

Annex E. 2016 Human Resources Management Composites: Theoretical framework, construction and weighting

Additional notes for Chapter 6: Human Resources Management

Data used in the construction of the composite indexes for Human Resources Management (HRM) are derived from the 2016 OECD Survey on Strategic Human Resource Management (SHRM). Survey respondents were predominantly senior officials in central government HRM departments, and data refer only to HRM practices at the central government level.

The composites presented here, including the variables comprising each index and their relative weights, are based on concepts that reflect contemporary public sector HRM developments and dilemmas on how best to manage human resources in the public sector in the twenty first century (e.g. degree of openness of HRM systems, extent of decentralization, use of performance-based practices) and were reviewed by the OECD's Working Party on Public Employment and Management. In addition, the variables' statistical relevance to the underlying concept was verified using factor analysis¹ and by computing a coefficient of reliability, called Cronbach's alpha².

When making cross-country comparisons, it is important to consider that definitions of the civil services, as well as the organisations governed at the central level of government, may differ across countries. Additionally based on feedback received following previous editions of *Government at a Glance*, there have been minor changes to the composites' methodology in the current 2017 edition. Therefore, direct comparisons to results from the previous edition of the publication are not always possible.

Different techniques to estimate missing values were applied based on the nature of the missing information, including mean replacement, expert judgment and/or eliminating the country from the calculation of the composite indicator.

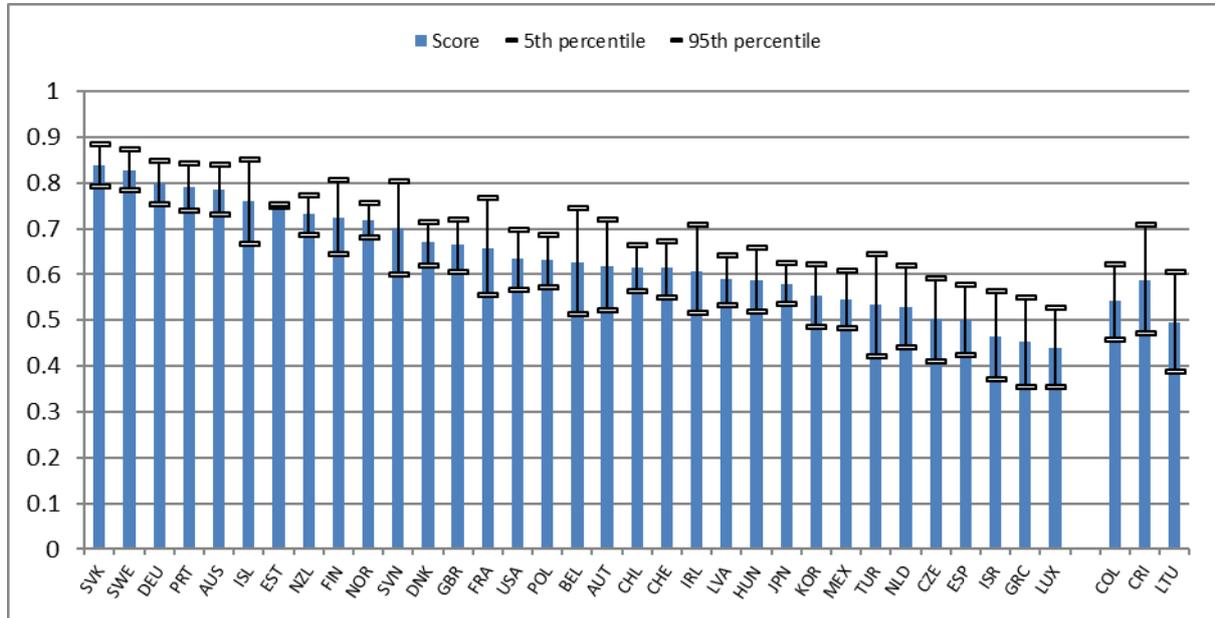
In order to eliminate scale effects, all the variables were normalized between "0" and "1" prior to the final computation of the index. After testing several weighting options (including equal weighting and factor weights), the final indexes were built on equal weights based on expert judgement. Aggregation is based on the linear method, as alternative methods – such as the geometric aggregation – were technically not relevant. Finally, robustness checks based on Monte Carlo simulations were conducted to test the sensitivity of the indexes to different weighting assumptions.

