



Cabinet Office

Civil Service People Survey 2013

Technical guide

February 2014

Contents

Technical summary	3
The core questionnaire	6
Employee engagement	10
Driver analysis	16
Comparisons and significance testing	21
Rounding	26

Civil Service People Survey: technical summary

Coverage

The Civil Service People Survey covers 99.9% of Civil Servants. In 2013, 98 Ministerial and Non-Ministerial Departments, Executive Agencies and Crown Non-Departmental Public Bodies took part in the survey. Page 5 lists all the organisations that participated in the 2013 survey.

The survey operates a census approach with all staff working in participating organisations invited to take part. While small random samples could provide accurate organisation-level summaries we take a census approach to demonstrate that the opinion of everyone who works in the Civil Service has equal value.

The census approach allows us to produce over 8,700 reports for managers and teams so that action can be taken at all of the most appropriate levels across the Civil Service.

A total of 461,112 people were invited to take part in the 2013 survey, and 270,793 participated – a response rate of 59%. These figures do not reconcile with ONS published headcounts as organisations such as the MOD and FCO include their overseas local staff who are not counted in ONS statistics. The MOD also include military staff undertaking civilian/Civil Service roles. Page 4 shows an overview of response rates by organisation.

Coordination & delivery of the survey

The survey is coordinated by the Employee Engagement Team (EET) in the Cabinet Office. The EET let a contract centrally on behalf of the Civil Service and act as the central liaison between the independent survey supplier and participating organisations. The 2013 survey was delivered by ORC International, under a three year contract to deliver the 2011, 2012 and 2013 surveys.

Questionnaire

The questionnaire used in the Civil Service People Survey is standardised across all participating organisations, although it has aspects that allow for local variation to ensure that relevant terms are used in each organisation (for example the name of the organisation or the term for senior managers). Page 9 shows the core attitudinal measures asked in the survey.

Data collection methodology

The questionnaire is a self-completion process, with 96% completing online and 4% on paper. Completion of all questions in the survey are voluntary. Fieldwork for the 2013 survey began on 1st October and was completed on 31st October.

Analysis

The framework underpinning the analysis of the Civil Service People Survey is based on understanding the levels of employee engagement within the Civil Service and the experiences of work which influence engagement.

The five questions we use to measure engagement are outlined on page 13 alongside their rationale, while page 14 shows how we use those five questions to calculate the engagement index

The main measures used to talk about the nine engagement driver themes are the “theme scores”, this is the average percentage positive response to the theme’s constituent questions. Pages 16-20 explain our engagement driver analysis which shows how these themes are related to engagement.

Response rates

Fieldwork for the 2013 Civil Service People ran from 1st October to 31st October.

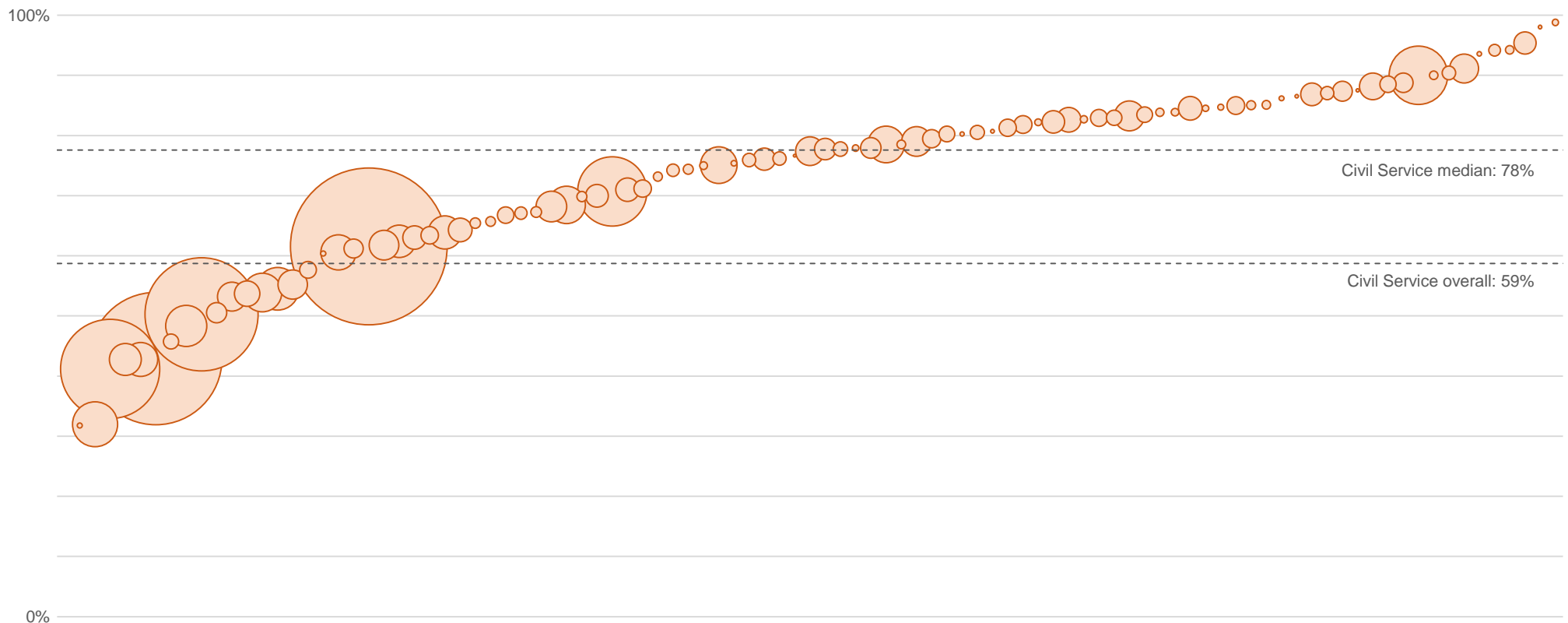
In total 270,793 people took part, an overall response rate of 59% (3 percentage points lower than the 2012 figure of 62%).

In half of the 98 participating departments and agencies the response rate was over 78% (up 1 percentage point on 2012).

41 participating organisations achieved a response rate of more than 80%, in ten organisations the response rate was 90% or higher, while only eight achieved a response rate of less than 50%.

