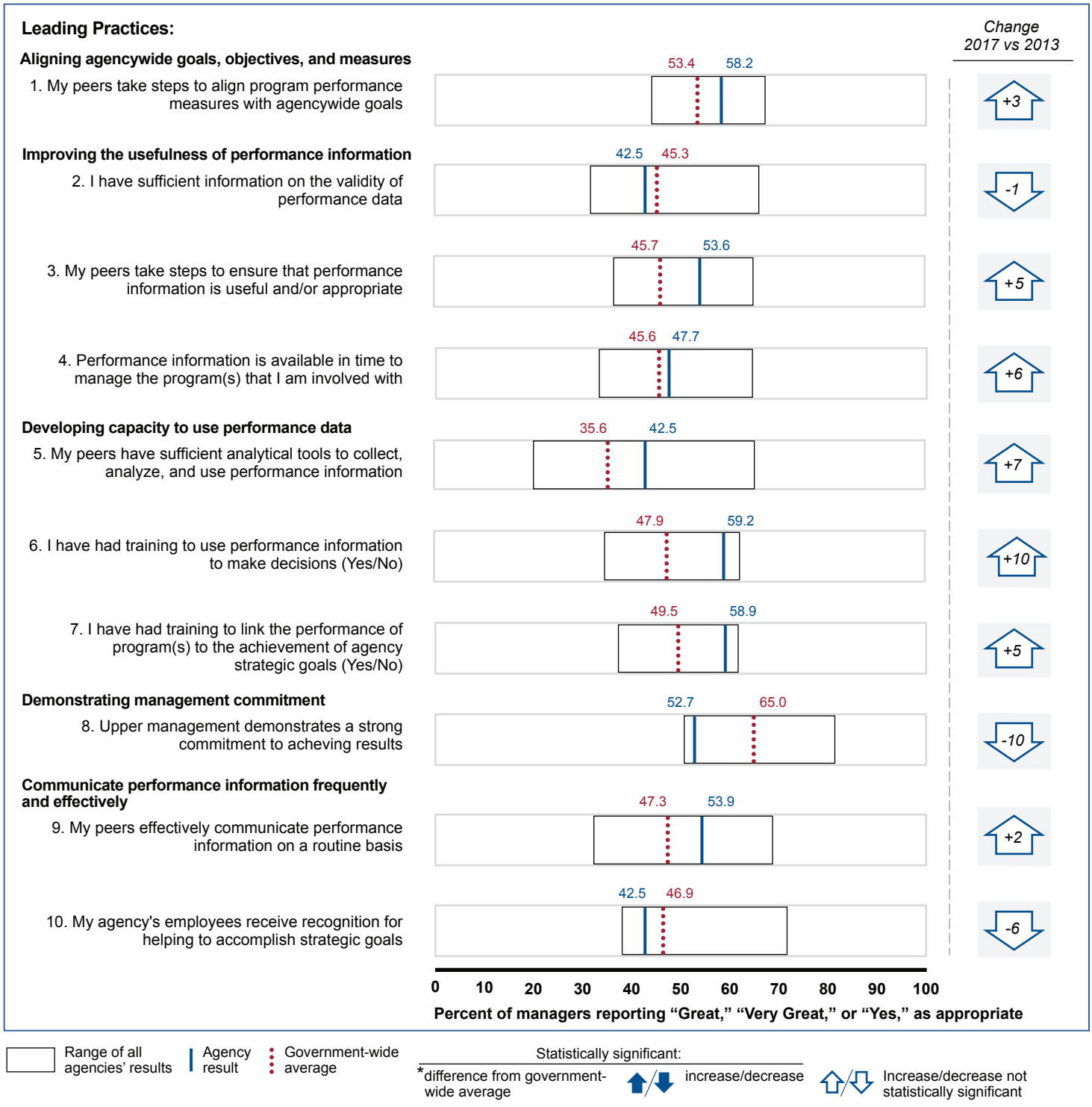
Statistically significant:

*difference from government-wide average

increase/decrease

Increase/decrease not statistically significant

10 Questions Related to Leading Practices That Promote the Use of Performance Information

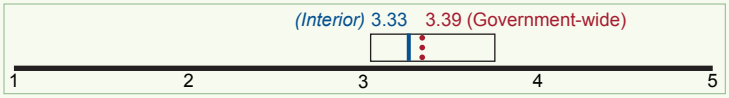


Department of the Interior

Response Rate

72%

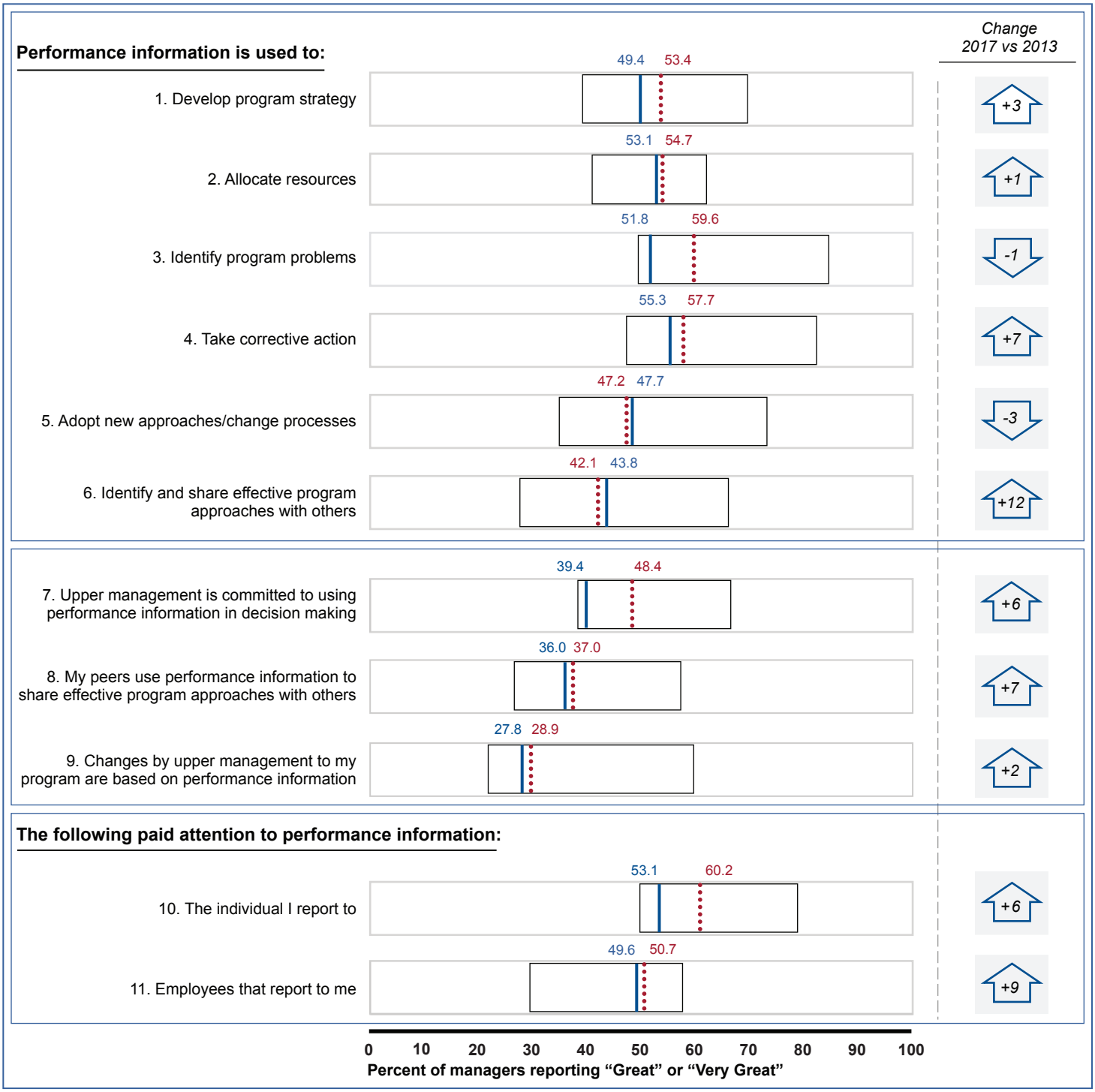
Use of Performance Information Index Results



Change 2017 vs 2013

+0.11

11 Questions that Comprise the Index



Range of all agencies' results | Agency result | Government-wide average

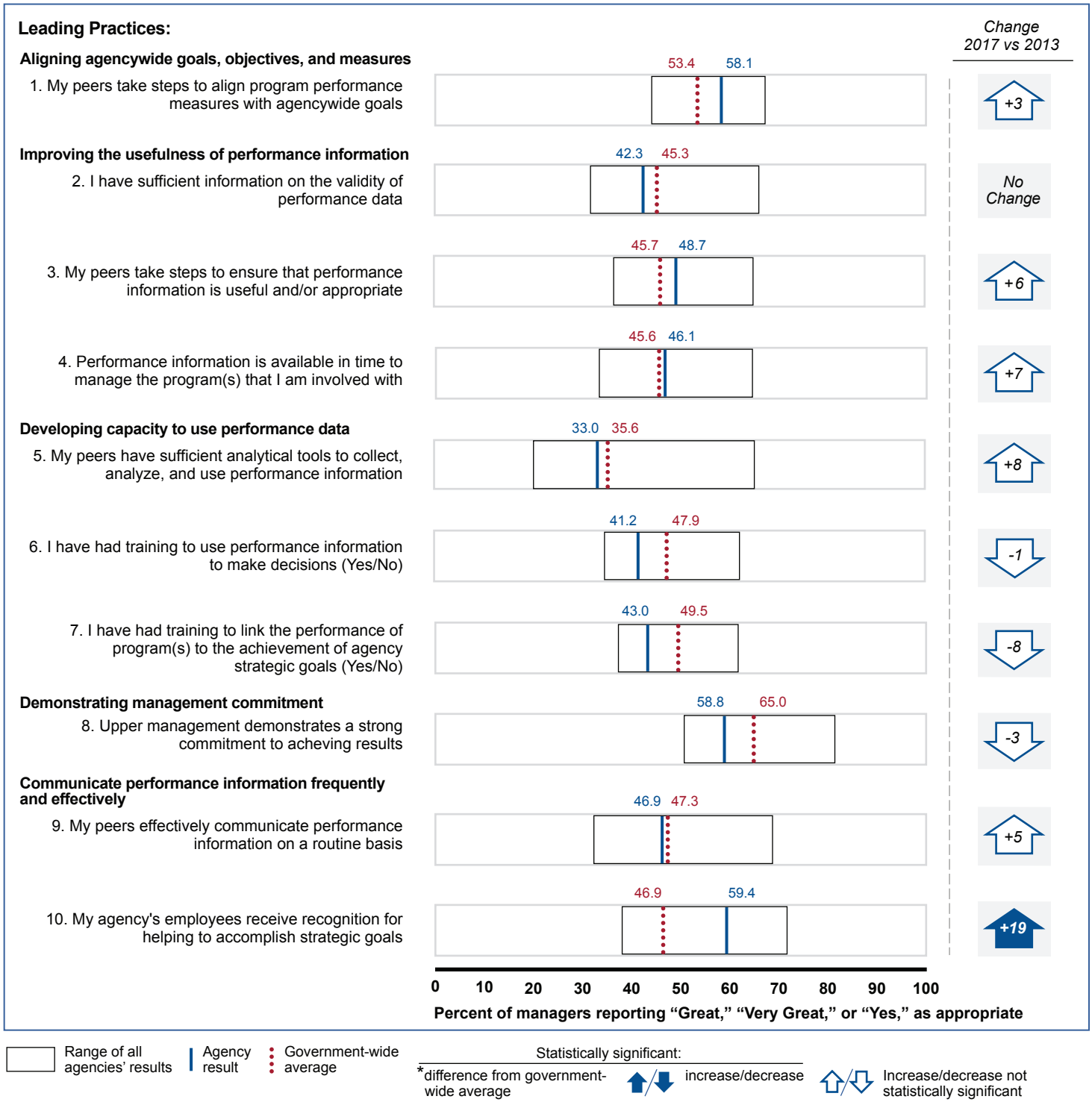
Statistically significant:

*difference from government-wide average

increase/decrease

Increase/decrease not statistically significant

10 Questions Related to Leading Practices That Promote the Use of Performance Information

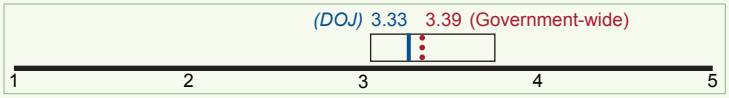


Department of Justice

Response Rate

36%

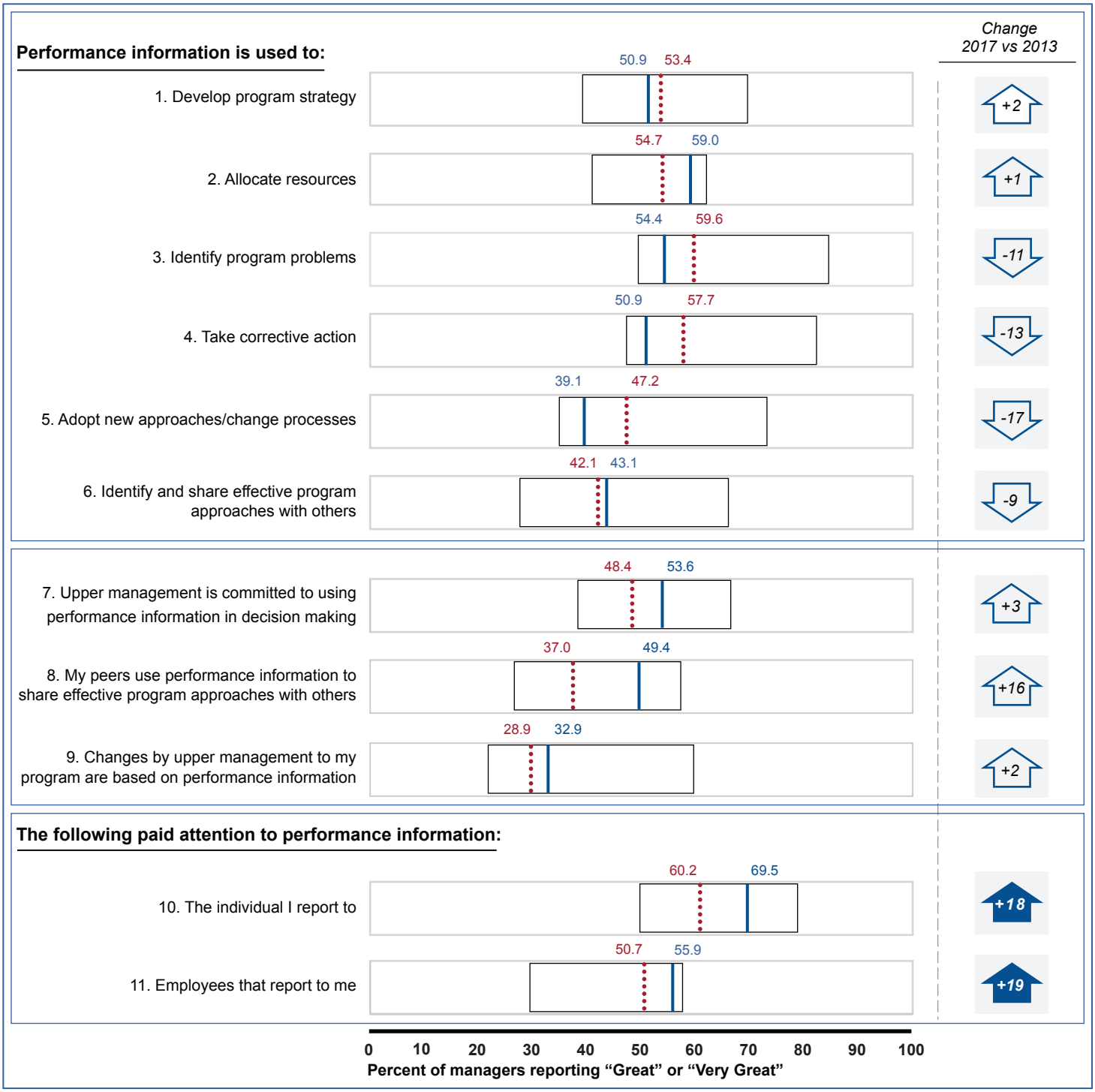
Use of Performance Information Index Results



Change 2017 vs 2013

+0.03

11 Questions that Comprise the Index



Range of all agencies' results | Agency result | Government-wide average

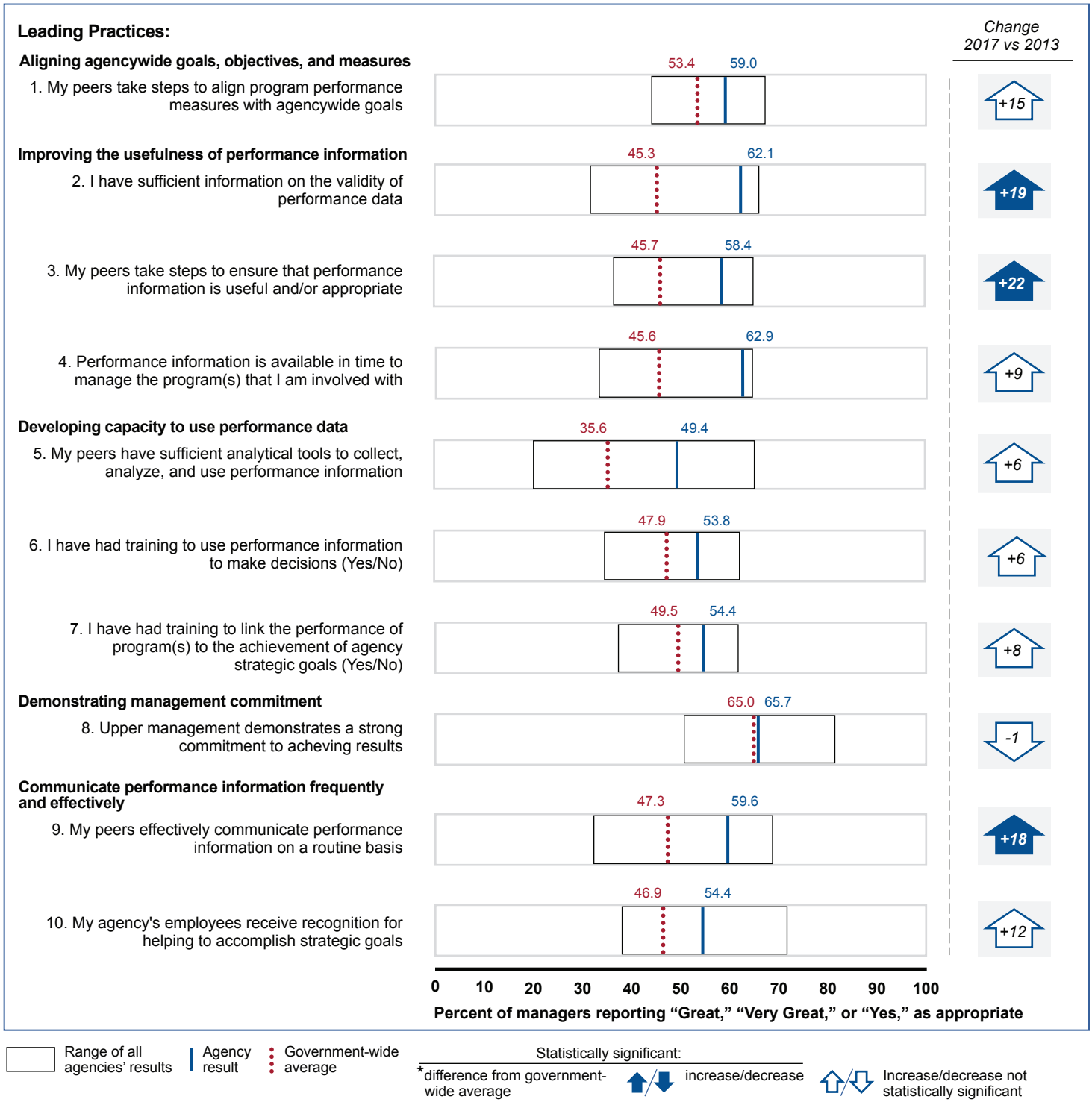
Statistically significant:

*difference from government-wide average

increase/decrease

Increase/decrease not statistically significant

10 Questions Related to Leading Practices That Promote the Use of Performance Information

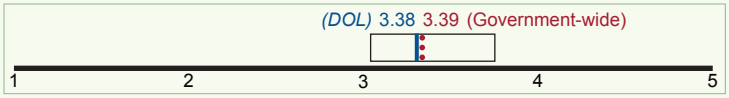


Department of Labor

Response Rate

68%

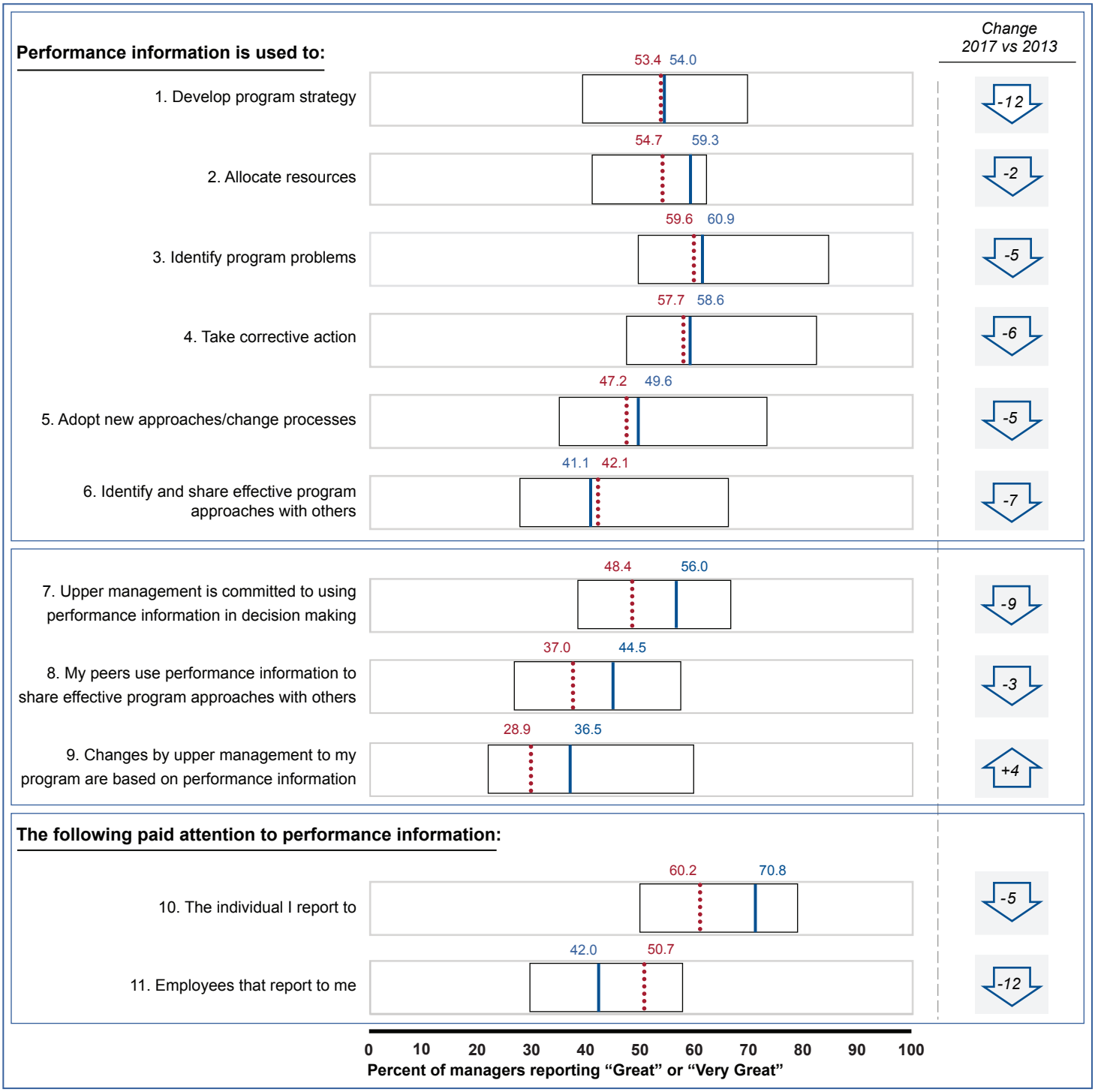
Use of Performance Information Index Results



Change 2017 vs 2013

-0.20

11 Questions that Comprise the Index



Range of all agencies' results | Agency result | Government-wide average

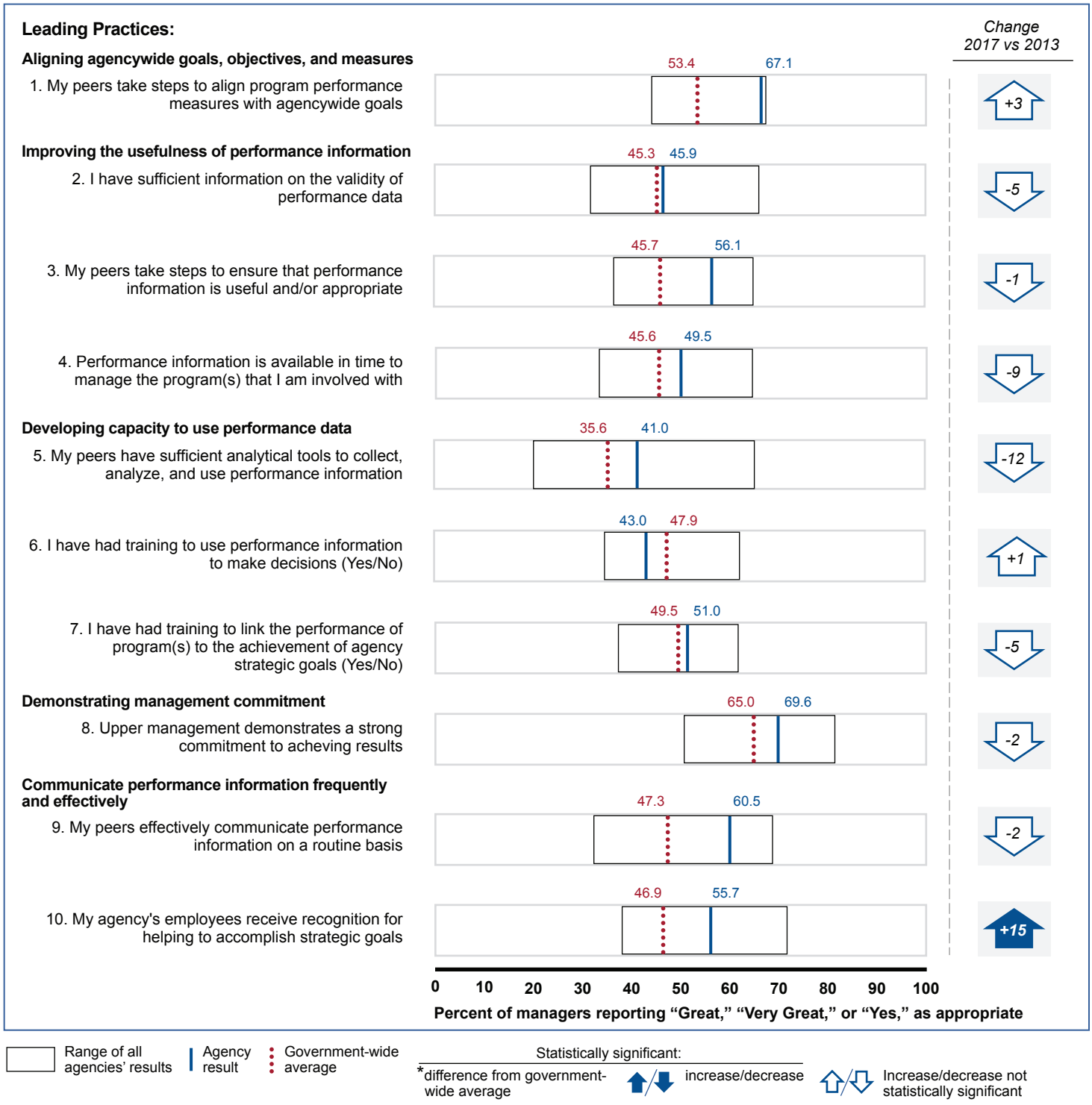
Statistically significant:

*difference from government-wide average

increase/decrease

Increase/decrease not statistically significant

10 Questions Related to Leading Practices That Promote the Use of Performance Information

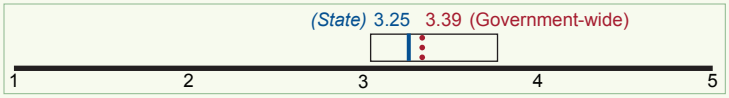


Department of State

Response Rate

70%

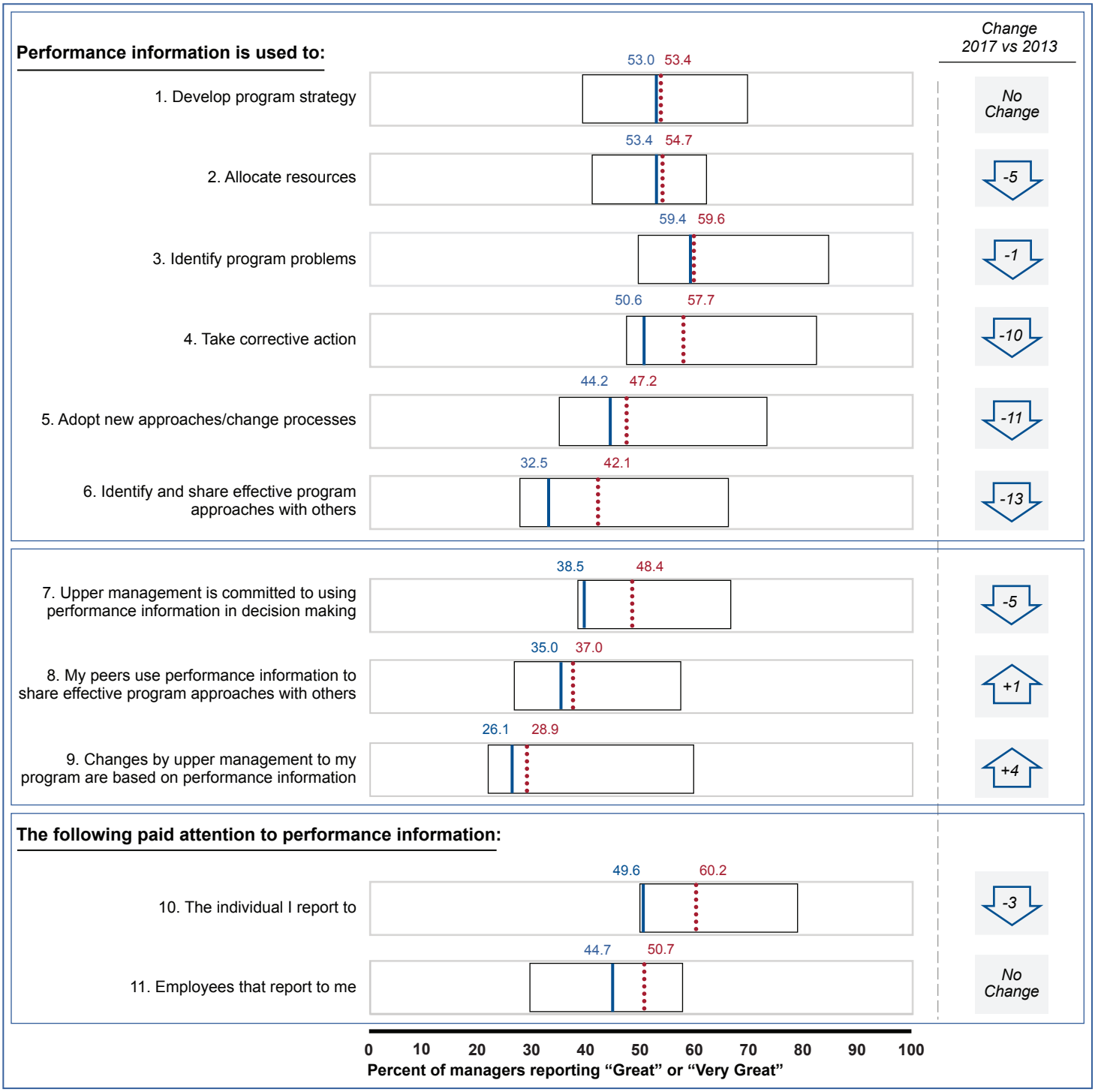
Use of Performance Information Index Results



Change 2017 vs 2013

-0.12

11 Questions that Comprise the Index



Range of all agencies' results | Agency result | Government-wide average

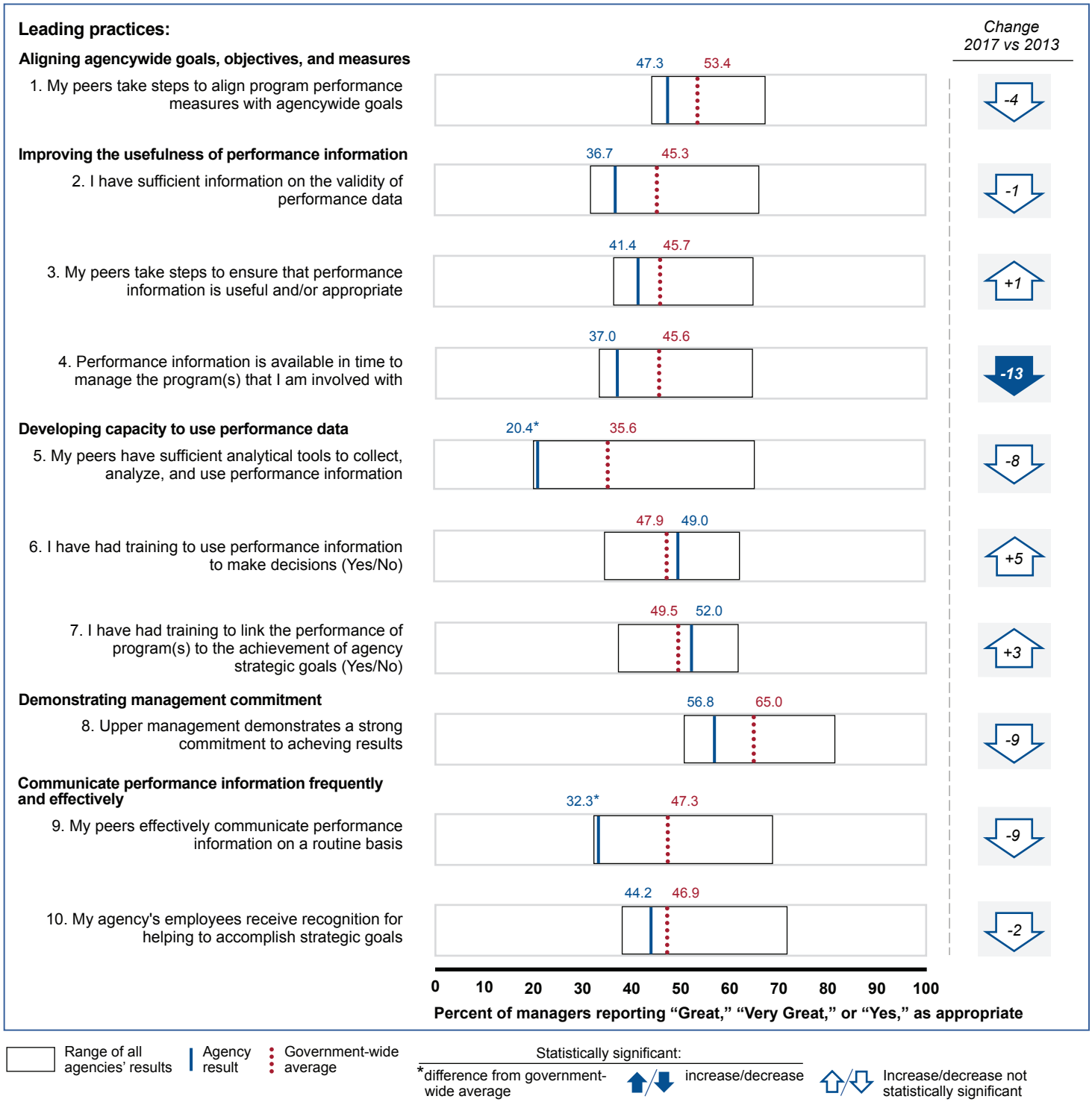
Statistically significant:

*difference from government-wide average

increase/decrease

Increase/decrease not statistically significant

10 Questions Related to Leading Practices That Promote the Use of Performance Information

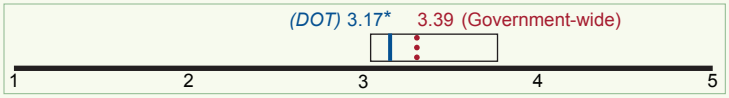


Department of Transportation

Response Rate

67%

Use of Performance Information Index Results



Change 2017 vs 2013

-0.14

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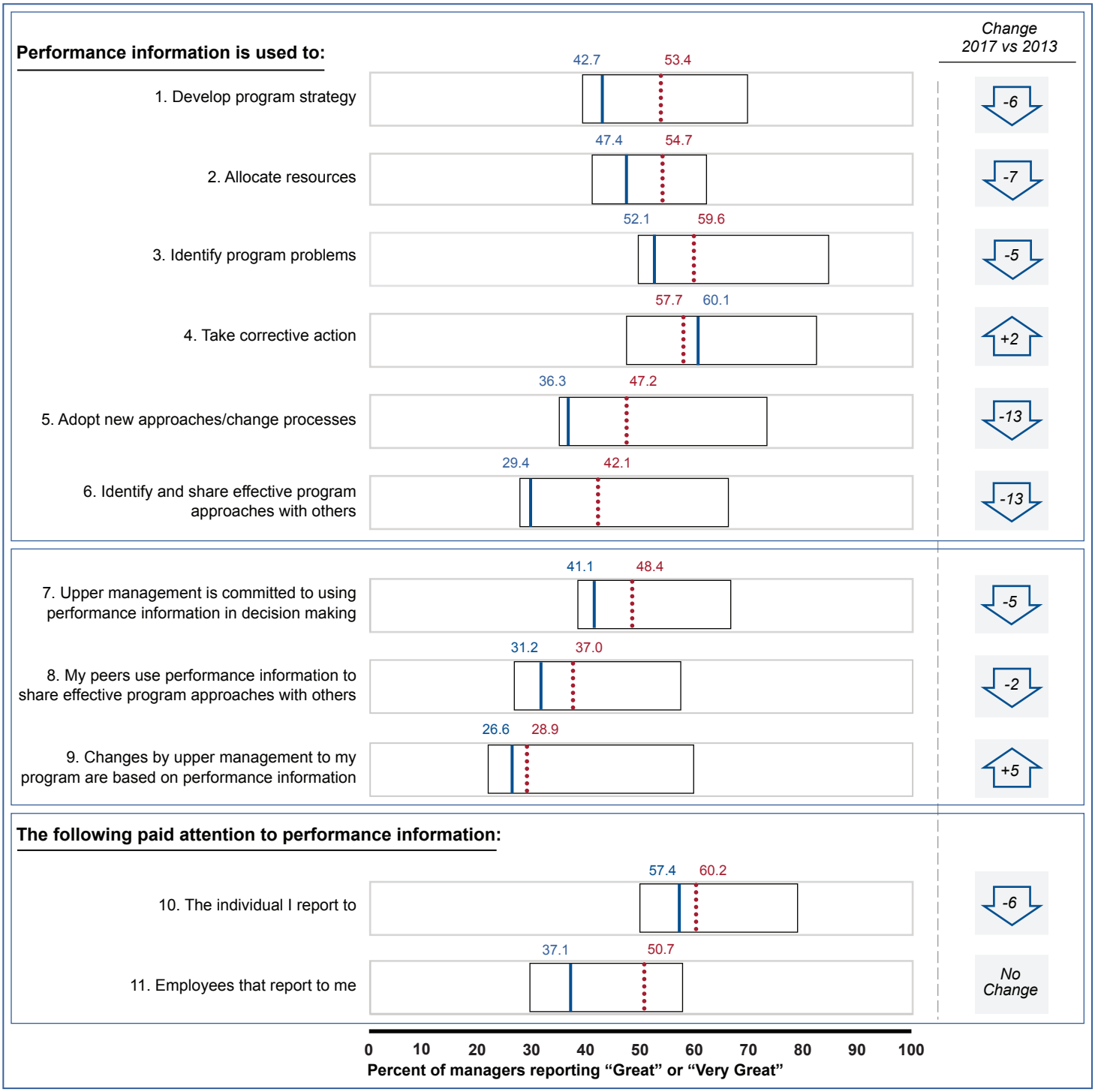