¹ Factor analysis is a statistical check that examines how a set of variables are associated and whether they are correlated with each other. Factor analysis is based on the idea that if there is a significant correlation among the variables that constitute a composite, then no essential insight is lost by reducing this large set of variables into a smaller one (e.g. a composite). From a technical point of view, correlated original variables can be transformed through linear combinations into a new, smaller set of uncorrelated underlying variables that form a composite index. Variables with factor loadings less than 0.3 are statistically insignificant (i.e. not correlated with other variables) and thus not crucial theoretically. Such variables were omitted from the final computation of the index.

² Cronbach's Alpha is a coefficient of reliability based on the correlations between indicators. This statistic is generally used to investigate the degree of correlation among a set of variables and to check the internal reliability of items in a model or survey. A Cronbach's alpha coefficient equal to zero means that the variables are independent (e.g. the selection is not correlated and therefore is statistically not relevant), while a coefficient equal to one means that the variables are perfectly correlated. In general, a coefficient of 0.6 or 0.7 is considered to be an acceptable indication that the variables are measuring the same underlying construct.

1. Extent of delegation of HRM practices in line ministries in central government

Figure E.1 Extent of delegation of HRM practices to line ministries in central government, with sensitivity analysis (2016)



Notes: Figure presents the sensitivity of the index to various weighting assumptions. Index comprised between 0 (no delegation) and 1 (high level of delegation). Cronbach's alpha: 0.769. A Cronbach's alpha close to or above 0.6 indicates a high degree of correlation among a set of variables.

Variables, Weights and Scoring

The following variables have been used in the construction of this index and were given equal weights. The total score is the average of the score of the variables.

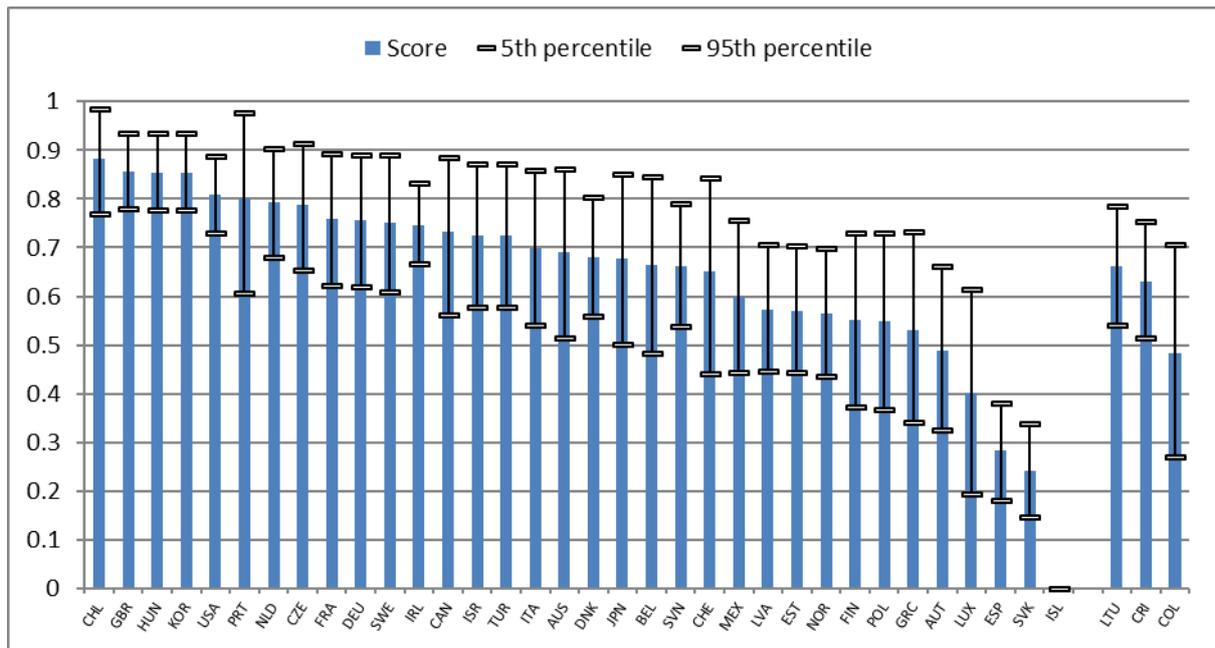
Scores assigned to country responses to questions comprising the delegation index			
Survey question (SHRM 2016 ³)		Scoring and Weight	
Q5 [Q21]	Is there a central agency/department/unit in charge of human resources at central/national/federal government level?	a) Yes: 0.750; b) No: 1.000; c) Not responsible, but a central agency/department aims to coordinate the HR policies across departments: 1.000	20%
Q8 [Q25]	Delegation of establishment (see list below) is primarily determined by: (see options in scoring section). <i>Where are the following issues primarily determined?</i> (1). Numbers and types of posts within organisations; (2). Allocation of budget envelope between payroll and other expenses.	Each sub-question 8(1) and 8(2) was scored as follows: a) Central HRM body (which sets the rules and is closely involved in applying them)/Ministry of Finances: 0.250; b) Central HRM body but with some latitude for ministries/departments/agencies in applying the general principles: 0.500; c) Ministries/ departments/ agencies, within established legal and budgetary limits: 0.750; d) Unit/team level: 1.000 The final score for this question is an average of the scores for 8(1) and 8(2). If more than one	20%