Civil Service People Survey 2013 final response rates, by organisation

(The area of the bubble is proportionate to reported headcount)



Participating organisations

Attorney General's Departments

Attorney General's Office
Crown Prosecution Service
HM CPS Inspectorate
Serious Fraud Office
TSol

Business, Innovation and Skills

Department for Business, Innovation and Skills (excluding agencies)
Acas
Companies House
The Insolvency Service
UK Intellectual Property Office
Land Registry
Met Office
National Measurement Office
Office of Fair Trading
Ordnance Survey
Skills Funding Agency
UK Trade and Investment

Cabinet Office

Cabinet Office (excluding agencies)
Government Procurement Service

Charity Commission

Communities and Local Government

Department for Communities and Local Government (excluding agencies)
Planning Inspectorate

Culture, Media and Sport

Department for Culture, Media and Sport (excluding agencies)
The Royal Parks

Defence

Ministry of Defence (excluding agencies)
Defence Support Group
Dstl
UK Hydrographic Office

Department for Education¹

Department of Energy and Climate Change

Environment, Food and Rural Affairs

Department for the Environment, Food and Rural Affairs (excluding agencies)
Animal Health and Veterinary Laboratories Agency
Centre for Environment, Food and Aquaculture Science
Food and Environment Research Agency
Rural Payments Agency
Veterinary Medicines Directorate

Estyn

UK Export Finance

Food Standards Agency

Foreign and Commonwealth Office

Foreign and Commonwealth Office
FCO Services
Wilton Park Executive Agency

Health

Department of Health (excluding agencies)
Medicines and Healthcare Products Regulatory Agency
Public Health England

HM Revenue & Customs

HM Revenue & Customs
Valuation Office Agency

HM Treasury

Chancellor's other departments

UK Debt Management Office
Government Actuary's Department
National Savings and Investments

Home Office²

Home Office (headquarters)
Border Force
HM Passport Office
Immigration Enforcement
UK Visas and Immigration

Department for International Development

Justice

Ministry of Justice (headquarters)
MoJ Arms Length Bodies
Criminal Injuries Compensation Authority
HM Courts and Tribunals Service
Legal Aid Agency
National Offender Management Service
Office of the Public Guardian
The National Archives

National Crime Agency

Ofgem

Office of Rail Regulation

Ofsted

Scotland, Wales and Northern Ireland Offices¹

Scottish Government

Scottish Government (excluding agencies)
Accountant in Bankruptcy
Crown Office and Procurator Fiscal Service
Disclosure Scotland
Education Scotland
Historic Scotland
National Records of Scotland
Office of the Scottish Charity Regulator
Registers of Scotland
Scottish Courts Service
Scottish Housing Regulator
Scottish Prisons Service
Scottish Public Pensions Agency
Scottish Tribunals Service
Student Awards Agency for Scotland
Transport Scotland

Statistics

UK Statistics Authority
Office for National Statistics

Transport

Department for Transport (excluding agencies)
Driver and Vehicle Licensing Agency
Driving Standards Agency
Highways Agency
Maritime and Coastguard Agency
Vehicle and Operator Services Agency
Vehicle Certification Agency

Welsh Government

Work and Pensions

Department for Work and Pensions
Health and Safety Executive

Notes

1. The following sets of organisations participate in a "joint-survey", that is where all the organisations take part in the same version of the Civil Service People Survey and therefore are treated as one organisation for analysis and reporting of the survey results.

- The Department for Education and its executive agencies
- The Scotland Office and Office of the Advocate General, the Wales Office, and the Northern Ireland Office

2. The Home Office's operational directorates (Border Force, Immigration Enforcement, and UK Visas and Immigration) undertake their own versions of the Civil Service People Survey and therefore are treated as separate organisations for analysis and reporting of the survey results.

The core questionnaire

Structure of the CSPS core questionnaire

The core questionnaire includes 62 questions about perceptions of work. Using a technique called factor analysis these have been identified as fitting into 12 distinct themes. Factor analysis identifies the statistical relationships between different questions, and illustrates how these questions are manifestations of different experiences of work.

The question “Do you have a good line manager?” would be difficult for respondents to answer as they will need to provide an overall assessment of many different aspects of their line manager’s competencies and behaviour. Instead we ask a range of questions about line manager competency that can then provide a more accurate picture of the respondent’s perceptions of their line manager.

An example of where factor analysis illustrates the underlying relationships between the questions is in the question “I have the skills I need to do my job effectively”. At first glance this may seem to be a question about learning and development - the factor analysis of the CSPS dataset shows that this is more closely related to other questions about resources and workload than questions about learning and development.

and Autumn 2009 surveys and have shown relatively strong consistency in the theme structure across organisations and over time.

Beyond the attitudinal questions, the questionnaire also includes questions on future working intentions, job/work related demographics, personal characteristics and wellbeing. Where possible these use the harmonised questions for government social surveys recommended by the ONS (see <http://www.ons.gov.uk/ons/guide-method/harmonisation/harmonisation-programme/index.html> for further details). This approach ensures that the CSPS results can be compared to other surveys of the wider labour market and general population.

The themes were tested in both the Spring 2009 pilot

Developing the core questionnaire

The Employee Engagement Programme carried out a number of pathfinder studies with Civil Service organisations over 2007 and 2008. These were used to inform the development of a core questionnaire for a pilot of the single survey approach used by the CSPS. The questionnaire used in the pilot was a pragmatic harmonisation of previous questionnaires used in staff surveys by Civil Service organisations while ensuring that the pilot questionnaire covered key areas identified by previous studies of employee engagement.

The core questionnaire used by the 2009-2013 CSPS was developed following the pilot survey in consultation with survey managers and analysts across all participating organisations. This development process consisted of a substantial review of the core questionnaire to ensure it used plain English, and covered all aspects required to measure engagement levels in the Civil Service. The proposed questionnaire was then subjected to cognitive testing¹ to ensure that the questions were easily understood by respondents.

This approach means that organisations have been able to retain trend data, by using questions they have previously measured, while ensuring that the questionnaire is fit for purpose in measuring employee engagement in the Civil Service and the experiences of work that can affect it.

There were no changes to the wording of the core attitudinal questions between 2009 and 2010, however following analysis of the 2009 results a few questions were moved to more appropriate themes. In 2011 an additional question was added to the taking action section asking if staff thought effective action had taken place since the last survey.

Five questions on organisational culture (B58 to B62) were added to the core questionnaire in 2012. They have been included to help the Civil Service Reform Team and Minister for the Cabinet Office measure some of their desired cultural outcomes of the Civil Service Reform Plan.

Following a pilot with five organisations (Cabinet Office, DEFRA, DVLA, DWP and ONS) in the 2011 People Survey, since 2012 we have included questions on subjective wellbeing in the core questionnaire for the Civil Service People Survey. The subjective wellbeing questions are the four questions being used by the Office for National Statistics as part of their Measuring National Wellbeing programme:

- Overall, how satisfied are you with your life nowadays?
- Overall, to what extent do you think the things you do in your life are worthwhile?
- Overall, how happy did you feel yesterday?
- Overall, how anxious did you feel yesterday?

Please note that the four wellbeing questions are measured on an 11-point scale of 0 to 10, where 0 means not at all and 10 means completely. This is the same as is used in the Measuring National Wellbeing programme. This differs from the rest of the core questionnaire which is arranged around a 5 point scale which ranges from strongly agree to strongly disagree.

1. Cognitive testing is a research technique which involves taking respondents through the questionnaire and then asking them to explain what they thought the question was about and why they responded to the question in the way that they did.