Range of all agencies' results | Agency result | Government-wide average

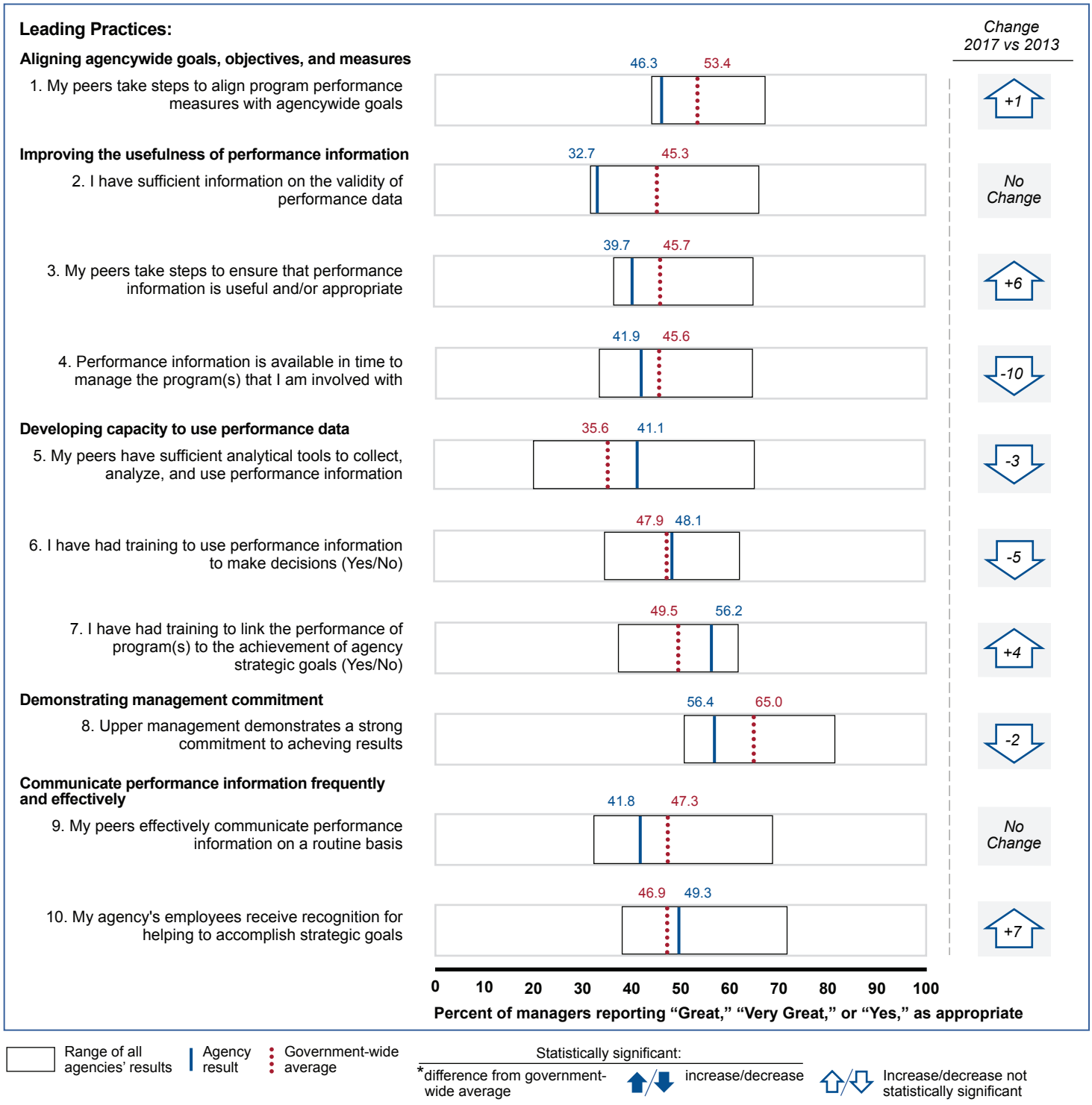
Statistically significant:

*difference from government-wide average

increase/decrease

Increase/decrease not statistically significant

10 Questions Related to Leading Practices That Promote the Use of Performance Information

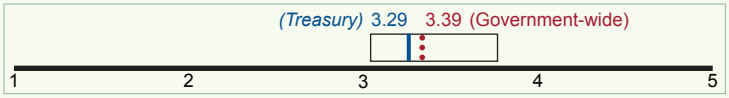


Department of the Treasury

Response Rate

74%

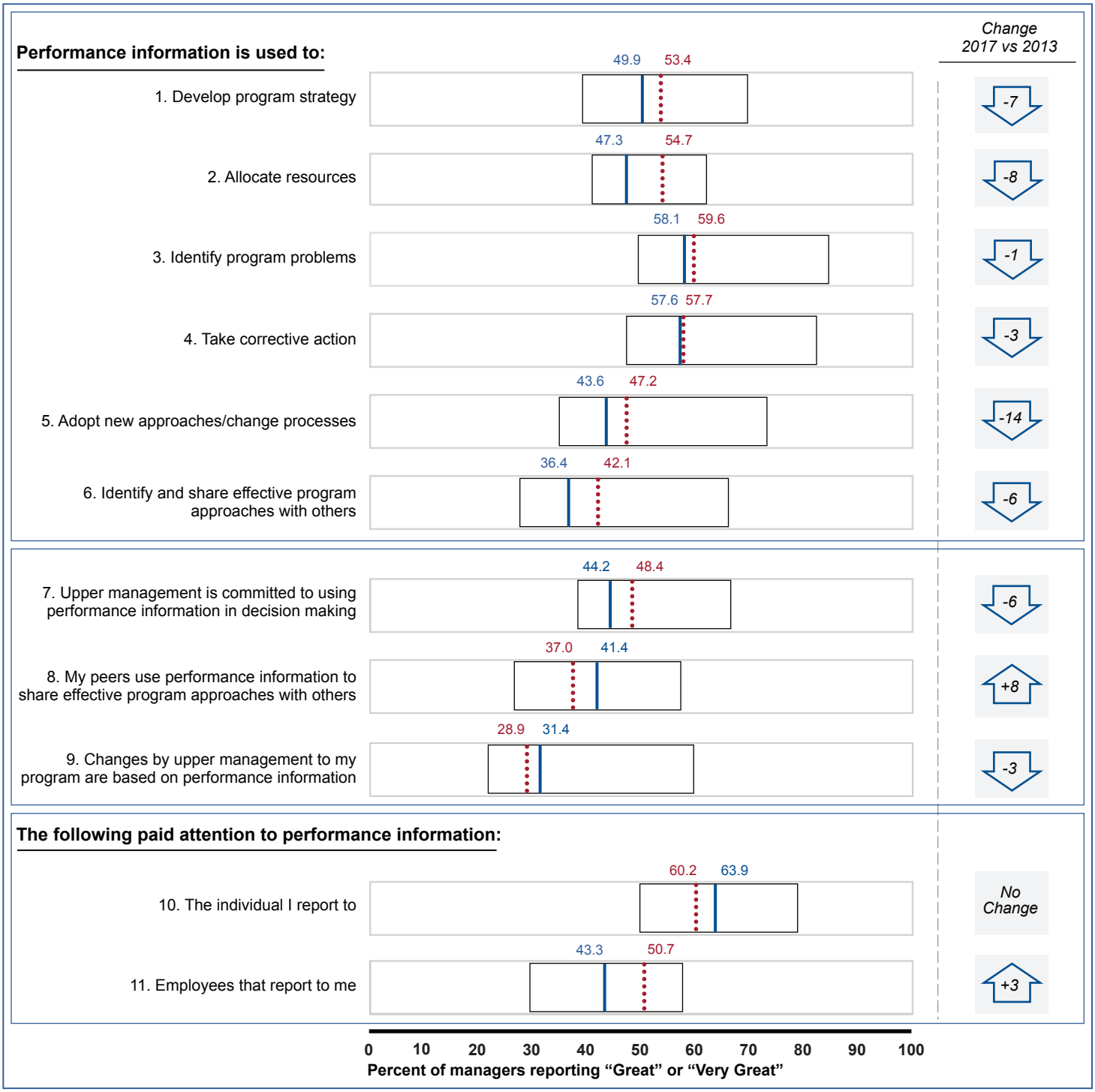
Use of Performance Information Index Results



Change 2017 vs 2013

-0.11

11 Questions that Comprise the Index



Range of all agencies' results | Agency result | Government-wide average

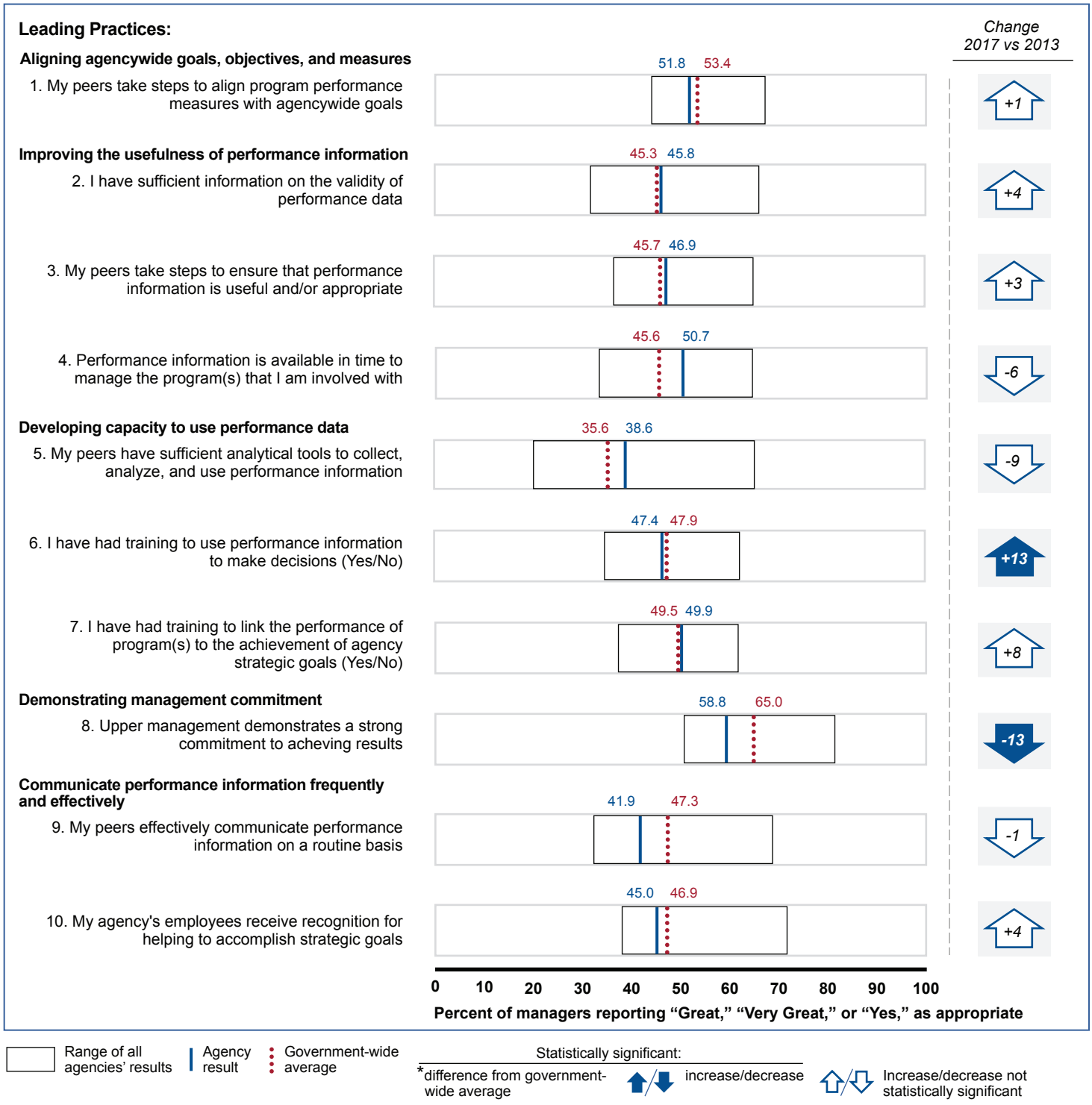
Statistically significant:

*difference from government-wide average

increase/decrease

Increase/decrease not statistically significant

10 Questions Related to Leading Practices That Promote the Use of Performance Information

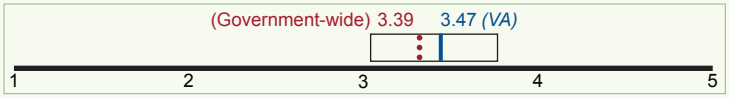


Department of Veterans Affairs

Response Rate

64%

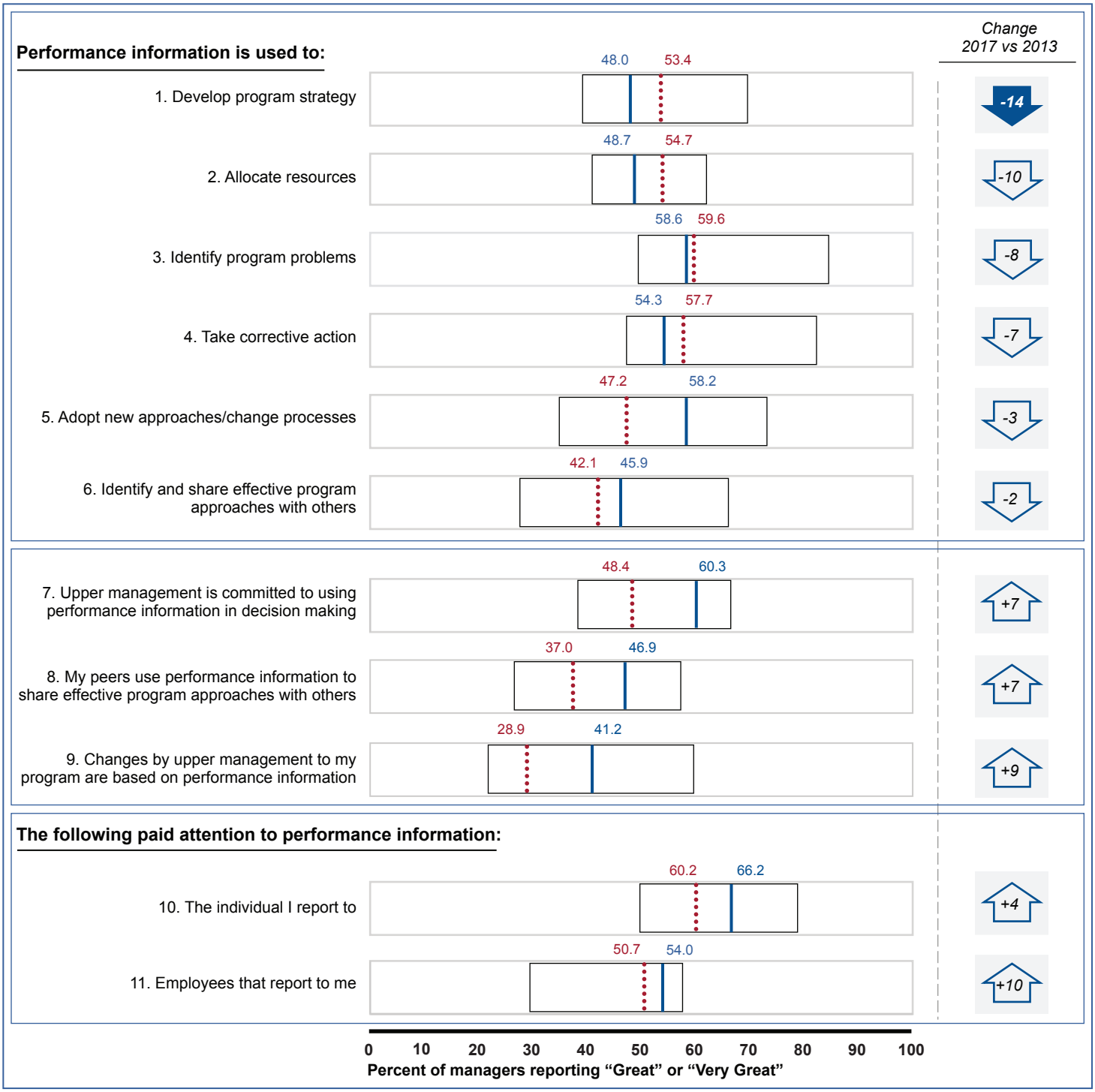
Use of Performance Information Index Results



Change 2017 vs 2013

-0.03

11 Questions that Comprise the Index



Range of all agencies' results | Agency result | Government-wide average

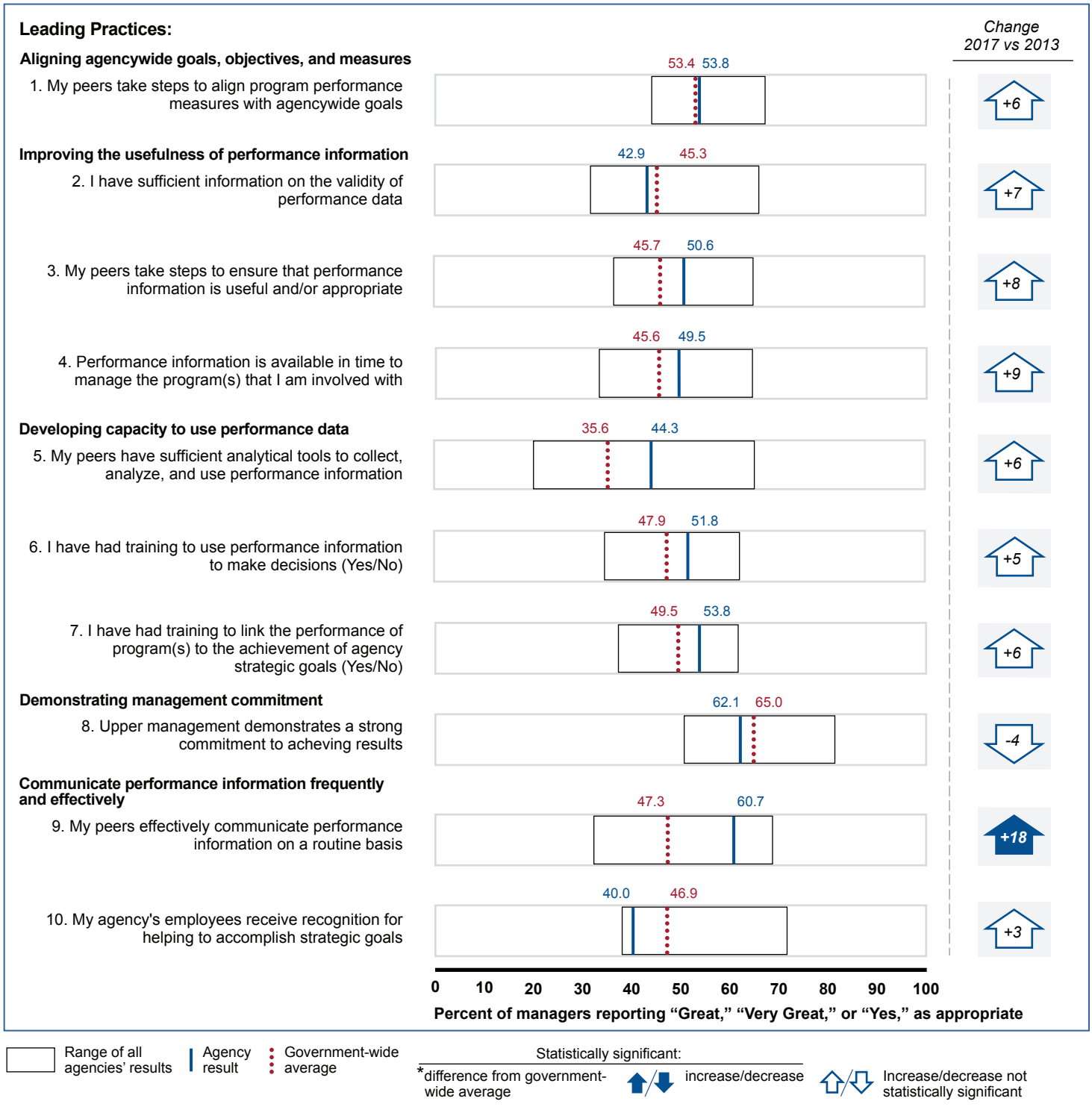
Statistically significant:

*difference from government-wide average

increase/decrease

Increase/decrease not statistically significant

10 Questions Related to Leading Practices That Promote the Use of Performance Information

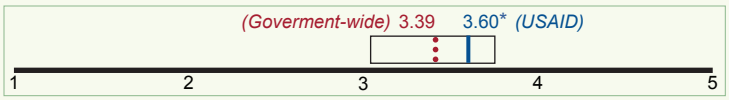


U.S. Agency for International Development

Response Rate

74%

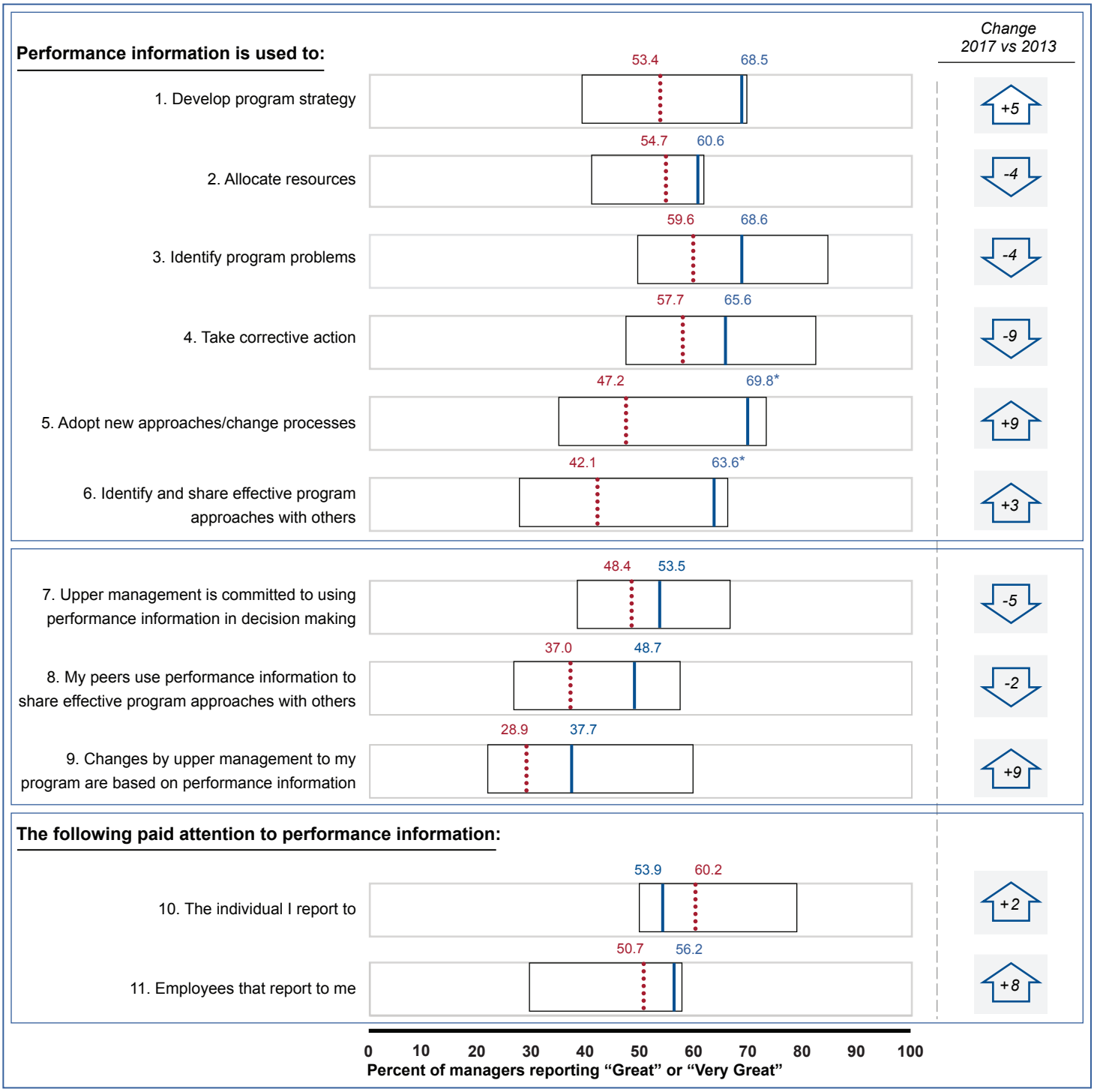
Use of Performance Information Index Results



Change 2017 vs 2013

+0.07

11 Questions that Comprise the Index



Range of all agencies' results | Agency result | Government-wide average

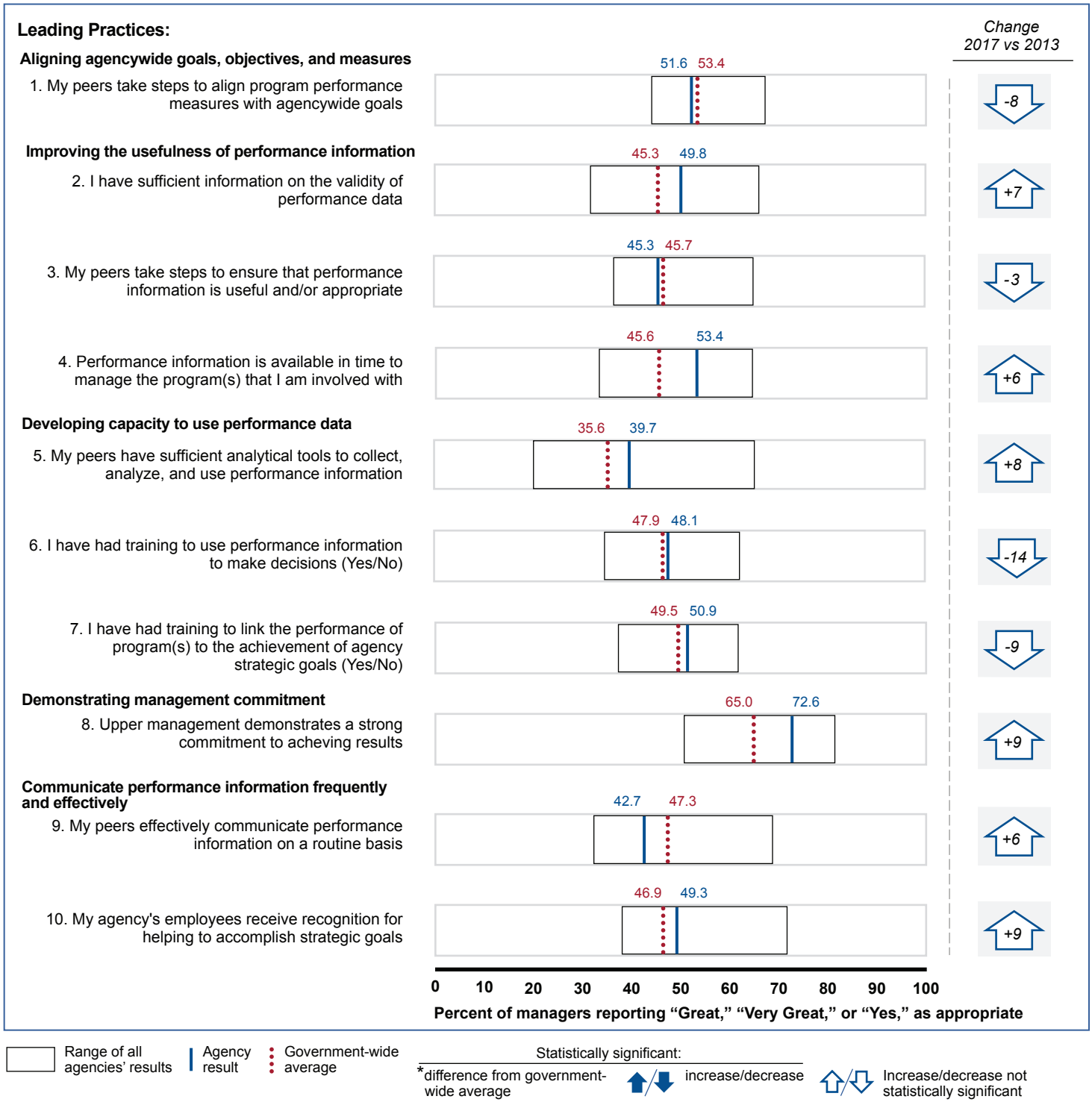
Statistically significant:

*difference from government-wide average

increase/decrease

Increase/decrease not statistically significant

10 Questions Related to Leading Practices That Promote the Use of Performance Information

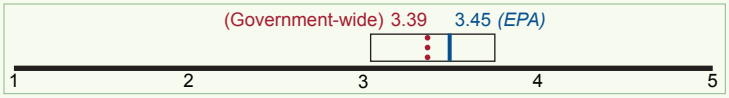


Environmental Protection Agency

Response Rate

78%

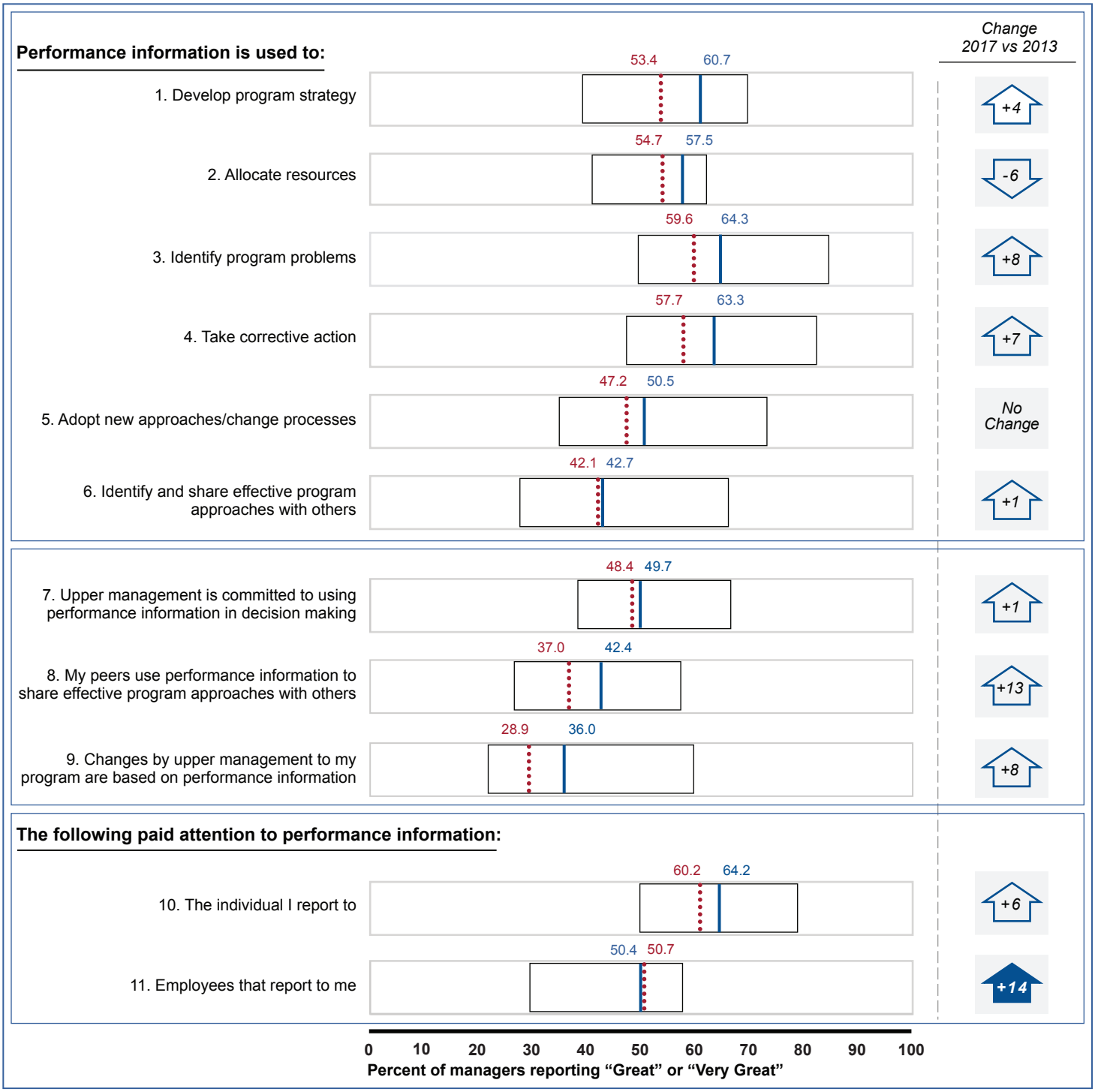
Use of Performance Information Index Results



Change 2017 vs 2013

+0.03

11 Questions that Comprise the Index



Range of all agencies' results | Agency result | Government-wide average

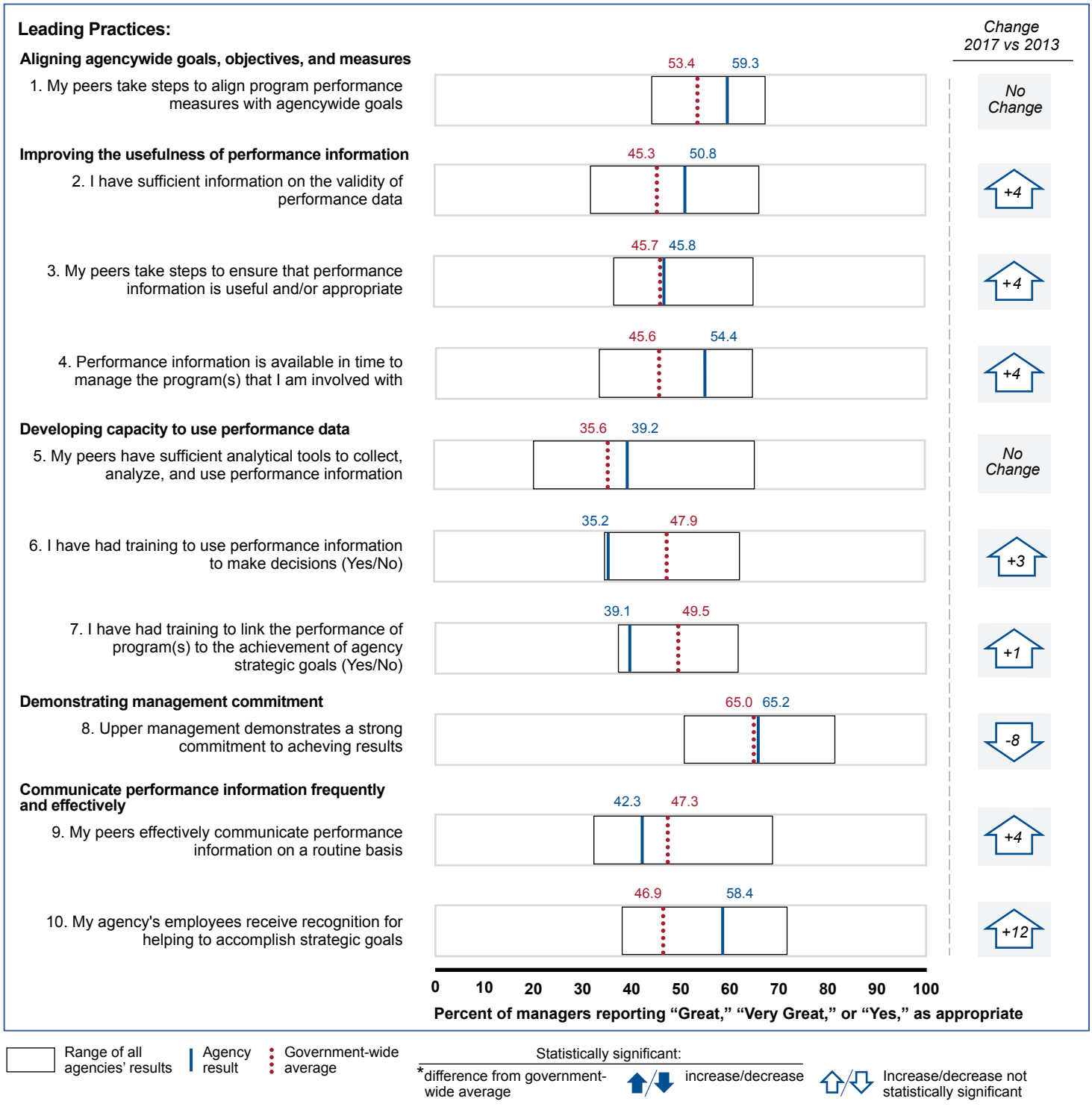
Statistically significant:

*difference from government-wide average

increase/decrease

Increase/decrease not statistically significant

10 Questions Related to Leading Practices That Promote the Use of Performance Information

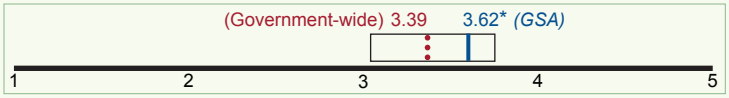


General Services Administration

Response Rate

70%

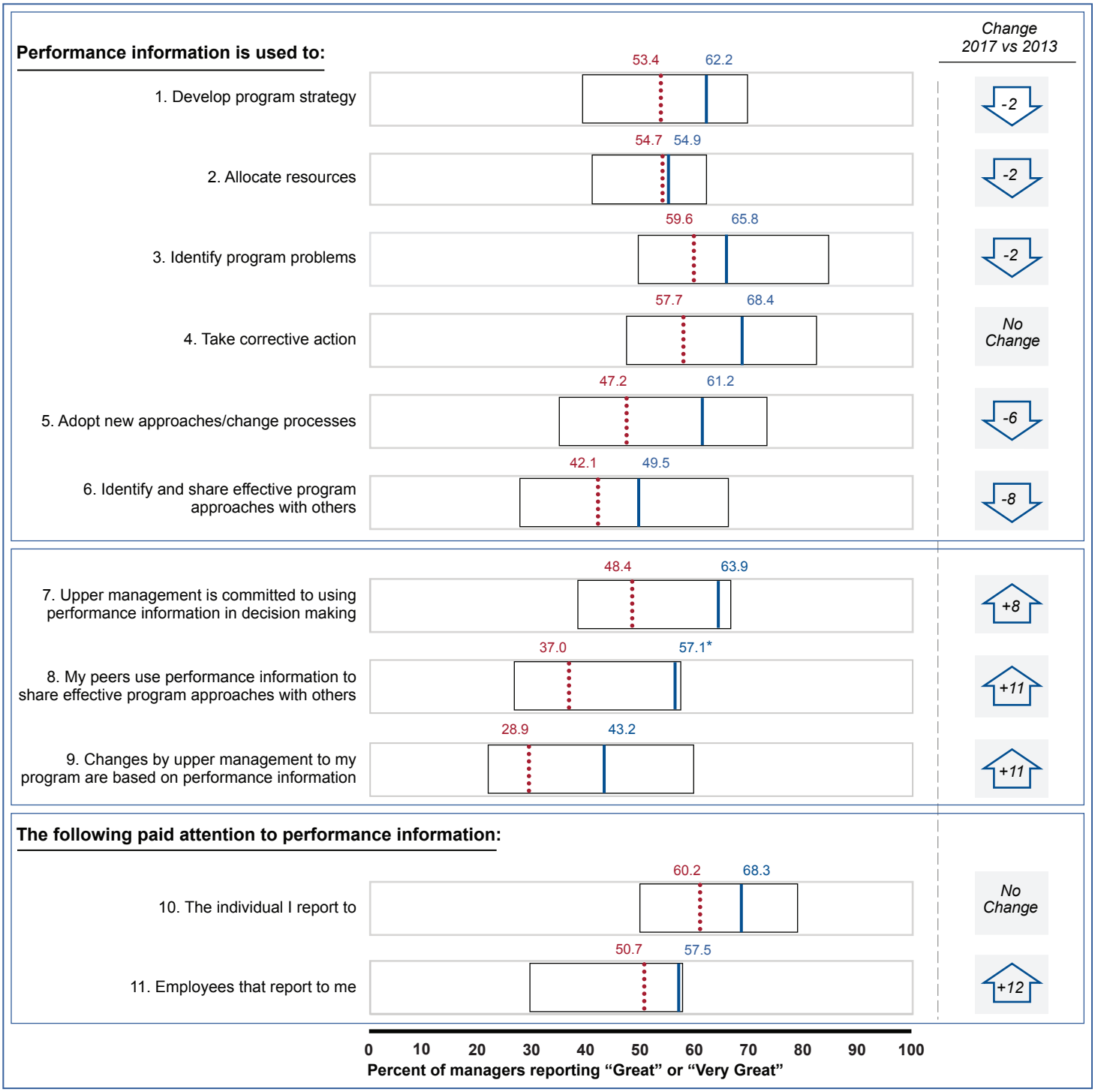
Use of Performance Information Index Results