³ Numbers in square brackets refer to the question number in the 2010 SHRM survey

		answer, score is the average of answers provided.	
Q10 [Q28]	Delegation of decisions regarding compensation levels (see list below) is primarily determined by: (see options in scoring section) <i>Where are the following issues primarily determined?</i> (1) General management of pay systems (salary levels, progressions,...) (2) Management of the variable portion of pay – benefits – performance related pay	Each sub-question 10(1) and 10(2) was scored as follows: a) Central HRM body (which sets the rules and is closely involved in applying them)/Ministry of Finances: 0.250; b) Central HRM body but with some latitude for ministries/departments/agencies in applying the general principles: 0.500; c) Ministries/ departments/ agencies, within established legal and budgetary limits: 0.750; d) Unit/team level: 1.000 The final score for this question is an average of the scores for 10(1) and 10(2). If more than one answer, score is the average of answers provided.	20%
Q12 [Q30]	Delegation of decisions regarding position classification, recruitment and dismissals (see list below) is primarily determined by: (see options in scoring section) <i>Where are the following issues primarily determined?</i> (1) Post classification system – grades (2) Original individual recruitment into the civil service (3) Individual recruitment of casual staff (4) Individual duration of employment contract in the civil service (5) Individual duration of contract in specific posts (6) Individual career management (7) Individual dismissal (7a) following lack of performance (7b) following organisational restructuring (7c) following misconduct	Each sub-question 12(1) - 12(7a-c) was scored as follows: a) Central HRM body (which sets the rules and is closely involved in applying them)/Ministry of Finance: 0.250; b) Central HRM body but with some latitude for ministries/departments/agencies in applying the general principles: 0.500; c) Ministries/ departments/ agencies, within established legal and budgetary limits: 0.750; d) Unit/team level: 1.000 The final score for this question is an average of the scores for 12(1) - 12(7a-c). Sub-questions a-c of 12(7) carried equal weight as 12(1) – 12(6); (e.g. no average was taken for sub-questions 7a-c). If more than one answer, score is the average of answers provided.	20%
Q14 [Q32]	Delegation of decisions related to other conditions of employment (see list below) is primarily determined by: (see options in scoring section) <i>Where are the following issues primarily determined?</i> (1) Flexibility of working conditions (numbers of hours, etc.) (2) Adjustments to working conditions (part time, etc.) (3) Performance appraisal systems (4) Code of conduct (5) Ethics, equal opportunity, equity issues	Each sub-question 14(1) - 14(5) was scored as follows: a) Central HRM body (which sets the rules and is closely involved in applying them)/Ministry of Finances: 0.250; b) Central HRM body but with some latitude for ministries/departments/agencies in applying the general principles: 0.500; c) Ministries/ departments/ agencies, within established legal and budgetary limits: 0.750; d) Unit/team level: 1.000 The final score for this question is an average of the scores for 14(1) - 14(5). If more than one answer, score is the average of answers provided.	20%