Core questionnaire

My work

- B01. I am interested in my work
- B02. I am sufficiently challenged by my work
- B03. My work gives me a sense of personal accomplishment
- B04. I feel involved in the decisions that affect my work
- B05. I have a choice in deciding how I do my work

Organisational objectives and purpose

- B06. I have a clear understanding of [my organisation's] purpose
- B07. I have a clear understanding of [my organisation's] objectives
- B08. I understand how my work contributes to [my organisation's] objectives

My manager

- B09. My manager motivates me to be more effective in my job
- B10. My manager is considerate of my life outside work
- B11. My manager is open to my ideas
- B12. My manager helps me to understand how I contribute to [my organisation's] objectives
- B13. Overall, I have confidence in the decisions made by my manager
- B14. My manager recognises when I have done my job well
- B15. I receive regular feedback on my performance
- B16. The feedback I receive helps me to improve my performance
- B17. I think that my performance is evaluated fairly
- B18. Poor performance is dealt with effectively in my team

My team

- B19. The people in my team can be relied upon to help when things get difficult in my job
- B20. The people in my team work together to find ways to improve the service we provide
- B21. The people in my team are encouraged to come up with new and better ways of doing things

Learning and development

- B22. I am able to access the right learning and development opportunities when I need to
- B23. Learning and development activities I have completed in the past 12 months have helped to improve my performance
- B24. There are opportunities for me to develop my career in [my organisation]
- B25. Learning and development activities I have completed while working for [my organisation] are helping me to develop my career

The core questionnaire comprises a series of attitudinal measures (outlined below) which are rated on a strongly agree to strongly disagree scale. The principal measure for these questions is the “percent positive” which is the proportion responding “strongly agree” or “agree” to a given measure.

Inclusion and fair treatment

- B26. I am treated fairly at work
- B27. I am treated with respect by the people I work with
- B28. I feel valued for the work I do
- B29. I think that [my organisation] respects individual differences (e.g. cultures, working styles, backgrounds, ideas, etc)

Resources and workload

- B30. In my job, I am clear what is expected of me
- B31. I get the information I need to do my job well
- B32. I have clear work objectives
- B33. I have the skills I need to do my job effectively
- B34. I have the tools I need to do my job effectively
- B35. I have an acceptable workload
- B36. I achieve a good balance between my work life and my private life

Pay and benefits

- B37. I feel that my pay adequately reflects my performance
- B38. I am satisfied with the total benefits package
- B39. Compared to people doing a similar job in other organisations I feel my pay is reasonable

Leadership and managing change

- B40. I feel that [my organisation] as a whole is managed well
- B41. [Senior managers] in [my organisation] are sufficiently visible
- B42. I believe the actions of [senior managers] are consistent with [my organisation's] values
- B43. I believe that [the board has] a clear vision for the future of [my organisation]
- B44. Overall, I have confidence in the decisions made by [my organisation's] senior managers
- B45. I feel that change is managed well in [my organisation]
- B46. When changes are made in [my organisation] they are usually for the better
- B47. [My organisation] keeps me informed about matters that affect me
- B48. I have the opportunity to contribute my views before decisions are made that affect me
- B49. I think it is safe to challenge the way things are done in [my organisation]

The core questionnaire also includes questions on discrimination, bullying and harassment, wellbeing, future intentions, the Civil Service Code and demographic questions.

Employee engagement

- B50. I am proud when I tell others I am part of [my organisation]
- B51. I would recommend [my organisation] as a great place to work
- B52. I feel a strong personal attachment to [my organisation]
- B53. [My organisation] inspires me to do the best in my job
- B54. [My organisation] motivates me to help it achieve its objectives

Taking action

- B55. I believe that [senior managers] in [my organisation] will take action on the results from this survey
- B56. I believe that managers where I work will take action on the results from this survey
- B57. Where I work, I think effective action has been taken on the results of the last survey

Organisational culture

- B58. I am trusted to carry out my job effectively
- B59. I believe I would be supported if I try a new idea, even if it may not work
- B60. My performance is evaluated based on whether I get things done, rather than on solely following process
- B61. When I talk about my organisation I say "we" rather than "they"
- B62. I have some really good friendships at work

Employee engagement

External evidence shows clear business benefits from improving levels of engagement

There is an ever increasing body of evidence demonstrating the business benefit of employee engagement in both the private and public sector.

Engage for Success, a cross-economy movement of business, charity and public sector leaders, compiled the most recent assessment of evidence in 2012². A selection of specific case study examples of benefits are shown below.

Furthermore, the Gallup organisation which have been conducting employee research for the past 40 years consistently show through meta-analysis³ that engagement is positively correlated with:

- Customer satisfaction
- Profitability
- Productivity
- Reducing absenteeism
- Product and service quality

“In our business with almost 150,000 people, engagement is a key concern. In businesses of our scale, you don’t even get started without engagement”
Justin King, CEO of Sainsbury’s¹

“It is about how we create the conditions in which employees offer more of their capability and potential.”
David MacLeod, co-author of *The Extra Mile* and *Engaging for Success*¹

“Employees who work for engaging organisations get an organisation they feel proud to work for, managers who are more likely to listen and care for them, leaders who listen to and inspire them, more opportunities for personal growth, teams that support each other. They are likely to perceive the deal they get from their employer as positive, and they get lower levels of stress and a better work life balance.”
Jonathan Austin, Best Companies¹

Income Growth

Marks & Spencer’s found over a four year period that stores with increasing employee engagement delivered, on average, £62 million more sales than stores with declining levels of engagement.

Customer/client satisfaction

Research in the NHS shows clear links between the level of engagement and levels of patient satisfaction, as well as the link with outcome measures such as mortality rates.

Absence and wellbeing

Aon Hewitt analysis shows that companies with highly engaged staff have half the levels of sickness absence and lower levels of workplace stress than companies with low levels of engagement.

Productivity and performance

RSA insurance find that units with higher levels of engagement have 15% less “down-time” – effectively an “extra employee’s worth of work” for every 8 engaged employees.

Innovation

At BAE Systems, by more actively involving and engaging staff on the “shop-floor” they have identified over £26 million of improvement opportunities, and reduced the time taken to build Typhoon jets by 25%.