Change 2017 vs 2013

+0.08

11 Questions that Comprise the Index



Range of all agencies' results | Agency result | Government-wide average

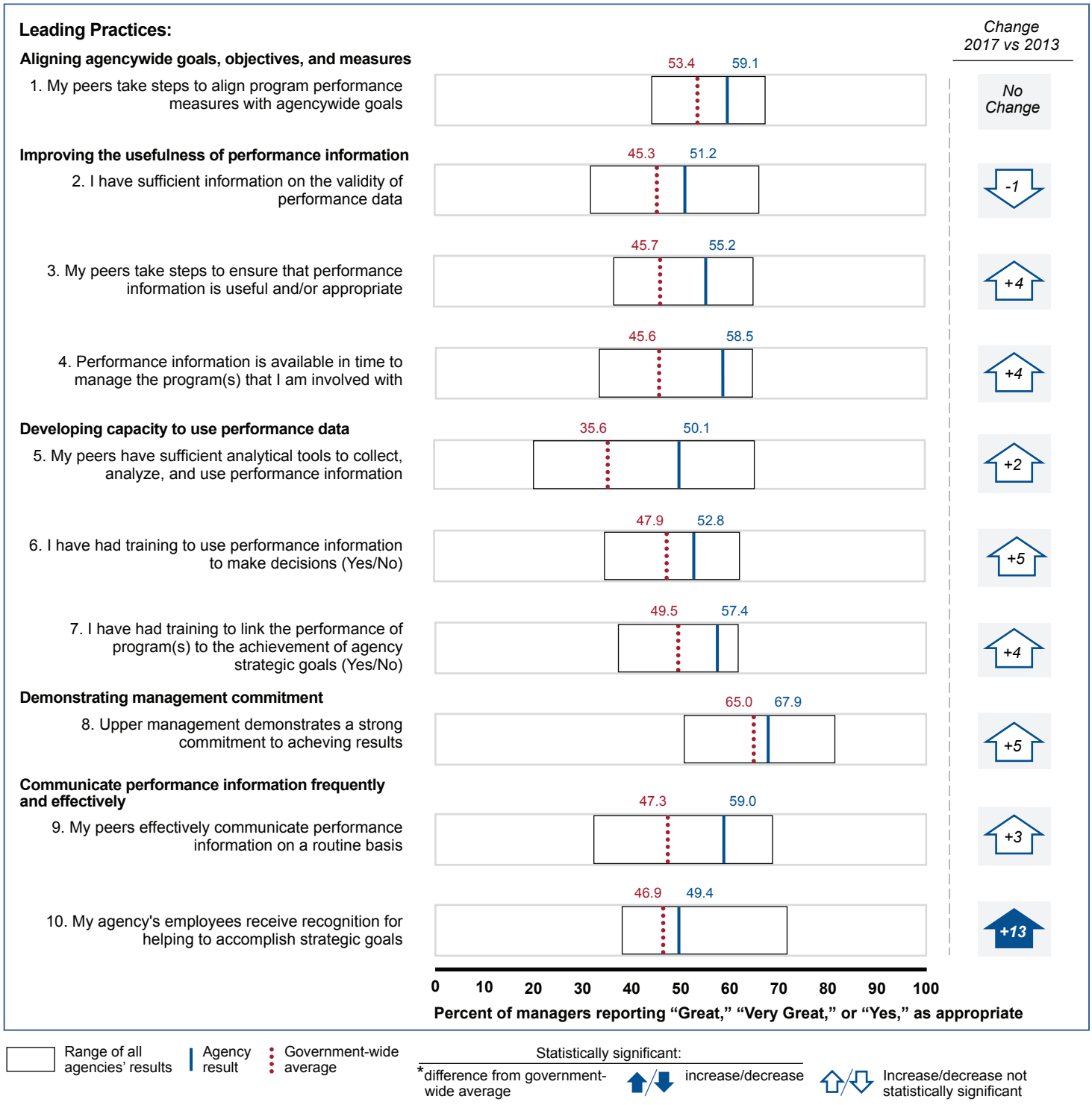
Statistically significant:

*difference from government-wide average

increase/decrease

Increase/decrease not statistically significant

10 Questions Related to Leading Practices That Promote the Use of Performance Information

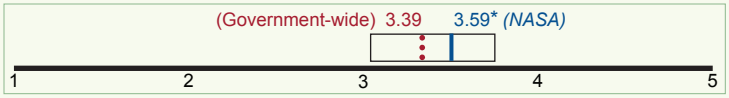


National Aeronautics and Space Administration

Response Rate

67%

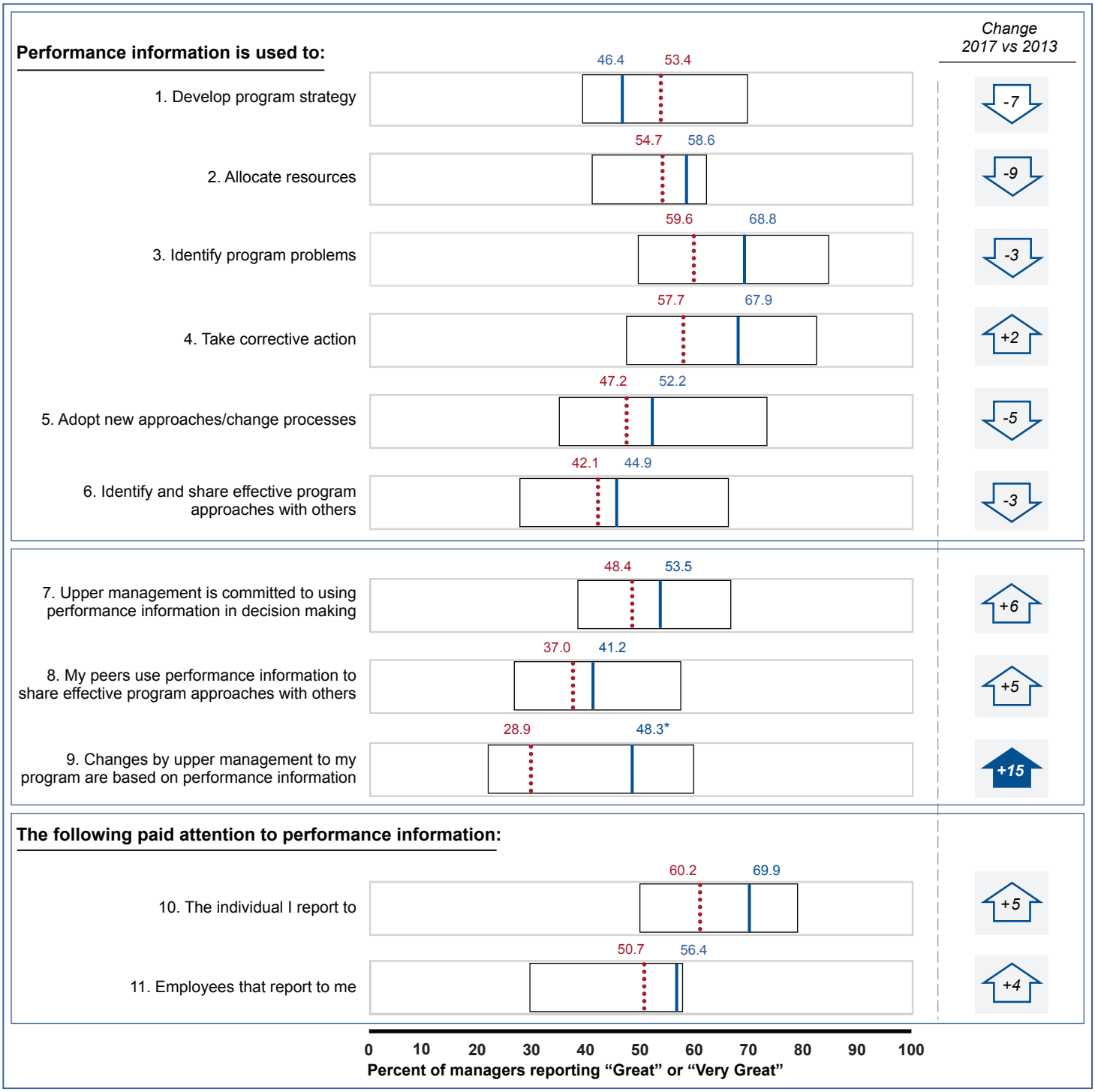
Use of Performance Information Index Results



Change 2017 vs 2013

+0.10

11 Questions that Comprise the Index



Range of all agencies' results | Agency result | Government-wide average

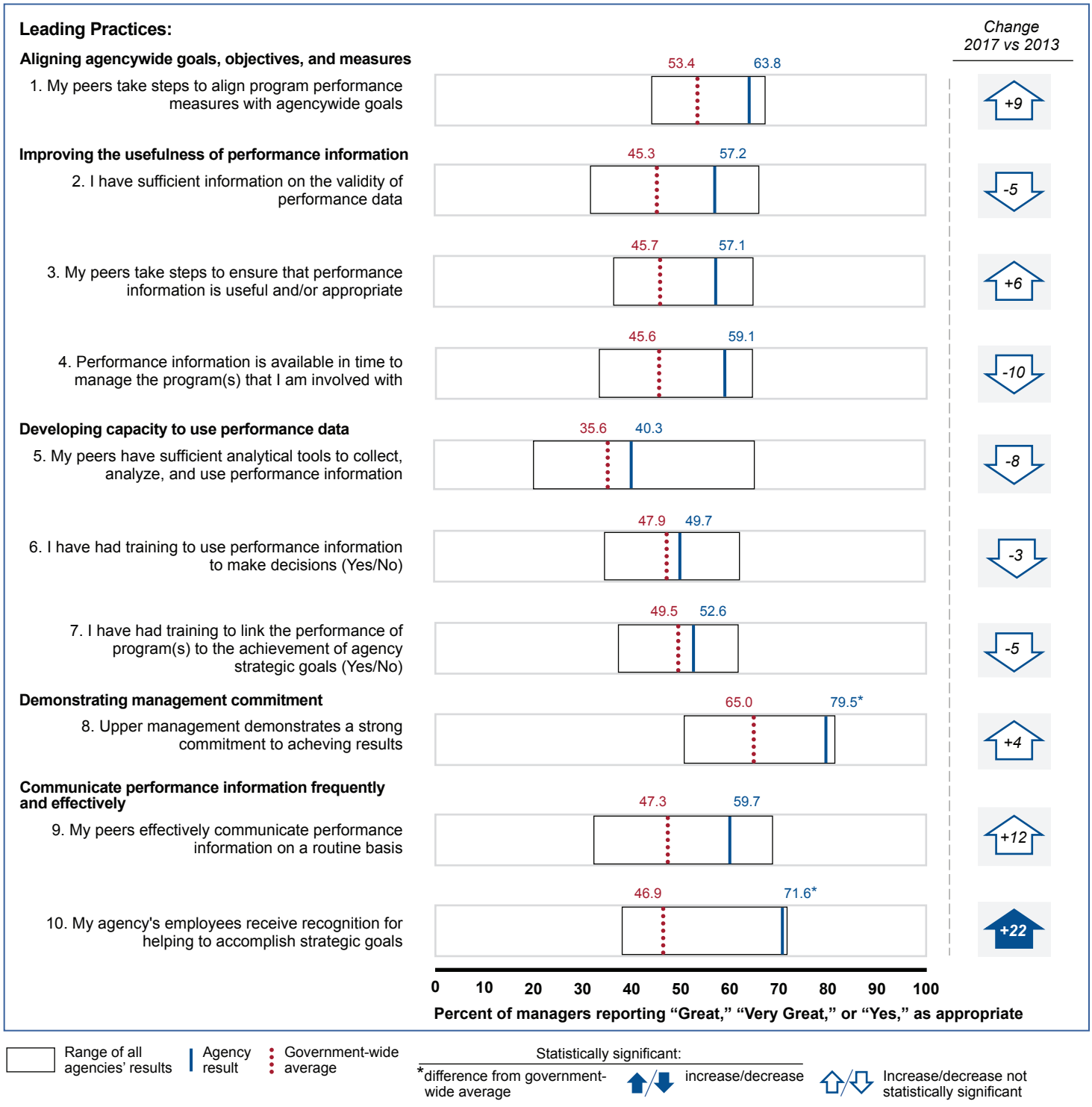
Statistically significant:

*difference from government-wide average

increase/decrease

Increase/decrease not statistically significant

10 Questions Related to Leading Practices That Promote the Use of Performance Information

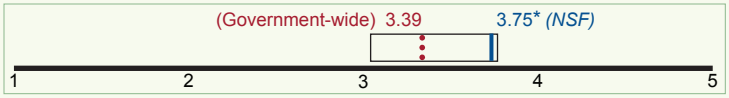


National Science Foundation

Response Rate

68%

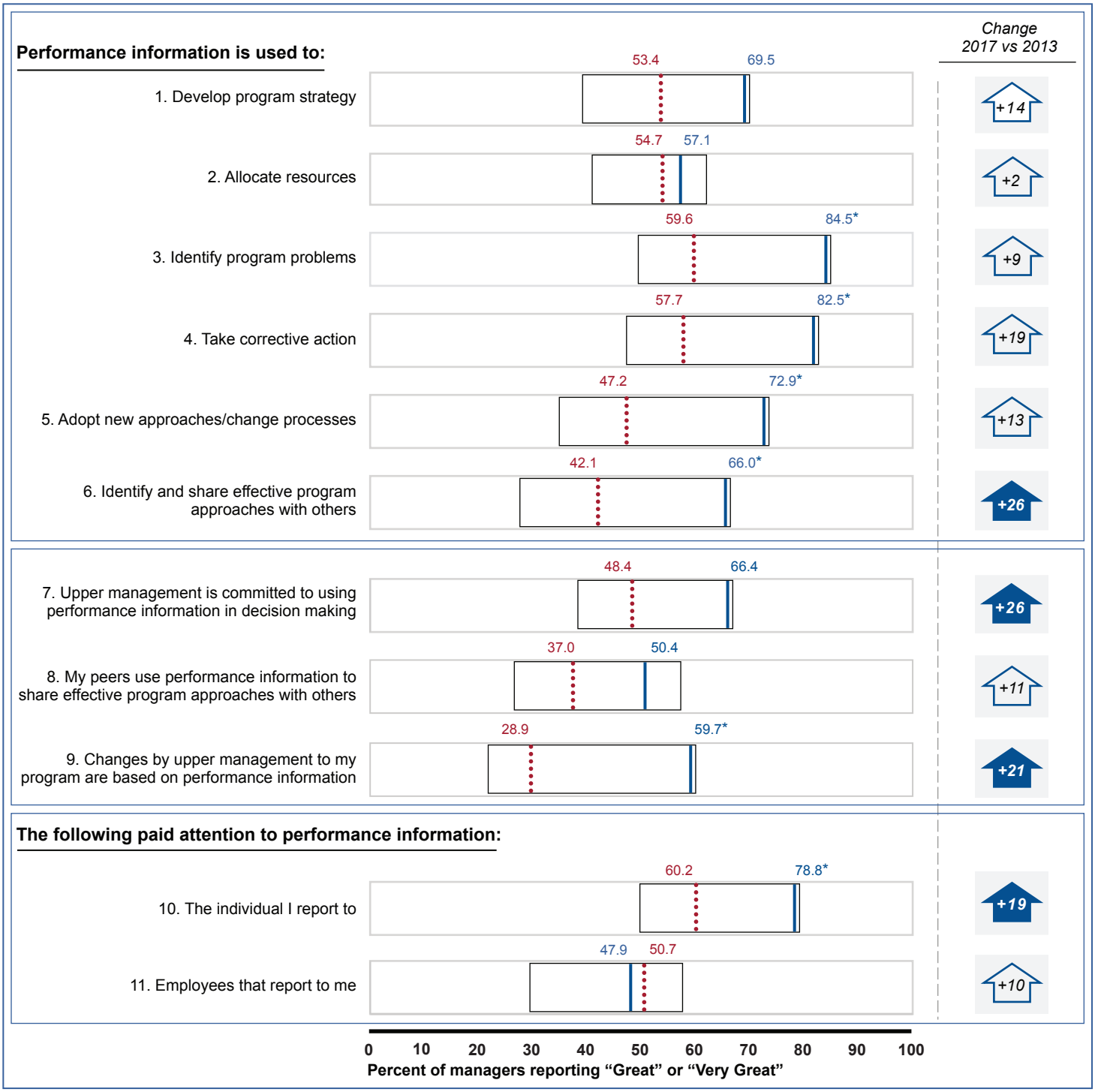
Use of Performance Information Index Results



Change 2017 vs 2013

+0.38

11 Questions that Comprise the Index



Range of all agencies' results | Agency result | Government-wide average

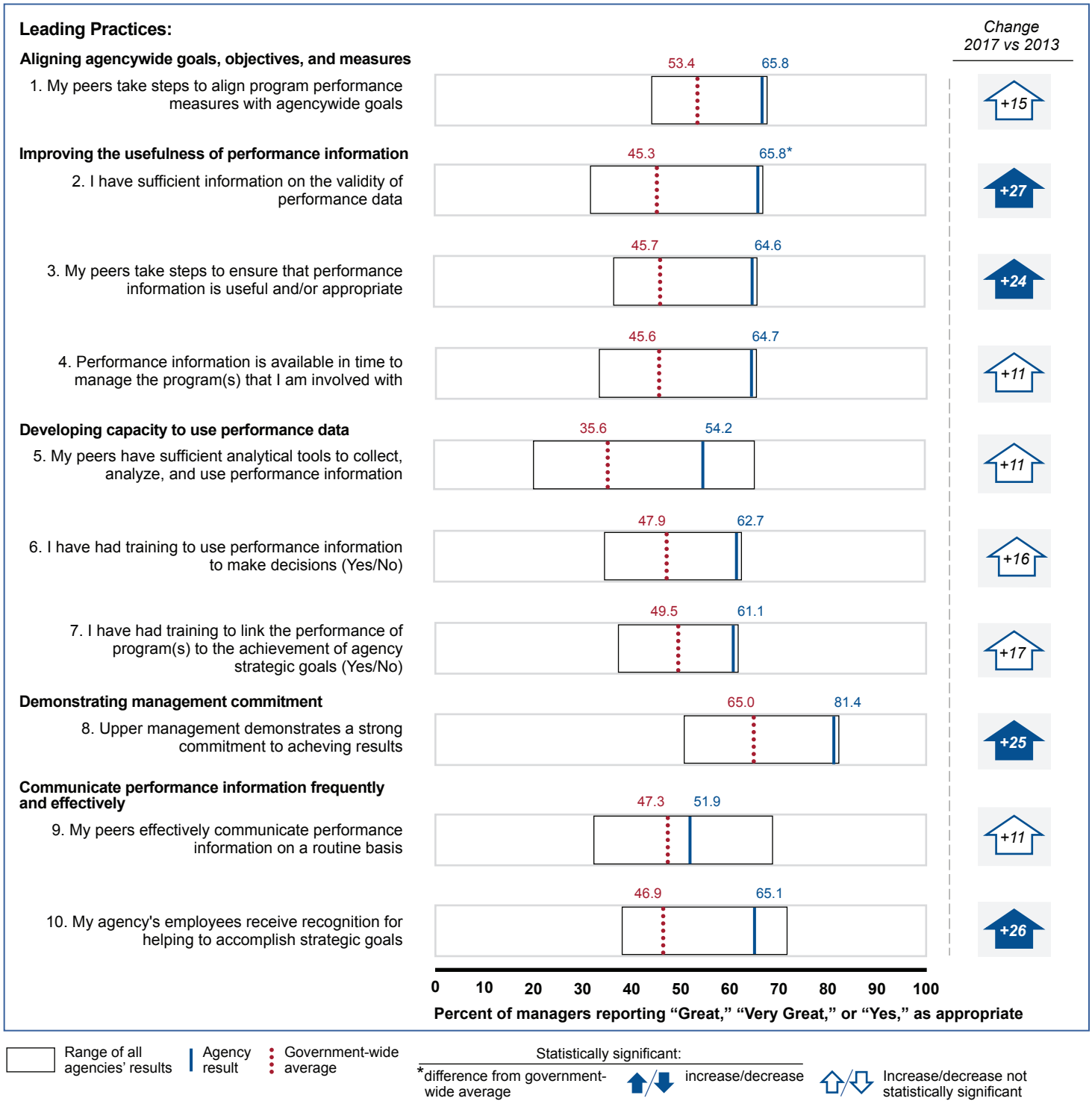
Statistically significant:

*difference from government-wide average

increase/decrease

Increase/decrease not statistically significant

10 Questions Related to Leading Practices That Promote the Use of Performance Information

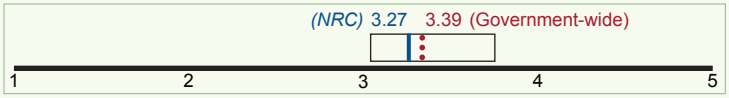


Nuclear Regulatory Commission

Response Rate

82%

Use of Performance Information Index Results



Change 2017 vs 2013

-0.05

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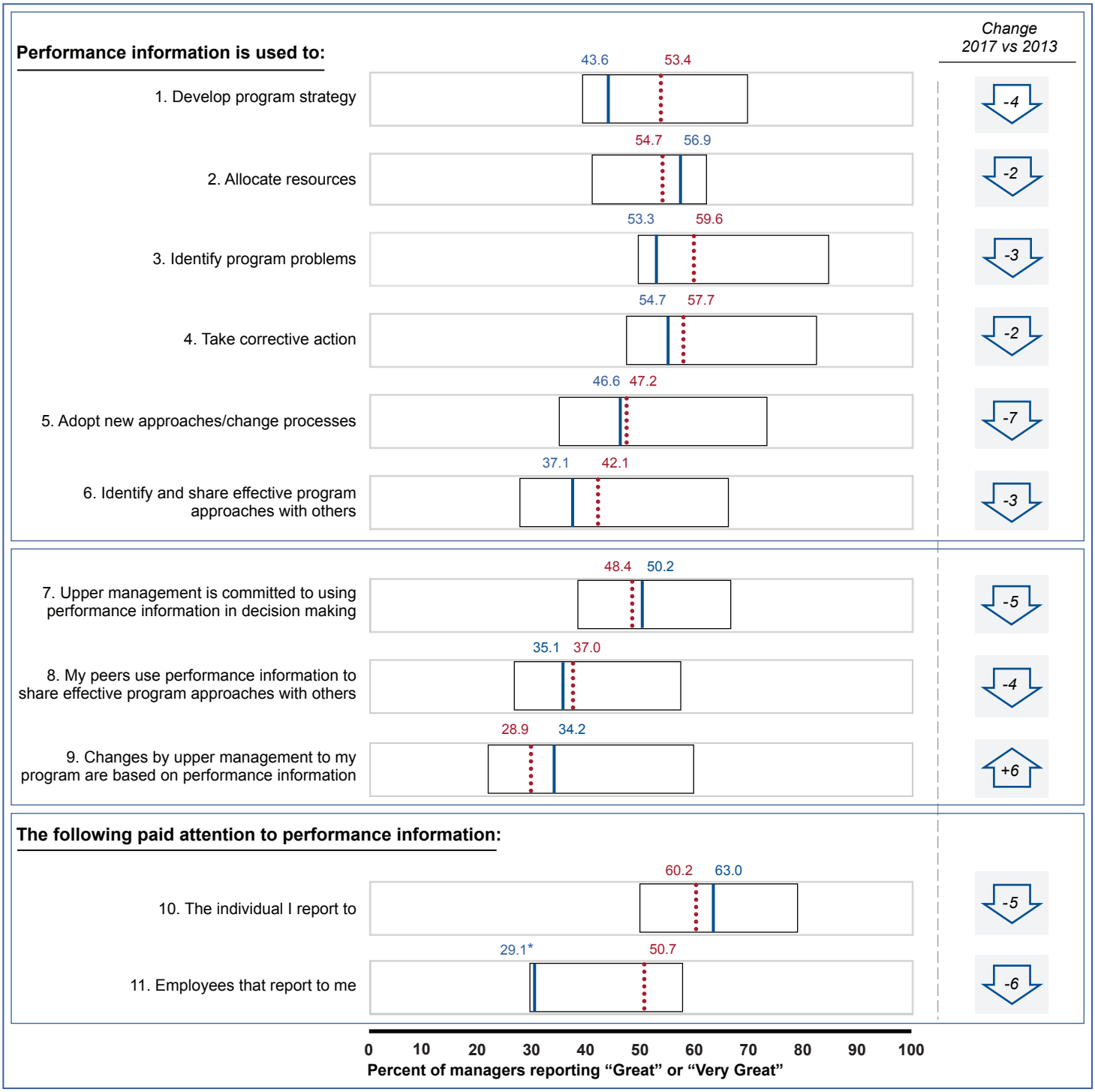


Range of all agencies' results | Agency result | Government-wide average

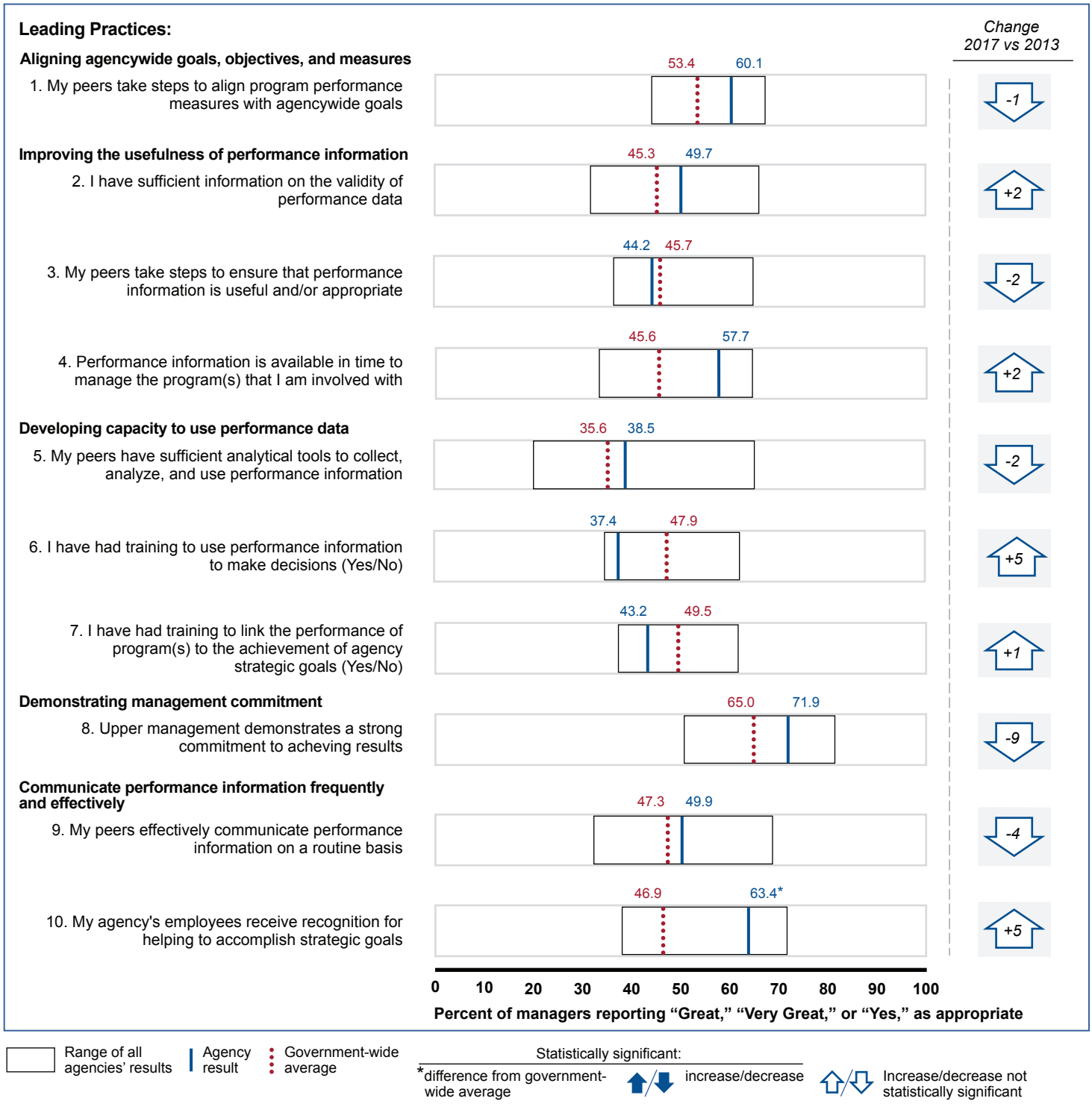
Statistically significant:

*difference from government-wide average

increase/decrease

Increase/decrease not statistically significant

10 Questions Related to Leading Practices That Promote the Use of Performance Information

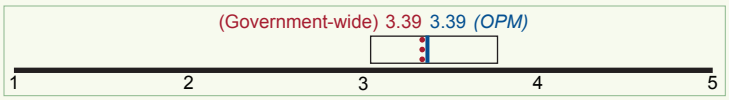


Office of Personnel Management

Response Rate

64%

Use of Performance Information Index Results



Change 2017 vs 2013

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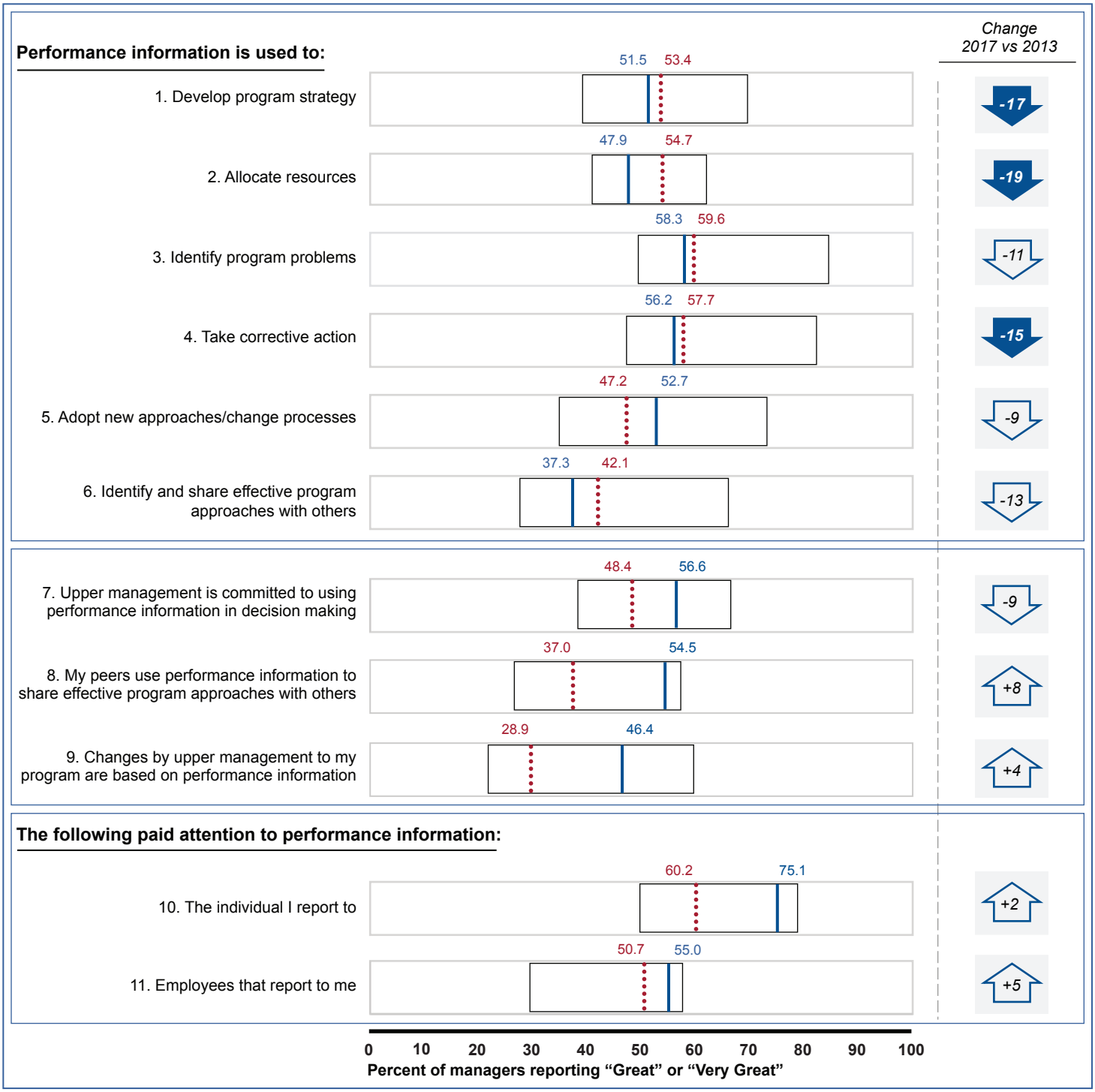
11 Questions that Comprise the Index



Range of all agencies' results | Agency result | Government-wide average

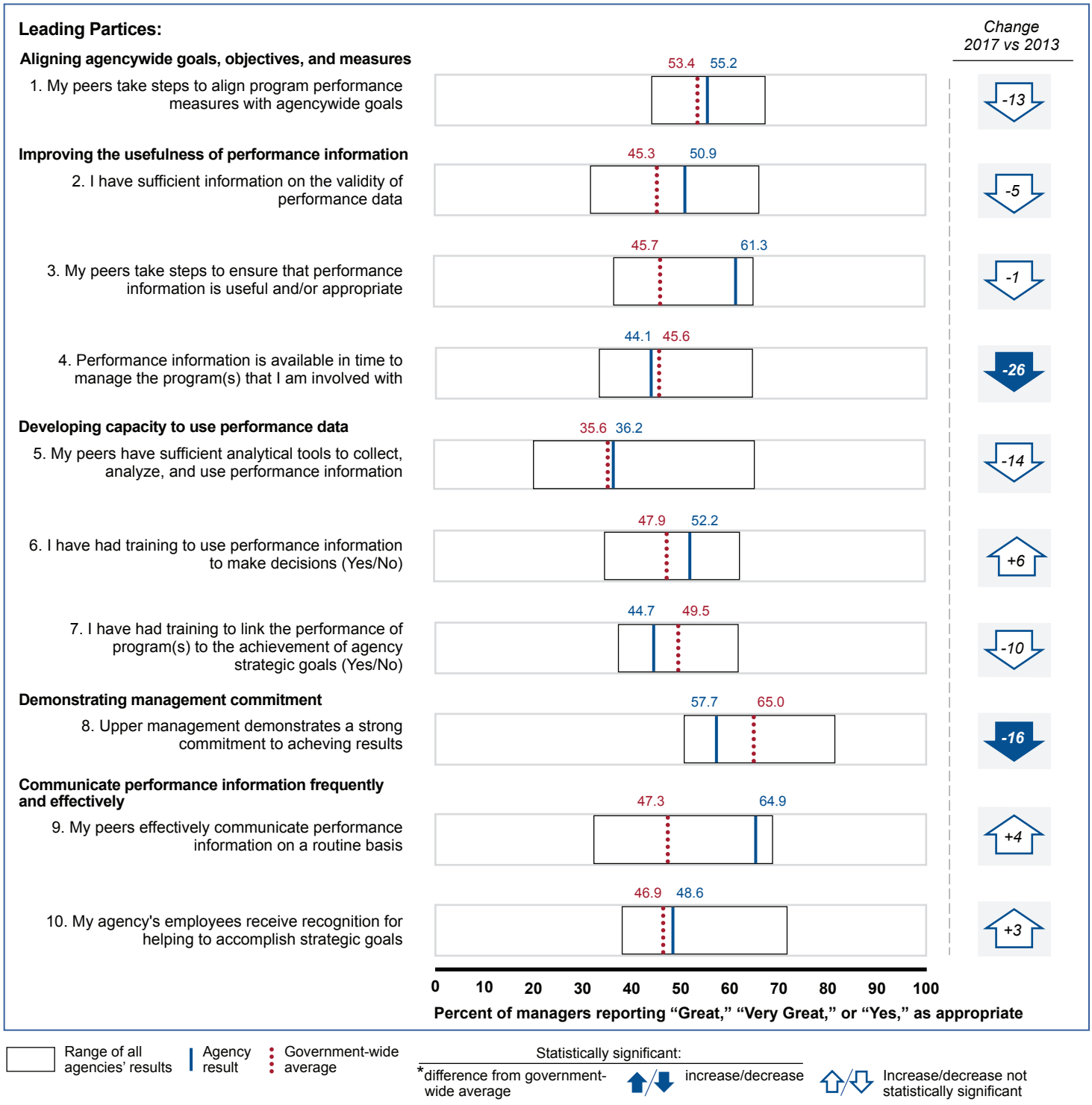
Statistically significant:

*difference from government-wide average

increase/decrease

Increase/decrease not statistically significant

10 Questions Related to Leading Practices That Promote the Use of Performance Information

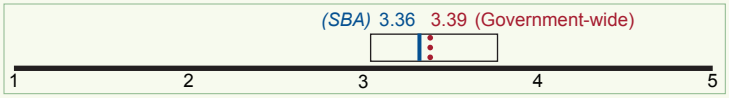


Small Business Administration

Response Rate

70%

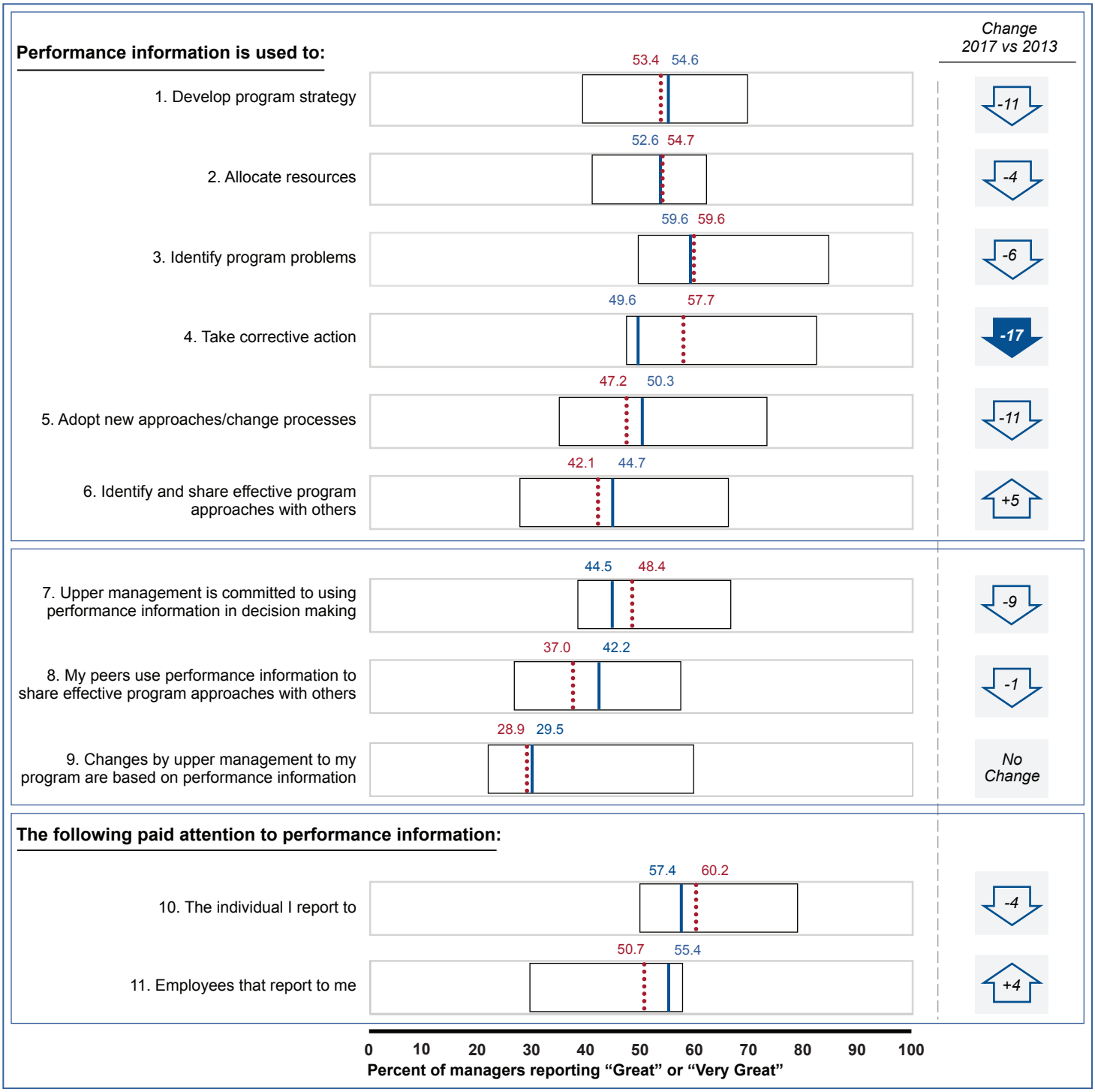
Use of Performance Information Index Results