2. Extent of the use of performance assessments in Human Resources decisions in central government

Figure E.2 Extent of the use of performance assessments in HR decisions in central government, with sensitivity analysis (2016)



Notes: Figure presents the sensitivity of the index to various weighting assumptions. Index comprised between 0 (no use) and 1 (high use). Cronbach's alpha: 0.769. A Cronbach's alpha close to or above 0.6 indicates a high degree of correlation among a set of variables.

Variables, Weights and Scoring

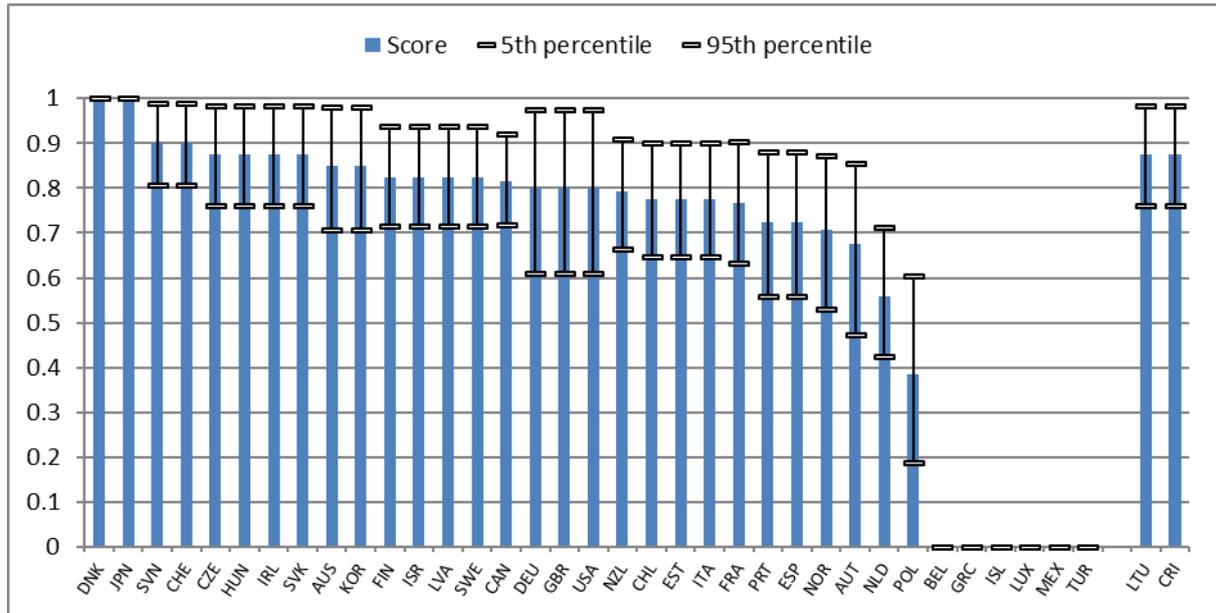
The performance assessment index encompasses the following variables and weights.