Retention

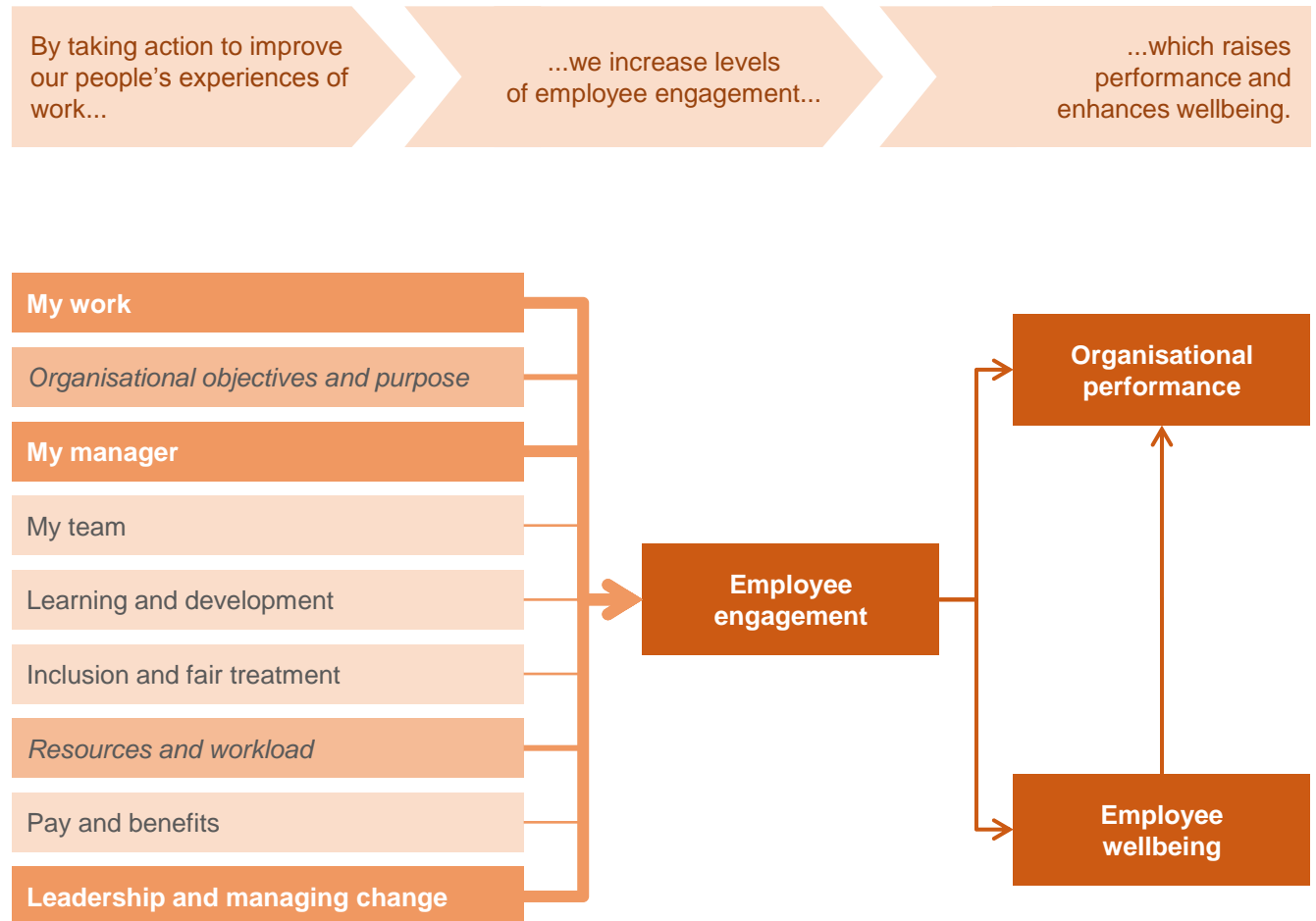
Rentokil have found that teams with the most improved levels of engagement saw employee retention increase, saving almost £7 million in costs associated with recruitment.

1. MacLeod D and Clarke N (2009) *Engaging for Success: enhancing performance through employee engagement* [online]; Engage for Success; last accessed 13-Nov-2013 <http://www.engageforsuccess.org/wp-content/uploads/2012/09/file52215.pdf>

2. Rayton B, Dodge T and D’Analeze G (2012) *The Evidence: report of the Employee Engagement Taskforce ‘Nailing the Evidence’ workgroup* [online]; Engage for Success; last accessed 13-Nov-2013 <http://cdn1.engageforsuccess.org/wp-content/uploads/2012/09/The-Evidence.pdf>

3. Gallup (2013) *State of the global workplace* [online]; Gallup; last accessed 13-Nov-2013 <http://www.gallup.com/strategicconsulting/164735/state-global-workplace.aspx>

Our analytical framework focuses on how employee engagement levels can be improved



The results of the People Survey have shown consistently that **leadership and managing change** is the strongest driver of employee engagement in the Civil Service, followed by the **my work** and **my manager** themes. The **organisational objectives and purpose** and **resources and workload** themes are also strongly associated with changes in levels of employee engagement.

Measuring employee engagement in the Civil Service

Employee engagement is a workplace approach designed to ensure that employees are committed to their organisation's goals and values, motivated to contribute to organisational success, and are able at the same time to enhance their own sense of well-being.

There is no single definition of employee engagement or standard set of questions. In the Civil Service People Survey we use five questions measuring pride, advocacy, attachment, inspiration and motivation.

Aspect	Question	Rationale
Pride	B50. I am proud when I tell others I am part of [my organisation]	An engaged employee feels proud to be associated with their organisation, by feeling part of it rather than just “working for” it.
Advocacy	B51. I would recommend [my organisation] as a great place to work	An engaged employee will be an advocate of their organisation and the way it works.
Attachment	B52. I feel a strong personal attachment to [my organisation]	An engaged employee has a strong, and emotional, sense of belonging to their organisation.
Inspiration	B53. [My organisation] inspires me to do the best in my job	An engaged employee will contribute their best, and it is important that their organisation plays a role in inspiring this.
Motivation	B54. [My organisation] motivates me to help it achieve its objectives	An engaged employee is committed to ensuring their organisation is successful in what it sets out to do.

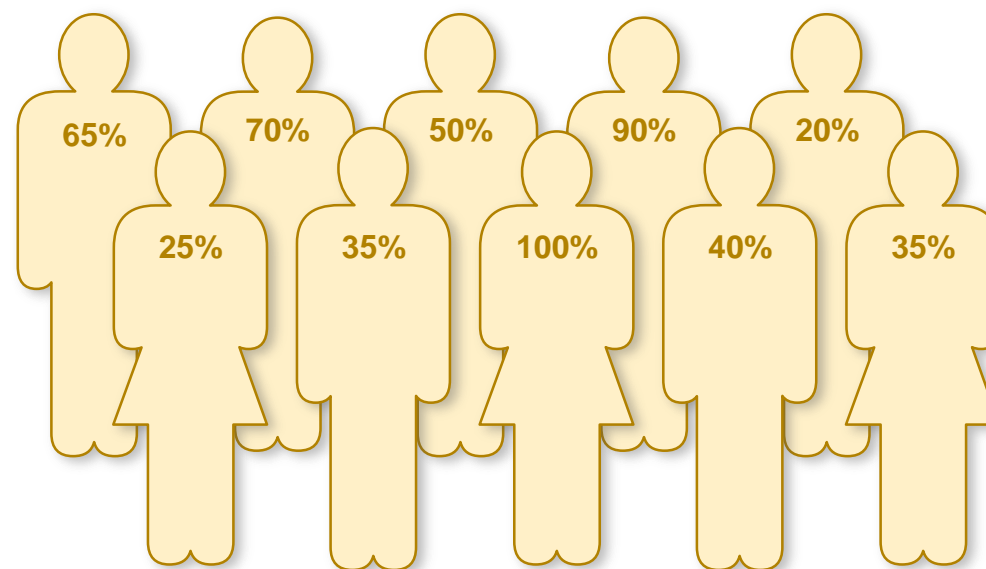
Calculating the engagement index

Like all of the other core attitudinal questions in the CSPS, each of the engagement questions is asked using a five-point agreement scale.