Change 2017 vs 2013

-0.10

11 Questions that Comprise the Index



Range of all agencies' results | Agency result | Government-wide average

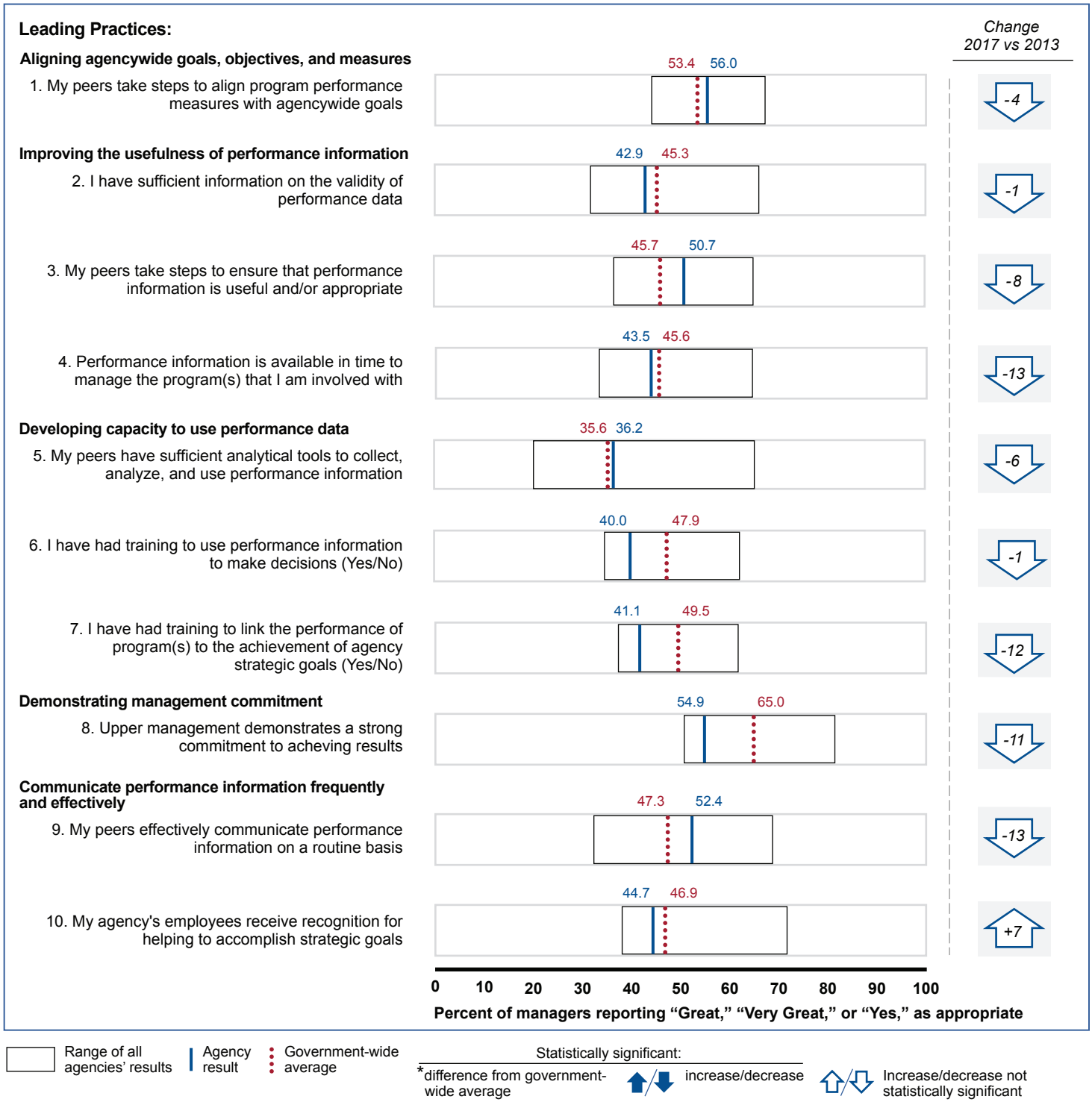
Statistically significant:

*difference from government-wide average

increase/decrease

Increase/decrease not statistically significant

10 Questions Related to Leading Practices That Promote the Use of Performance Information

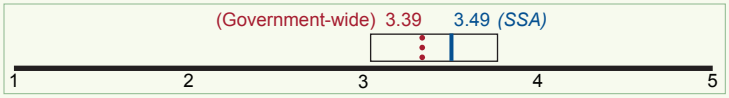


Social Security Administration

Response Rate

80%

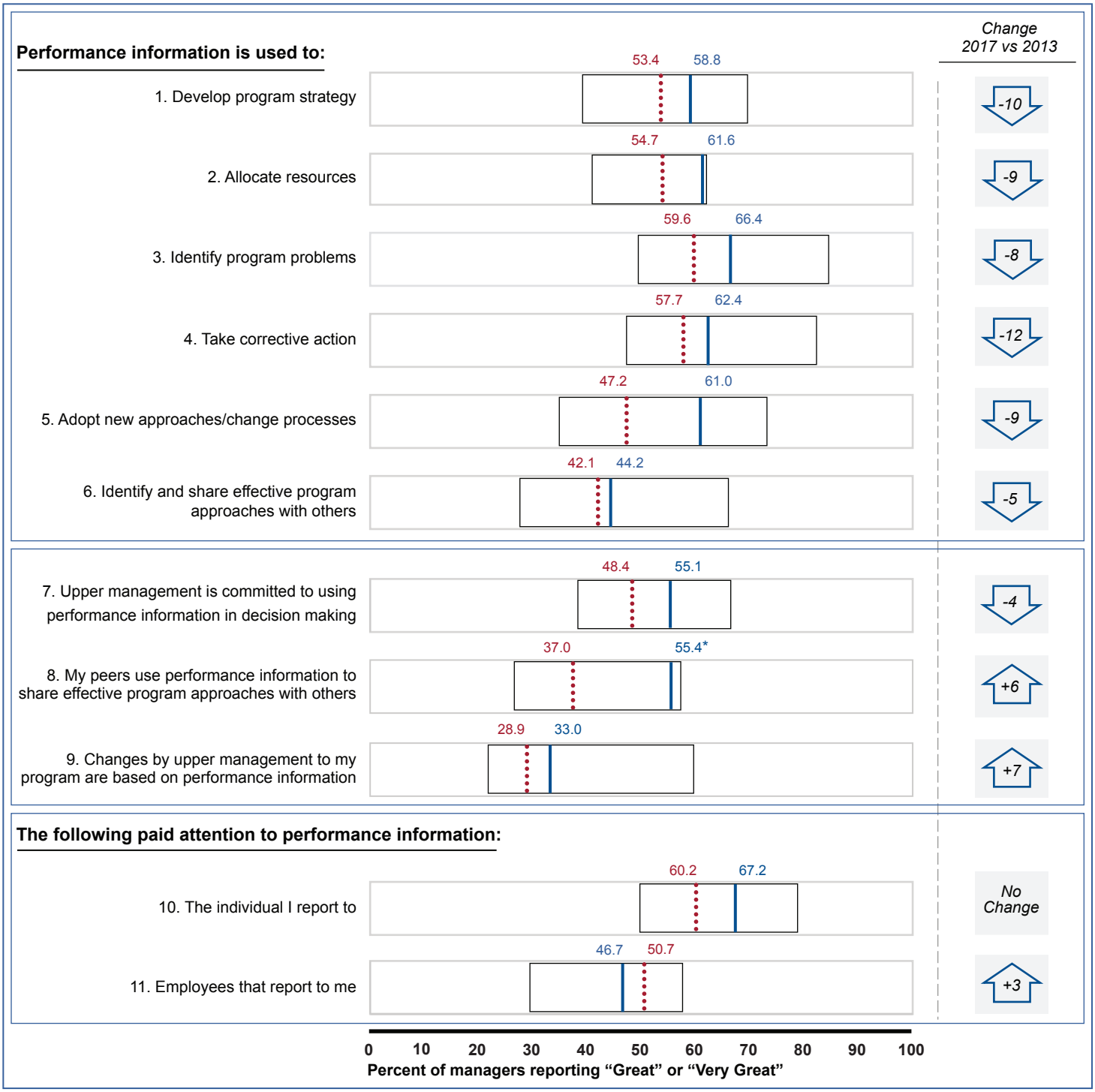
Use of Performance Information Index Results



Change 2017 vs 2013

-0.17

11 Questions that Comprise the Index



Range of all agencies' results | Agency result | Government-wide average

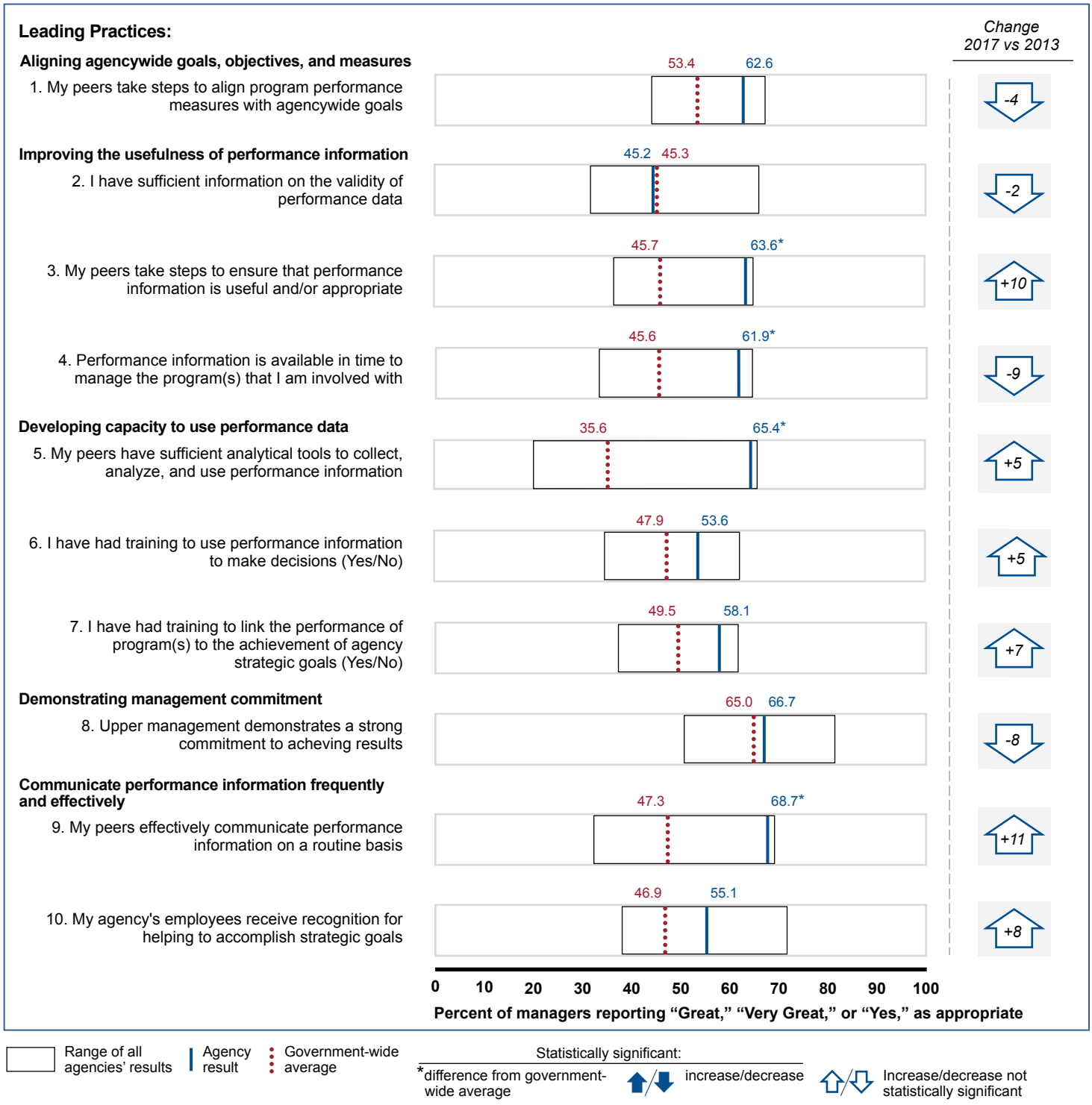
Statistically significant:

*difference from government-wide average

increase/decrease

Increase/decrease not statistically significant

10 Questions Related to Leading Practices That Promote the Use of Performance Information



Appendix II: Objectives, Scope, and Methodology

This report responds to a request that we analyze agency-level results from our 2017 survey of federal managers at the 24 agencies covered by the Chief Financial Officers (CFO) Act of 1990, as amended, to determine the extent agencies are using performance information.[1] This report assesses the extent to which:

1. the reported use of performance information and related leading practices at 24 agencies has changed compared to our prior survey in 2013;
2. being subject to data-driven reviews related to managers' reported use of performance information and leading practices; and
3. the Executive Branch has taken actions to enhance agencies' use of performance information in various decision-making activities.

From November 2016 through March 2017, we administered our online survey to a stratified random sample of 4,395 individuals from a population of 153,779 mid- and upper-level civilian managers and supervisors at the 24 CFO Act agencies. The management levels covered general schedule (GS) or equivalent schedules at levels comparable to GS-13 through GS-15, and career Senior Executive Service (SES) or equivalent. We obtained the sample from the Office of Personnel Management's Enterprise Human Resources Integration database as of September 30, 2015—the most recent fiscal year data available at the time. The sample was stratified by agency and whether the manager or supervisor was a member of the SES. To help determine the reliability and accuracy of the database elements used to draw our sample of federal managers for the 2017 survey, we checked the data for reasonableness and the presence of any obvious or potential errors in accuracy and completeness and reviewed our past analyses of the reliability of this database. We concluded in our September 2017 report that the data used to draw our sample were sufficiently reliable for the

[1]31 U.S.C. § 901(b). The 24 CFO Act agencies are the U.S. Departments of Agriculture, Commerce, Defense, Education, Energy, Health and Human Services, Homeland Security, Housing and Urban Development, the Interior, Justice, Labor, State, Transportation, the Treasury, and Veterans Affairs, as well as the U.S. Agency for International Development, Environmental Protection Agency, General Services Administration, National Aeronautics and Space Administration, National Science Foundation, Nuclear Regulatory Commission, Office of Personnel Management, Small Business Administration, and Social Security Administration. See GAO-17-775 for more information on the methodology used to conduct this survey.

purpose of the survey.[2] For the 2017 survey, we received usable questionnaires from about 67 percent of the eligible sample.[3] The weighted response rate at each agency generally ranged from 57 percent to 82 percent, except the Department of Justice, which had a weighted response rate of 36 percent. The overall survey results are generalizable to the population of managers government-wide and at each individual agency.[4]

To assess the potential bias from agencies with lower response rates, we conducted a nonresponse bias analysis using information from the survey and sampling frame as available. The analysis confirmed discrepancies in the tendency to respond to the survey related to agency and SES status. The analysis also revealed some differences in response propensity by age and GS level; however, the direction and magnitude of the differences on these factors were not consistent across agencies or strata. Our data may be subject to bias from unmeasured sources for which we cannot control. Results, and in particular estimates from agencies with low response rates such as the Department of Justice, should be interpreted with caution. However, the survey's results are comparable to five previous surveys we conducted in 1997, 2000, 2003, 2007, and 2013.

To address the first objective, we used data from our 2017 survey to update agency scores on our use of performance information index. [5] This index, which was last updated using data from our 2013 survey, averages managers' responses on 11 questions related to the use of performance information for various management activities and decision

[2]GAO-17-775.

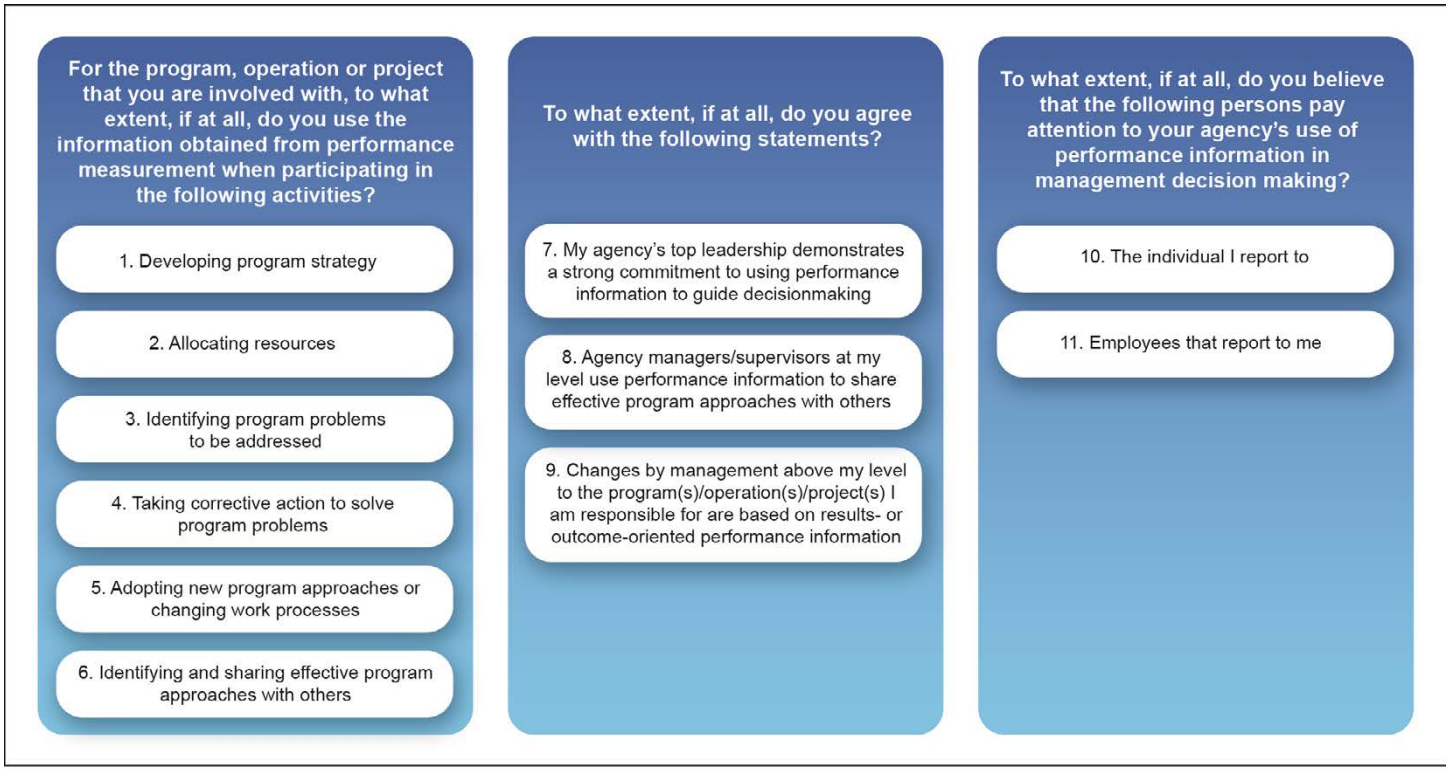
[3]This is the government-wide, weighted response rate.

[4]In reporting survey data, we use the term "government-wide" to refer to the 24 CFO Act agencies. We use the terms "federal managers" and "managers" to collectively refer to managers and supervisors.

[5]In our surveys we have defined performance information as the data collected to measure progress toward achieving an agency's established mission or program-related goals or objectives. We further stated that performance information can focus on performance measures, such as quality, timeliness, customer satisfaction, or efficiency.

making.[6] Using 2017 survey data, we conducted statistical analyses to ensure these 11 questions were still positively correlated. That analysis confirmed that no negative correlations existed and therefore no changes to the index were needed. Figure 11 shows the questions that comprise the index.

Figure 11: Questions from GAO's Managers Survey Used to Develop the Use of Performance Information Index



Source: GAO. | GAO-18-609SP

Note: Survey questions abbreviated. See survey questions 7a, 7c, 7d, 7e,7f, 7m, 9h, 9m, 10c, 11c, and 11d in GAO-17-776SP for details.

[6]The use of performance information index was developed using questions from our 2007 survey of federal managers. See GAO-08-1026T. The questions we used and reported on in the 2007 survey were slightly different from the ones that we used for the 2013 and 2017 surveys. To ensure comparability across years, in 2014 we recalculated the 2007 index using the 2007 data for the updated set of questions. We used Cronbach's alpha, a measure of whether the variation in the scale captures the majority of the variation in the underlying items, to assess the cohesiveness of the questions we included in the index. The 2017 index had a Cronbach's alpha of 0.93, which meets generally accepted standards for scale reliability. For more information on this and the 2013 index, see GAO-14-747.