Extent of the use of performance assessments in HR decisions in central government			
Survey question		Scoring	
Q49 [Q61]	Is formalized performance assessment mandatory for all government employees?	Yes, for all or almost all: 1.000 No, only for some: 0.500 Not, not used at all: 0.000	25%
Q50 [Q63]	Which tools are used for regular performance assessment and how often are they applied? 1. Meeting w/ immediate superior 2. Written feedback from superior 3. 360 feedback (usually written)	Each sub-question (1-4) was scored as follows: a) every 6 months: 1/3 b) every year: 0.200 c) every two years: 0.100 d) Not used: 0.000 The final score for this question is a sum of the scores for 50-1 to 50-3. If more than one answer, score is the average of answers provided.	25%
Q51 [Q64]	What are the current performance criteria explicitly used in most organisations? 1. Outputs / achievement of objectives 2. Improvement of competencies 3. Values, discipline and inputs 4. Interpersonal/management skills	This is a multiple choice question and respondents were to select all items that applied. Each item selected receives a score of 0.250 and the final score for this question is the sum of all items selected.	25%
Q54 [Q67]	How important, according to legal criteria, is having a good performance assessment with regard to: 1. Career advancement 2. Remuneration (bonuses; the grade does not necessarily change) 3. Contract renewal in the civil service/ remaining in the civil service	Each sub-question (1-4) was scored as follows: High: 0.250 Medium: 0.125 Low and Not applicable: 0.000 The final score for this question is a sum of the scores for 54-1 – 54-4.	25%

	4. Employment contract renewal in the public service		
			100%

3. Extent of the use of performance related pay in central government

Figure E.3 Extent of the use of performance-related pay in central government, with sensitivity analysis (2016)



Notes: Figure presents the sensitivity of the index to various weighting assumptions. Index comprised between 0 (no use) and 1 (high use). Cronbach's alpha: 0.8838. A Cronbach's alpha close to or above 0.6 indicates a high degree of correlation among a set of variables.

Variables, Weights and Scoring

The following variables have been used in the construction of this index, and were given equal weights:

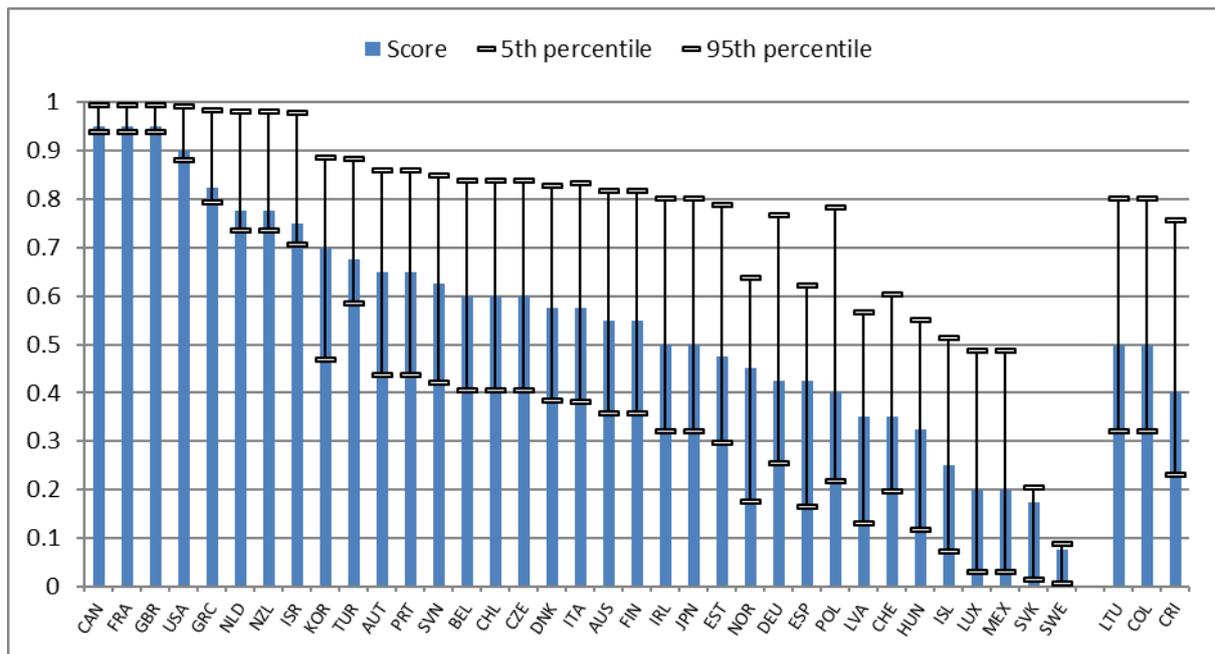
Scores assigned to country responses to questions comprising the performance related pay index		
Survey question (SHRM 2016 ⁴)		Scoring and Weight
Q116 [Q68]	Is performance related pay in use in your country's central government?	Yes: 1.000; No : 0.000 25%
Q116a [Q69]	If yes, for who does performance related pay applies?	Response considers the following options: For most government employees: 1.000 For senior managers only: 2/3 Only for a few central/national/federal government organizations: 1/3 Other: 1/3 25%