For each respondent an engagement score is calculated as the average score across the five questions where strongly disagree is equivalent to 0, disagree is equivalent to 25, neither agree nor disagree is equivalent to 50, agree is equivalent to 75 and strongly agree is equivalent to 100. Like all questions in the survey this cannot be linked back to named individuals.

The engagement index is then calculated as the average engagement score in the organisation, or selected sub-group. This approach means that a score of 100 is equivalent to all respondents in an organisation or group saying strongly agree to all five engagement questions, while a score of 0 is equivalent to all respondents in an organisation or group saying strongly disagree to all five engagement questions.

	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree	Score
<i>Weight:</i>	100%	75%	50%	25%	0%	
I am proud when I tell others I am part of [my organisation]	✓					100%
I would recommend [my organisation] as a great place to work		✓				75%
I feel a strong personal attachment to [my organisation]		✓				75%
[My organisation] inspires me to do the best in my job			✓			50%
[My organisation] motivates me to help it achieve its objectives				✓		25%
Total:						325%
Respondent engagement score (total / 5):						65%



Sum of engagement scores (65+25+70+35+50+100+90+40+20+35): 530%

Engagement index for the group (530 / 10): 53%

Comparing the “index” scores to “percent positive” scores

Because the engagement index is calculated using the whole response scale two groups with the same percent positive scores may have different engagement index scores. For example comparing one year’s results to another, or as illustrated in the example below comparing two organisations (or units).

In the example below two organisations (A and B) have 50% of respondents saying strongly agree or agree. However the index score for the two organisations is 49% in A and 63% in B.

The index score gives a stronger weight to strongly agree responses than agree responses, and also gives stronger weight to neutral responses than to disagree or strongly disagree responses.

Figure 1 shows the distribution of the responses in each organisation. Table 1 shows how the calculations on the previous page translate these response profiles into index scores. Finally Figure 2 contrasts the percent positive scores between the two organisations with their index scores.

Figure 1: Organisational results

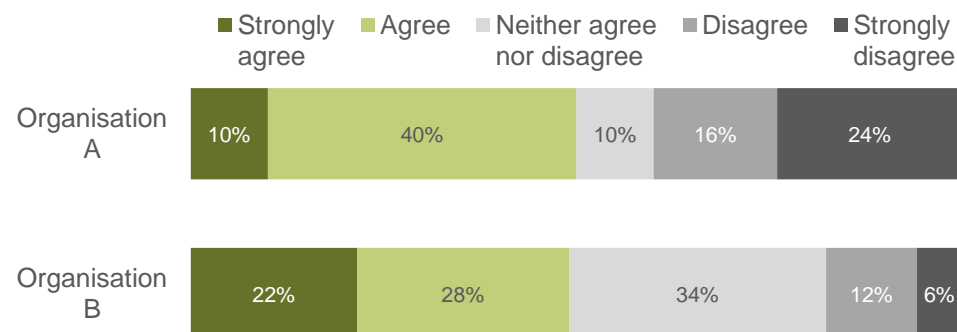
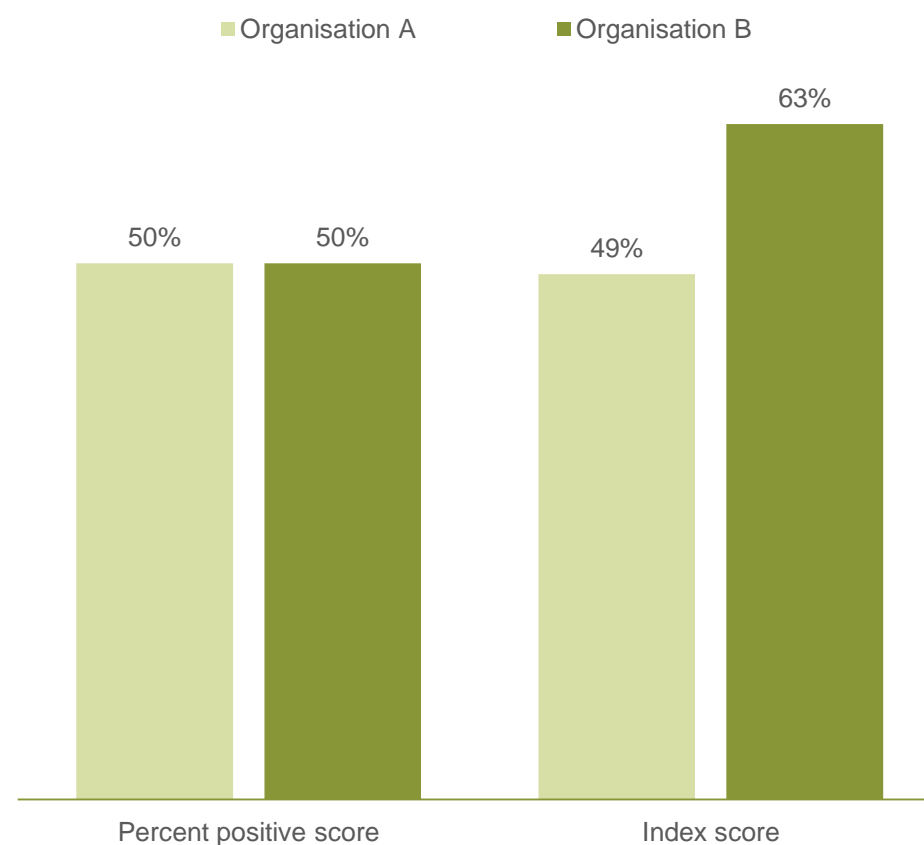


Table 1: Calculating the index score

	Weight	Organisation A		Organisation B	
		%	Score	%	Score
Strongly agree	100%	10%	10%	22%	22%
Agree	75%	40%	30%	28%	21%
Neither agree nor disagree	50%	10%	5%	34%	17%
Disagree	25%	16%	4%	12%	3%
Strongly disagree	0%	24%	0%	6%	0%
Total		100%	49%	100%	63%

Figure 2: Comparison of percent positive and index approaches



Driver analysis

Using driver analysis to understand what influences employee engagement

The engagement questions measure emotional outcomes but do not give us the insight to know how to improve or maintain engagement – for example, the question on advocacy may tell us that you do not recommend the organisation you work for as a great place to work, but it doesn't tell us how to make it a great place to work.

Questions B01-B49 measure a range of different aspects of the experience of working in the Civil Service. We use a statistical technique called factor analysis to look at the relationships between these measures to identify statistical groups of questions.