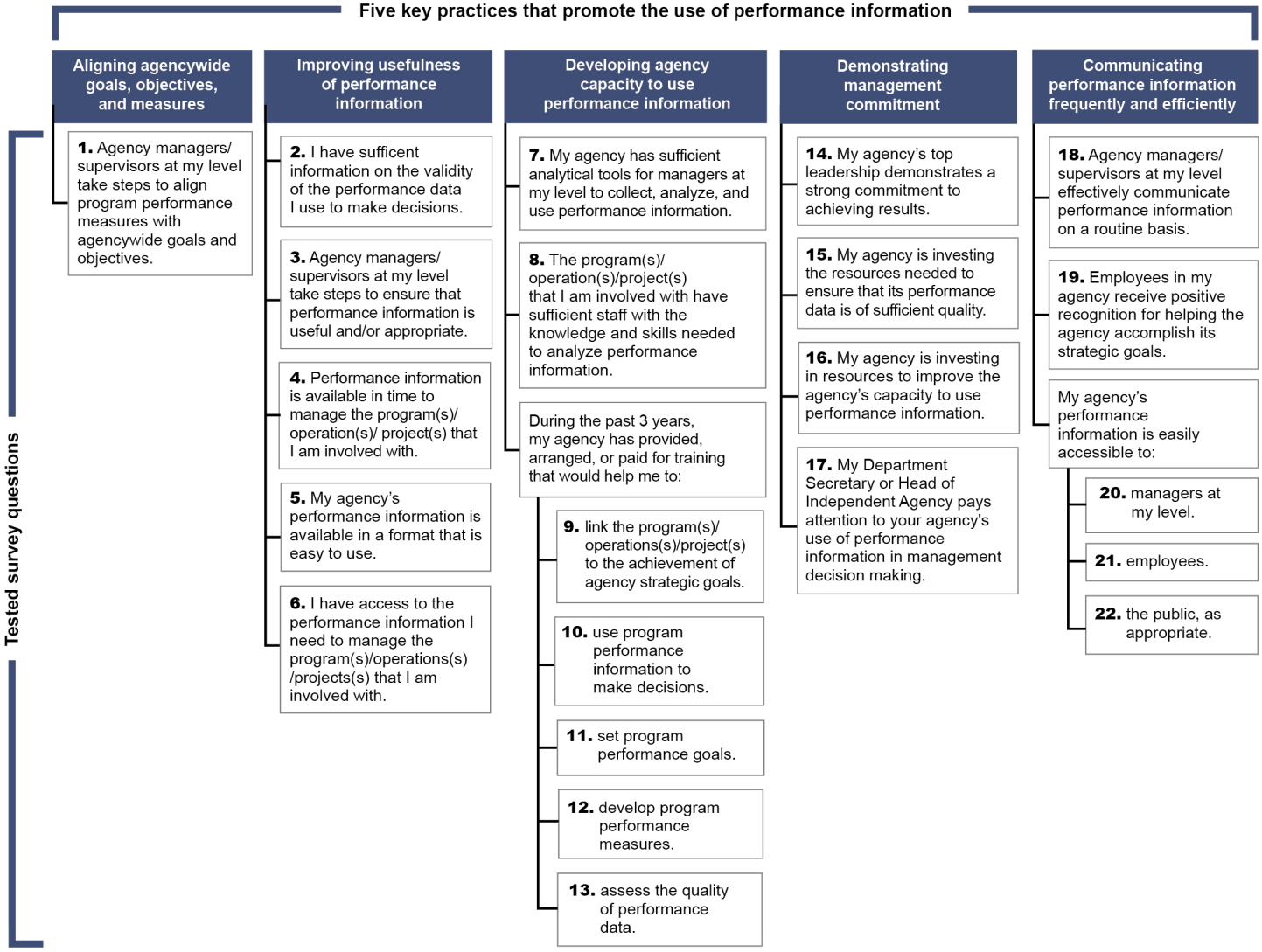
After calculating agency index scores for 2017, we compared them to previous results from 2007 and 2013, and to the government-wide average for 2017, to identify any statistically significant differences. We focus on statistically significant results because these indicate that observed relationships between variables and differences between groups are likely to be valid, after accounting for the effects of sampling and other sources of survey error.[7] For each of the 11 questions that comprise the index, we identified individual agency results, excluding missing and no basis to judge responses, and determined when they were statistically significantly different from (1) the agency's results on the same question in 2013, or (2) the government-wide average results on the question in 2017. In this report, we analyzed and summarized the results of our 2017 survey of federal managers. Due to the limited scope of the engagement, we did not conduct additional audit work to determine what may have caused statistically significant changes between our 2017 and past survey results.

To further address this objective we completed several statistical analyses that allowed us to assess the association between the index and 22 survey questions that we determined relate to leading practices we previously found promote the use of performance information.[8] See figure 12 for the 22 specific questions related to these five practices that we included in the analysis.

[7]Since each sample could have provided different estimates, we express our confidence in the precision of our particular sample's results as a 95 percent confidence interval. We defined differences between estimates as statistically significant through the p-value. Statistical significance is achieved when the p-value is < 0.05.

[8]Although we identified other questions also related to the five elements of effective performance management, many of these questions were already accounted for in our use index of performance information, and we excluded them from consideration in our regression analyses.

Figure 12: Questions from the 2017 Managers Survey Associated with Leading Practices that Promote the Use of Performance Information



Source: GAO. | GAO-18-609SP

Note: Survey questions abbreviated. See survey questions 6a, 6b, 6c, 6d, 6e, 6f, 6g, 6h, 9e, 9f, 9g, 9i, 9j, 9k, 9l,10d, 11a, 13b, 13c, 13d, 13e, and 13f in GAO-17-776SP for details.

When we individually tested these 22 survey questions (bivariate regression), we found that each was statistically significantly and positively related to the index in 2017. This means that each question, when tested in isolation from other factors, was associated with higher

scores on the index. However, when all 22 questions were tested together (multivariate regression), we found that 5 questions continued to be positively and significantly associated with the index in 2017, after controlling for other factors.

To conduct this multivariate analysis, we began with a base model that treated differences in managers' views of agency performance management use as a function of the agency where they worked. We found, however, that a model based on agency alone had little predictive power (R-squared of 0.04).[9] We next examined whether managers' responses to these questions reflecting practices that promote the use of performance information related to their perceptions of agency use of performance information, independent of agency. The results of this analysis are presented in table 1 below. Each coefficient reflects the increase in our index associated with a one-unit increase in the value of a particular survey question.[10]

Table 1: Final Multivariate Regression Model Results (Dependent Variable: Use of Performance Information Index)

Leading practice/variable	Regression model coefficients/fit information
1. Aligning agency-wide goals, objectives, and measures	
Agency managers/supervisors at my level take steps to align program performance measures with agency-wide goals and objectives (9j)	0.08**
2. Improving the usefulness of performance information	
I have sufficient information on the validity of the performance data I use to make decisions (10d)	0.18***
Agency managers/supervisors at my level take steps to ensure that performance information is useful and/or appropriate (9l)	0.16***
Performance information is available in time to manage the program(s)/operation(s) project(s) that I am involved with (6g)	0.06
My agency's performance information is available in a format that is easy to use (6d)	0.06
I have access to the performance information I need to manage the program(s)/ operation(s)/project(s) that I am involved with (6f)	-0.02

[9]R-squared is a measure of how well the variation in the independent variables included in the model predicts the variability in the dependent variable, and runs from 0 to 1.

[10]With the exception of intercepts for training, SES status, the constant term, and agency, questions in our model run from 1 (reflecting a response of " no extent") to 5 ("very great extent").

Leading practice/variable	Regression model coefficients/fit information
3. Developing agency capacity to use performance information	
My agency has sufficient analytical tools for managers at my level to collect, analyze, and use performance information (6e)	0.07*
The program(s)/ operation(s)/project(s) that I am involved with have sufficient staff with the knowledge and skills needed to analyze performance information (6h)	0.01
During the past 3 years, your agency has provided, arranged, or paid for training that would help you to link the program(s)/operation(s)/ project(s) to the achievement of agency strategic goals (13f)	0.10*
During the past 3 years, your agency has provided, arranged, or paid for training that would help you to use performance information to make decisions (13e)	0.06
During the past 3 years, your agency has provided, arranged, or paid for training that would help you to set program performance goals (13b)	-0.06
During the past 3 years, your agency has provided, arranged, or paid for training that would help you to develop program performance measures (13c)	0.06
During the past 3 years, your agency has provided, arranged, or paid for training that would help you to assess the quality of performance data (13d)	0.01
4. Demonstrating management commitment	
My agency's top leadership demonstrates a strong commitment to achieving results(9g)	0.02
My agency is investing the resources needed to ensure that its performance data are of sufficient quality (9f)	0.03
My agency is investing in resources to improve the agency's capacity to use performance information (9i)	0.04
My Department Secretary or Head of Independent Agency pays attention to your agency's use of performance information in management decision making (11a)	0.03
5. Communicating performance information frequently and effectively	
Agency managers/ supervisor at my level effectively communicate performance information on a routine basis (9k)	-0.01
Employees in my agency receive positive recognition for helping the agency accomplish its strategic goals (9e)	0.03
My agency's performance information is easily accessible to managers at my level (6a)	0.00
My agency's performance information is easily accessible to employees (6b)	-0.04
My agency's performance information is easily accessible to the public as appropriate (6c)	0.02
Controls	
Senior Executive Service (SES) (compared to non-SES)	0.08**
Agency as intercept (results omitted)	
Constant	0.83***
R-squared	0.67
N (number of survey respondents)	2,719

Legend: * p-value < 0.05; ** p-value < 0.01; *** p-value < 0.001.

Source: GAO analysis of 2017 federal managers survey | GAO-18-609SP

Note: With the exception of intercepts for the set of survey questions on training, SES status, the constant and each agency, each variable is a five-point scale that runs from "no extent" to "very great extent." R-squared is a measure of how well the variation in the independent variables included in the

model predicts the variability in the dependent variable, and runs from 0 to 1. The number in parenthesis following each question corresponds to the question number on the 2017 federal managers' survey.

Our final multivariate regression model had an R-squared of 0.67, suggesting that the variables in this model explain approximately 67 percent of the variation in the use index. We also tested this model controlling for whether a respondent was a member of the SES and found similar results.

As shown above in table 1, five questions related to three of the leading practices that promote agencies' use of performance information were statistically significant in 2017. These results suggest that, when controlling for other factors, certain specific efforts to increase agency use of performance information—such as providing information on the validity of performance data—may have a higher return and lead to higher index scores.

- With respect to *aligning agency-wide goals, objectives, and measures*, we found that each increase in terms of the extent to which individuals felt that managers aligned performance measures with agencywide goals and objectives was associated with a 0.08 increase in their score on the use index.
- In terms of *improving the usefulness of performance information*, we found that having information on the validity of performance data for decision making was the strongest predictor in our model (0.18). As measured here, taking steps to ensure the performance information is useful and appropriate was associated with almost as large a change in a managers' index score (0.16).
- In terms of *developing agency capacity to use performance information*, we found that having sufficient analytical tools to collect, analyze, and use performance information (0.07), and providing or paying for training that would help link their programs to achievement of agency strategic goals (0.10), were also statistically significantly related to a manager's reported use of performance information.[11]

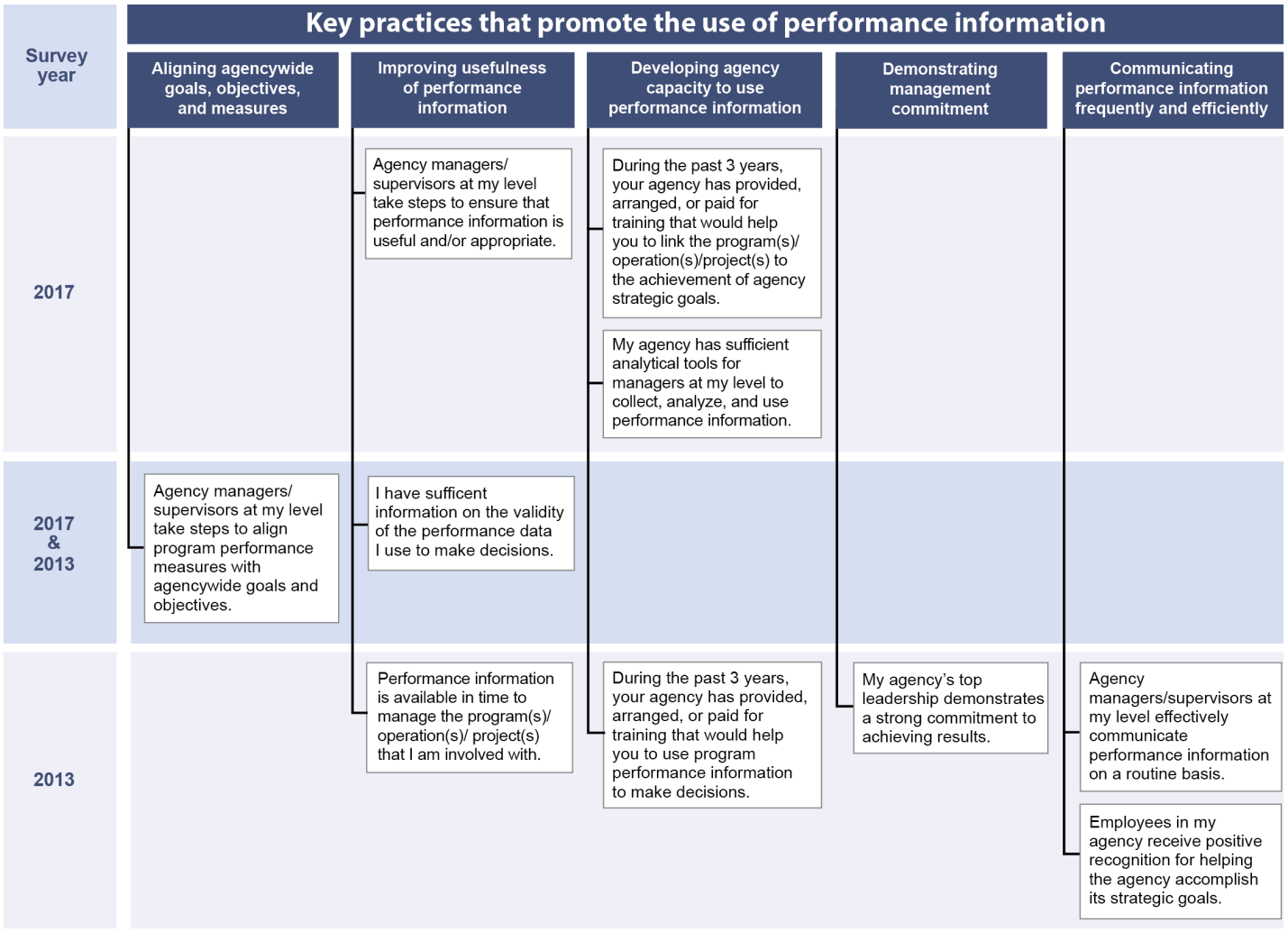
When we combined these results with what we previously found through

[11]We conducted impact analysis to ensure the stability of statistical significance of those five factors was not affected by the collinearity among the relevant factors.

a similar analysis of 2013 survey results in September 2014, we identified 10 questions that have had a statistically significant association with higher index scores.[12] This reinforces the importance of the five leading practices to promote the use of performance information. For each of these questions, which are outlined in figure 13 below, we determined when agency results were statistically significantly different from 2013 results or the 2017 government-wide average.

[12]GAO-14-747.

Figure 13: Questions from the 2013 and 2017 Managers Surveys Strongly Associated with Higher Use Index Scores



Source: GAO. | GAO-18-609SP

Note: Survey questions abbreviated. See survey questions 6e, 6g, 9e, 9g, 9j, 9k, 9l,10d, 13e, and 13f in GAO-17-776SP for details.

For the second objective, we examined, based on the extent they responded their programs had been subject to agency data-driven reviews, differences in managers' use index scores and responses on questions related to practices that promote the use of performance information. We grouped managers based on the extent they reported their programs had been subject to these reviews, from "no extent"

through “very great extent.” We then calculated the average index scores for the managers in each of those five categories.

We also examined differences in how managers responded to the 10 questions reflecting practices that can promote the use of performance information based on the extent they reported their programs had been subject to data-driven reviews. We grouped managers into three categories based on the extent they reported their programs had been subject to these reviews (no-small extent, moderate extent, great-very great extent). We then compared how these groups responded to the ten questions.

For the third objective, we reviewed

- our past work that assessed Executive Branch activities to enhance the use of performance information;[13]
- various resources (i.e., guidance, guides, and playbooks) developed by the Office of Management and Budget (OMB) and the Performance Improvement Council (PIC) that could support agencies’ use of performance information; and
- the President’s Management Agenda, and related materials with information on cross-agency efforts to improve the use of data in federal decision making.

Lastly, for the third objective we also interviewed OMB and PIC staff about any actions they have taken, or planned to take, to further support the use of performance information across the federal government.

We conducted this performance audit from October 2017 to September 2018 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

[13]We most recently summarized those findings in September 2017. See GAO-17-775.

Appendix III: Comparison of 2007, 2013, and 2017 Agency Use of Performance Information Index Scores

Figure 14: Comparison of 2007, 2013, and 2017 Agency Index Scores

Agency	2017 index score	2013 index score	Statistically significant change, 2013 to 2017	2007 index score	Statistically significant change, 2007 to 2017
Government-wide	3.39	3.41		3.46	↓
National Science Foundation	3.75	3.37	↑	3.61	
General Services Administration	3.62	3.54		3.62	
U. S. Agency for International Development	3.60	3.52		3.34	↑
National Aeronautics and Space Administration	3.59	3.49		3.71	
Social Security Administration	3.49	3.65	↓	3.70	↓
Department of Veterans Affairs	3.47	3.49		3.71	↓
Environmental Protection Agency	3.45	3.42		3.54	
Department of Housing and Urban Development	3.44	3.38		3.57	
Department of Defense	3.42	3.44		3.35	
Department of Energy	3.40	3.34		3.53	
Office of Personnel Management	3.39	3.66	↓	3.38	
Department of Labor	3.38	3.58		3.37	
Department of Commerce	3.37	3.35		3.44	
Small Business Administration	3.36	3.47		3.51	
Department of Health and Human Services	3.33	3.37		3.29	
Department of Justice	3.33	3.31		3.30	
Department of the Interior	3.33	3.22		3.16	
Department of the Treasury	3.29	3.41		3.54	↓
United States Department of Agriculture	3.29	3.13		3.16	
Department of Education	3.27	3.43		3.49	↓
Nuclear Regulatory Commission	3.27	3.32		3.70	↓
Department of State	3.25	3.36		3.36	
Department of Transportation	3.17	3.31		3.35	
Department of Homeland Security	3.04	3.22		3.33	↓

Legend

↑/↓ Statistically significant increase/decrease

Source: GAO analysis of survey data. | GAO-18-609SP

Notes: For each agency, the Use of Performance Information Mean Scale Index from 2007, 2013, and 2017 assumes an average opinion for missing and no basis to judge responses and includes questions 7a, 7c, 7d, 7e, 7f, 7m, 9h, 9m, 10c, 11c, and 11d on the 2017 survey. The maximum margin of error for our use index was .20 or less in 2007, 2013, and 2017. We measured statistical significance at the $p<0.05$ value.

Appendix IV: GAO Contact and Staff Acknowledgments

GAO Contact

Triana McNeil, (202) 512-6806 or mcneilt@gao.gov

Staff Acknowledgments

In addition to the above contact, Benjamin T. Licht (Assistant Director) and Adam Miles (Analyst-in-Charge) supervised this review and the development of the resulting report. Arpita Chattopadhyay, Caitlin Cusati, Meredith Moles, Dae Park, Amanda Prichard, Steven Putansu, Alan Rozzi, Shane Spencer, and Khristi Wilkins also made key contributions. Robert Robinson developed the graphics for this report. Alexandra Edwards, Jeff DeMarco, Mark Kehoe, Ulyana Panchishin, and Daniel Webb verified the information presented in this report.

Related GAO Products

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Managing for Results: Further Progress Made in Implementing the GPRA Modernization Act, but Additional Actions Needed to Address Pressing Governance Challenges. GAO-17-775. Washington, D.C.: September 29, 2017.

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