⁴ Numbers in square brackets refer to the question number in the 2010 SHRM survey

Q116b [Q70]	Do organizations mostly use: a) One-off performance bonuses b) Performance-based permanent pay increments	Each item selected receives a score of 0.500 and the final score for this question is the sum of the item(s) selected.	25%
Q116c [Q71]	What is the maximum proportion of basic that PRP can represent?	a) 1-5%: 0.2; b) 6-10%: 0.4; c) 11-20%: 0.6; d) 21-40%: 0.8; e) higher: 1	25%

4. Extent of the use of separate human resources management practices for senior civil servants in central government

Fig. E.4 Degree to which senior civil servants are managed by separate HRM policies in central government, with sensitivity analysis (2016)



Notes: Figure presents the sensitivity of the index to various weighting assumptions. Index comprised between 0 (no use) and 1 (high use). Cronbach's alpha: 0.5161. A Cronbach's alpha close to or above 0.6 indicates a high degree of correlation among a set of variables.

Variables, Weights and Scoring

The following items and weights have been used in the construction of this index.

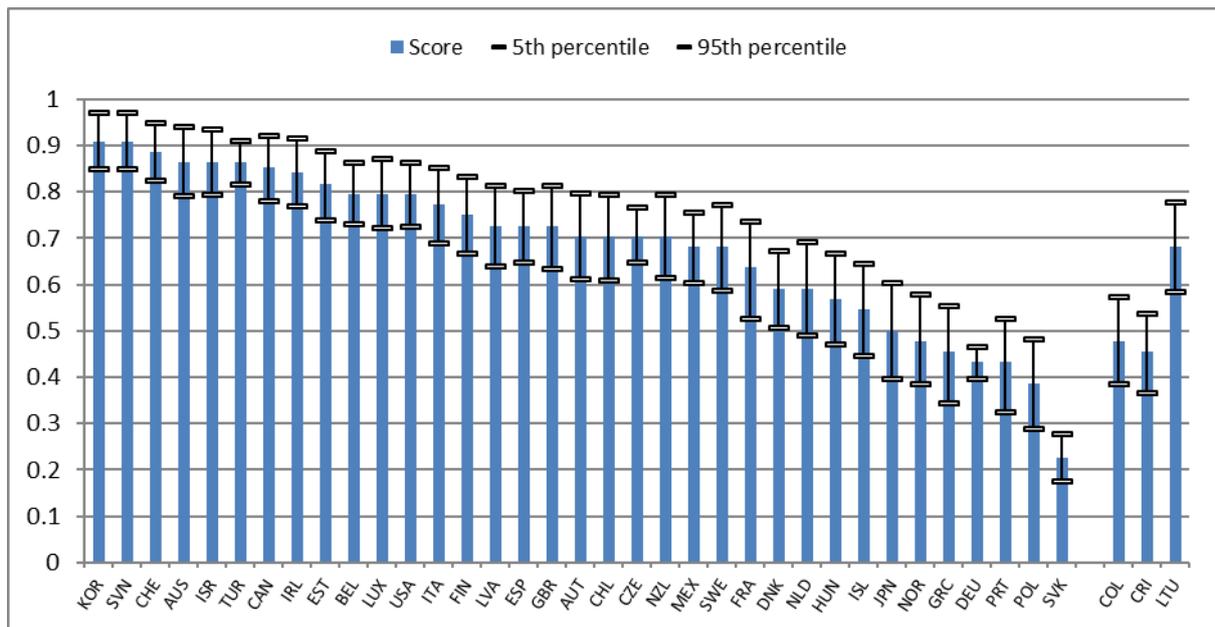
Scores assigned to country responses to questions comprising the senior civil servants index			
Survey question (SHRM 2016 ⁵)		Scoring and Weight	
Q74 [Q.74]	Is there a defined group of staff in central/national/federal government who are widely understood to be the "senior management"?	a) Yes: 1.000; b) No = 0.000	20%
Q77 [Q.82]	Are there policies in place to identify potential senior managers early on in their careers?	a) Yes, they are recruited as part of group selected at entry in the public service or a few years after entry: 1.000; b) Yes, potential leadership is systematically identified in performance assessments and staff career are managed accordingly: 1.000; c) No: 0.000	20%
Q82 [Q.84]	Is there a centrally defined skills profile for senior managers?	a) Yes: 1.000; b) Yes, but it only applies to some organizations: 0.500; c) No	20%