Factor analysis of the 2009 People Survey, repeated with the 2010, 2011 and 2012 surveys, shows that these 49 questions can be grouped into nine distinct themes:

- My work – *experiences of the day-to-day work*
- Organisational objectives and purpose – *understanding of what the organisation is there to do*
- My manager – *employees' relationship with their immediate supervisor*
- My team – *employees' relationship with their immediate colleagues*
- Learning and development – *access to and quality of L&D opportunities*
- Inclusion and fair treatment – *feeling valued and respected for who they are*
- Resources and workload – *having the tools and time to do the job*
- Pay and benefits – *general perceptions and comparability of pay*
- Leadership and managing change – *relationship with senior managers and the ability of the organisation to manage change effectively*

Our analytical framework theorises that improving these experiences of work has a positive impact on engagement. Using a combination of factor analysis and multiple linear regression we are able to look at the partial effects of the nine experience themes against engagement – a technique called key driver analysis.

The factor analysis that groups the questions into the nine themes also produces a score for each respondent for that theme. These scores are used as the independent variables in a multiple regression model against each respondent's engagement score. This produces a coefficient of the relationship between engagement and the theme.

Factor analysis

Factor analysis is a statistical technique we use to group the survey questions into themes and explores the structural relationships between the questions and underlying aspects called factors. The output from the factor analysis shows the strength of these relationships, and we use the dominant association to group the questions into themes. However, most questions will also have weak associations with the other factors.

For example, while this analysis indicates that the question “My manager helps me to understand how I contribute to [my organisation’s objectives]” is strongly related to the line management factor, it also shows that the question has a weak association with some of the other survey factors (such as leadership and managing change and my work). As the strongest relationship is with line management the question is grouped in the line management factor.

The weak associations between questions and the other factors mean that the theme scores (calculated from just the question responses in the theme) are a slightly uncertain representation of the real opinion

about that theme because of the small influences of other factors in the questions. As these influences are very small we only use the strongest relationship to group questions into themes.

However, these weak relationships affect the reliability of the driver analysis if we use the theme scores. Therefore, we use scores produced by the factor analysis, “factor scores”, that take account of the weak relationships and ensure that scores for each factor are not correlated with each other. These factor scores remain highly correlated with their associated theme score, so we do not report factor scores in the standard reports to minimise confusion for report users.

Essentially, we can think of the factor scores as representing the thick arrows between questions and themes in Figure A and having eliminated the thinner arrows representing the very small influences other themes have on theme scores. Figure B demonstrates the conceptual difference between the two types of score when they are being used in regression analysis.

Figure A: Example of relationships between survey themes and survey questions



Figure B: Comparison of theme scores and factor scores when used in regression analysis



Conducting and reporting the driver analysis

Now that we have produced the factor scores the regression analysis can be run. This is a statistical technique that looks at the association between engagement and the factor scores. Telling us which survey themes are closely related to engagement. The CSPS reporting focuses on the regression coefficients, which tells us the strength of the relationship between engagement and the survey themes.

The coefficient shows the change in engagement scores for a change of 1 in the factor score for a survey theme. Because of the statistical techniques involved it is not possible to calculate this into the effect on engagement of particular questions. Figure A illustrates how the coefficients represent the strength of relationship between the factor scores and engagement.

As the coefficients are based on factor scores they are not directly intuitive for report users. Furthermore, the precise value of the coefficient is not essential for action planning, a coefficient of 0.24 is broadly similar to a coefficient of 0.27. Therefore, the CSPS reporting uses a set of rating bar icons to provide an indicator of the general magnitude of the relationship between the theme and engagement. Figure B shows how the rating bar icons are shown in the highlights reports.

The following thresholds are used for the rating bars:

- 4 bars: coefficient is 0.4 or greater
- 3 bars: coefficient is between 0.2 and 0.4
- 2 bars: coefficient is between 0.1 and 0.2
- 1 bar: coefficient is less than 0.1
- 0 bars: driver analysis has not identified a statistically significant relationship between this theme and levels of employee engagement

Figure A: Graphical representation of regression coefficients

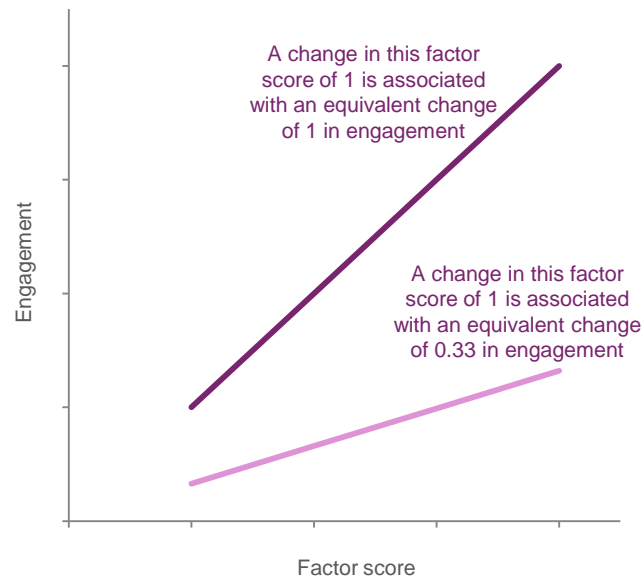


Figure B: Driver analysis results as presented in the "highlights report"

Drivers of engagement				
Employee engagement is shaped by experiences at work, as measured by nine themes in the survey. The table below shows how you performed on each of these themes, ranked by the strength of association with engagement. The themes which have the strongest association with engagement should be the focus for action. See the appendix for further details.				
	Strength of association with engagement	Theme score % positive	Difference from previous survey	Difference from CS High Performers
Leadership and managing change		38%	-1	-3
My work		79%	+3	+6
My line manager		67%	+2	+1
Learning and development		42%	+4	-2
Organisational objectives and purpose		70%	0	-12
Pay and benefits		28%	-1	-2
Resources and workload		72%	+3	-1
Inclusion and fair treatment		77%	+3	+2
My team		83%	+2	+5

These results are based on key driver analysis using factor scores

These results are based on theme scores

Criteria for receiving driver analysis

The statistical techniques involved in running the driver require large sample sizes (the number of respondents), and at a minimum 100 responses. Based on analysis of the 2009 CSPA results, a threshold of 500 responses is set for units below organisation level, and units with less than 500 responses will not have driver analysis carried out in the automated reporting. At the organisation overall level and the first tier of the organisation's hierarchy the threshold is relaxed to 150 responses to ensure each organisation has the chance to obtain driver analysis unique to their organisation. Organisations with between 100 and 149 responses will also have driver analysis run if they have a response rate of at least 80%.

The statistical techniques used in driver analysis also demand a strict interpretation of what is and is not a survey response. The number of responses valid for driver analysis is typically smaller than the overall number of responses achieved by a unit. This is

because the driver analysis requires that an individual has answered all attitudinal questions in the survey, but a small number of respondents may not have felt able to answer one or two questions in the survey. Therefore some units near the thresholds may not receive their own driver analysis.

After the regression analysis is run the coefficients are checked to see if the analysis has output coefficients for at least three themes, this is to ensure that the analysis is meaningful for report users.

If any of the criteria are not met then the unit will inherit their parent unit's driver analysis. In organisations with large hierarchies this may mean that the driver analysis shown in a report is that for its grandparent (the parent unit of the selected unit's parent). At the organisation overall level the reporting unit will inherit the driver analysis from the Civil Service overall.

Figure A: Flowchart showing criteria for receiving driver analysis

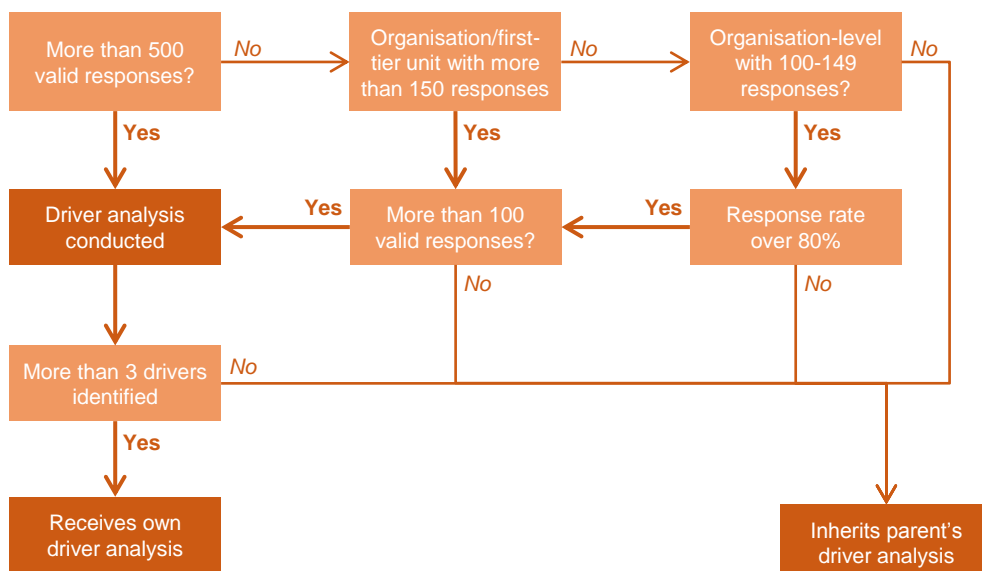
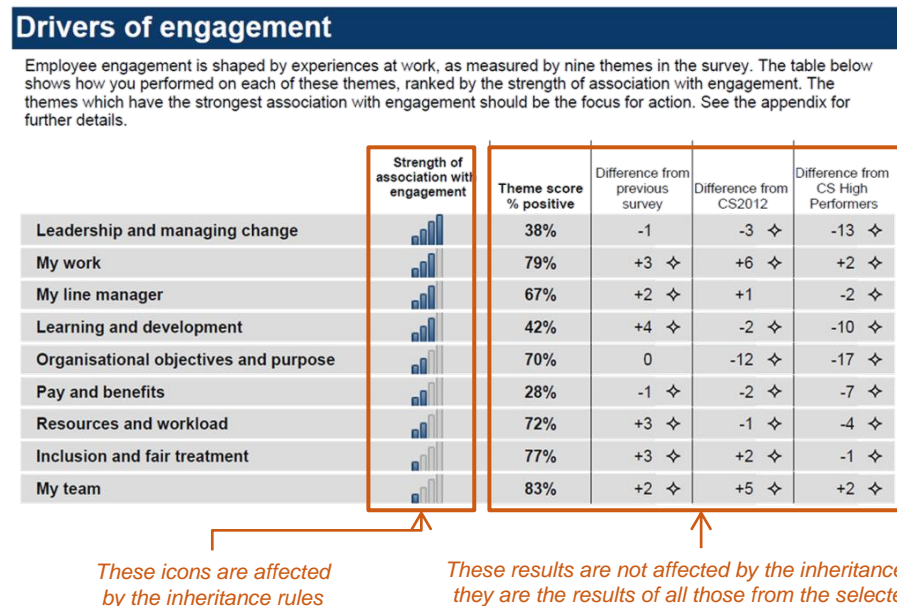


Figure B: Driver analysis results as presented in the "highlights report"



Comparisons and significance testing

Comparisons with previous or other surveys

While questions in the CSPS may appear similar to those used in previous surveys, users should be considerate of the effect that wording differences may have on the way in which an individual responds to the question. In some cases this effect will be relatively small, e.g. where the wording has been simplified but the concept remains the same. Comparisons to these questions are displayed in CSPS reporting but the question is flagged to ensure users are aware that previous surveys used an alternative wording.

In other situations it is not appropriate to make a direct comparison in the CSPS reporting. For example where a reference point has changed, such as from “senior managers” to “the SCS”, this definitional change may mean that respondents are not referring to the same group as they may have previously done and therefore the two results are not directly comparable. Alternatively a question may previously have measured two concepts, while the CSPS questions only measure one concept at a time and therefore it is not possible to compare the former question with the new questions.

Previous or other survey wording	CSPS 2013 survey wording	
I am clear what is expected of me in my job	In my job I am clear what is expected of me	✓
Difference caused by wording change unlikely to substantially affect the way people respond		
I have clear measurable work objectives	I have clear work objectives	*
Question concept still similar, but wording changes may affect the way people respond – flagged		
Senior managers in [my organisation] are sufficiently visible	The SCS in [my organisation] are sufficiently visible	x
I am treated with fairness and respect	I am treated with respect by the people I work with	x
Question concepts are different and are not comparable		

Using statistical testing to compare sets of results

Unless an organisation or team has a 100% response rate, we have to take account of the fact we do not know the views of those who did not take part. In statistical terms this is called the “margin of error”.

When making comparisons between groups over time it is important not just to look at the absolute difference between the reported figures but also to consider the margin of error.

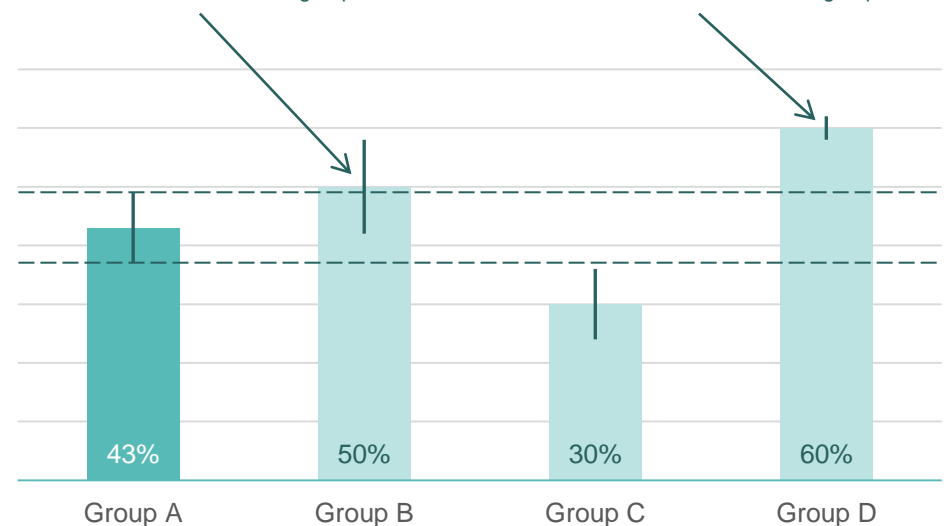
If the margins of error overlap then we cannot be confident that the difference between the two figures is a ‘real’ difference of opinion.