⁵ Numbers in square brackets refer to the question number in the 2010 SHRM survey

Q85 [Q85]	How different is the employment framework of senior managers from that of regular staff?	<p>This is a multiple choice question and respondents were to select all items that applied. Each item selected from the list below receives a score (the values of which are shown below) and the final score is a sum of all items selected.</p> <p>85a. Recruited with a more centralised process: 0.125 85b. More attention is paid to the management of their careers: 0.250 85c. More emphasis on the management of their performance: 0.500 85d. More emphasis on avoiding conflicts of interest: 0.125 85e. Pay that is not basic salary and not PRP is higher than for regular staff (ex. Guaranteed benefits): 0.250 85f. The part of their pay that is performance-related is higher: 0.500 85h. Appointment is shorter than for regular staff: 0.250</p>	40%
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5. Collection and availability of administrative human resources data in central government

Fig. E.5 Degree to which administrative human resources (HR) data is collected and made available by the central government, with sensitivity analysis (2016)



Notes: Figure presents the sensitivity of the index to various weighting assumptions. Index comprised between 0 (no use) and 1 (high use). Cronbach’s alpha: 0.8124. A Cronbach’s alpha close to or above 0.6 indicates a high degree of correlation among a set of variables.

Variables, Weights and Scoring

The following items and weights have been used in the construction of this index.

Scores assigned to country responses to questions comprising the collection and availability of administrative HR data index	
Survey question (SHRM 2016)	Scoring and Weight

Q17	<p>For each of the following categories, please indicate whether standardized administrative data records exist at the Central/federal level?</p> <ul style="list-style-type: none"> a. Number of employees b. Level (e.g. grade, junior/senior, etc.) c. Function (e.g. profession) d. Age e. Gender f. Disabilities g. Other minority status h. Level of education i. Length of service j. Languages spoken k. Type of contract (e.g. Civil Servant vs. Other) l. Union membership m. Part time n. Other flexible working arrangements o. Total Sick days used p. Training days used q. Special leave used r. Mobility within the civil service s. Total exit (turnover) data t. Retirements u. Resignations v. Dismissals 	<p>Responses to individual variables consider the following options:</p> <p>Yes, standardized data records are available and are centralised for the whole or most of the national/federal civil service: 1.000</p> <p>Yes, however standardized data records only exist at line ministry level (not aggregated centrally): 0.500</p> <p>No, currently no standardized administrative data record exists: 0.000</p>	100%
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