For example, take the situation outlined in the table and figure below. Here we see that the margin of error for Group A and Group B overlap and therefore we cannot be confident that there is a real difference of opinion between the two groups. However, for Group A and Group D the margins of error do not overlap and therefore we can be confident that there is a real difference between the two groups.

Unit	Headcount	Responses	% positive score	Margin of error
Group A	200	120 (60%)	43%	± 6%
Group B	150	80 (53%)	50%	± 8%
Group C	50	40 (80%)	30%	± 6%
Group D	500	375 (75%)	60%	± 2%

The difference between Group A and Group B is not statistically significant because the margins of error overlap. So we cannot be certain there is a real difference between the two groups.

The difference between Group A and Group D is not statistically significant because the margins of error do not overlap. So we can be certain there is a real difference between the two groups.



Showing statistically significant differences in CSPS reporting products

Significance testing is used in the CSPS reporting to show whether the differences between a unit and comparisons are statistically significant. The reporting will show all differences, but for differences that are statistically significant the result will be flagged with a diamond symbol, ✧.

Survey proportions (the percent positive and theme scores) are tested using z-tests, while the engagement index is tested using the t-test. All tests are conducted at the 95% confidence level.

Statistical testing is used when comparing the following sets of results:

- A unit or organisation's 2013 scores against that unit or organisation's scores from previous years
- A unit against its parent, organisation or another unit's results
- A unit or organisation's scores against a Civil Service benchmark

This section shows the results for each question in the survey, by theme.

^ indicates a variation in question wording from your previous survey

✧ indicates statistically significant difference from comparison

	% Positive	Difference from previous survey	Difference from CABINET OFFICE	Difference from high performing units
My work				
:Strength of association with engagement				
B01. I am interested in my work	89%	-1	-4 ✧	-4 ✧
B02. I am sufficiently challenged by my work	82%	-3 ✧	+1	-2

A statistically significant difference

A difference that is not statistically significant

Margin of error reference table

The CSPS reporting uses the t-test for the engagement index and z-tests for all other survey measures to test for statistical significance.

Comparisons between groups or over time use two-sample tests, while comparisons to benchmark scores use one-sample tests.

These are complex calculations that are based on the exact number of people responding and their results. The table below provides a reference for simple at-a-glance understanding of the margins of error. Like the significance tests in the reports the reference table uses the 95% confidence level.

For a given number of respondents results of 50% have the largest margin of error, the closer the figure is to 0% or 100% the smaller the margin of error. The margin of error also reduces as the number of respondents increases.

For example, for a group of 100 respondents a result of 50% has a margin of error of ± 10 percentage points, but for a result of 5% or 95% it is ± 4 percentage points. However, for a group of 1,000 respondents a result of 50% has an error of just ± 3 percentage points, and at 5% or 95% the margin of error is ± 1 percentage point.

Number of respondents	Survey result proportion:							
	50%	40% / 60%	30% / 70%	25% / 75%	20% / 80%	15% / 85%	10% / 90%	5% / 95%
50	± 14	± 14	± 13	± 12	± 11	± 10	± 8	± 6
100	± 10	± 10	± 9	± 8	± 8	± 7	± 6	± 4
150	± 8	± 8	± 7	± 7	± 6	± 6	± 5	± 3
200	± 7	± 7	± 6	± 6	± 6	± 5	± 4	± 3
250	± 6	± 6	± 6	± 5	± 5	± 4	± 4	± 3
500	± 4	± 4	± 4	± 4	± 4	± 3	± 3	± 2
750	± 4	± 4	± 3	± 3	± 3	± 3	± 2	± 2
1,000	± 3	± 3	± 3	± 3	± 2	± 2	± 2	± 1
1,500	± 3	± 2	± 2	± 2	± 2	± 2	± 2	± 1
2,000	± 2	± 2	± 2	± 2	± 2	± 2	± 1	± 1
5,000	± 1	± 1	± 1	± 1	± 1	± 1	± 1	± 1
10,000	± 1	± 1	± 1	± 1	± 1	± 1	± 1	$< \pm 1$

Rounding

All results in CSPS reporting products are rounded to the nearest percentage point

Figures (notably percentages) in the CSPS reporting (the highlights reports, reporting tool, query tool) are displayed as whole numbers for the ease of reading. To ensure the figures are as accurate as possible the reports and tools apply rounding to the figures at the last stage of calculation and are rounded to the nearest percentage point. Sometimes this will mean that the figures shown may not be identical if calculations are performed using the figures displayed in the report, however any difference would not be larger than ± 1 percentage point.

For example results of 23.00% to 23.49% are displayed as 23%, while results of 23.50% to 23.99% are displayed as 24%. Therefore if you sum the percentages for all the response options to a question the figure may not sum to 100%, but may sum to 99% or 101%.

In the example shown in Table A if we sum the displayed percentages for strongly agree and agree to calculate the percentage positive response as 47% (18% + 29%), but using the raw figures we calculate the result as 48%.

Similarly when comparing figures between different groups or benchmarks, the difference displayed in reporting may not be identical to that if the difference is calculated using the reported figures.

For example, as shown in Table B, Group E has an engagement index score of 52.952% which rounds to 53% in their report, while Benchmark has a score of 58.495% which rounds to 58%. The difference between these two figures is 5.543, which is rounded to a 6 percentage points difference. However, if the calculation was carried out manually readers would calculate the difference as 5 percentage points (58 minus 53).

Table A: Demonstration of rounding when presenting question results

	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree	Total	Positive responses
Number of responses	103	166	176	96	24	565	269
Percent of responses	18.23%	29.38%	31.15%	16.99%	4.25%	100.00%	47.61%
Figure displayed in reporting	18%	29%	31%	17%	4%	99%	48%

Table B: Demonstration of rounding when calculating differences

	Group E	Benchmark	Difference (Group E - Benchmark)
Engagement Index	52.952%	58.495%	- 5.543
Figure displayed in reporting	53%	58%	- 6

© Crown copyright 2014

You may re-use this information (not including logos) free of charge in any format or medium, under the terms of the Open Government Licence.

To view this licence, visit www.nationalarchives.gov.uk/doc/open-government-licence/ or write to the Information Policy Team, The National Archives, Kew, London TW9 4DU, or email: psi@nationalarchives.gsi.gov.uk.

This document can also be viewed on our website: <http://www.civilservice.gov.uk/about/improving/employee-engagement-in-the-civil-service/people-survey-2013>