

Supplementary materials to

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This material includes tables and figures that supplement the conclusions in the main text. Reference to each table and graph is provided in the main text. Tables and figures contain abbreviations used in the main text: Co-operative financial institutions – CFIs, employee voice – EV, co-operative values and principles – CVP, multilevel modelling – MLM.



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Table S1. Results of quick literature review

	employee voice	worker voice	employee participation	worker participation	employee empowerment	worker empowerment	employee involvement	worker involvement
cooperative financial institution*	0	0	4	4	1	1	1	2
co-operative financial institution*	0	0	0	0	0	0	0	0
cooperative bank*	1	0	3	4	0	2	1	2
co-operative bank*	0	0	0	0	0	0	0	0
credit union*	3	1	0	5	0	1	5	1
credit cooperative*	0	0	4	5	0	2	1	1
credit co-operative*	0	0	0	2	0	0	0	0
savings cooperative*	0	0	6	7	0	2	1	0
savings co-operative*	0	0	0	1	0	0	0	0
“building society”	1	0	0	0	0	0	0	0
“building societies”	1	0	1	0	0	0	0	0

Note: We conducted a quick literature review on 23.02.2023 using Web of Science Core Collection. We searched titles, abstracts and keywords. The table presents the number of articles obtained for each phrase combination. In the case of building societies, we narrowed the search to the full phrase, otherwise we were getting many irrelevant results.

Source: own elaboration

Table S2. Statements regarding perceived employer orientation towards the co-operative values and principles in the employee questionnaire

<p><i>In this section we would like to ask you about values and principles important in your organisation.</i></p> <p><i>Below you will find a description of a set of certain values and principles.</i></p> <p>VALUES:</p> <p><i>The values of self-help, self-responsibility, democracy, equality, equity and solidarity are the foundation of the organisation. Managers, employees and customers believe in the ethical values of honesty, openness, social responsibility and caring for others.</i></p> <p>PRINCIPLES:</p> <p><i>The organisation is a democratic entity controlled by its members, open to all persons able to use its services. The organisation supports its members and employees and works for the sustainable development of its community.</i></p> <p><i>With reference to the description above, please respond to the following statements.</i></p>
These values are very important in our organisation
Our organisation works according to these principles

Note: Simplified description of co-operative values and principles adapted from ‘Guidance Notes to the Co-operative Principles’ (International Co-operative Alliance, 2015).

Source: own elaboration

Table S3. Fit statistics and model comparison statistics for four alternative models in confirmatory factor analysis

Model	Chi-square (Swain corrected chi-square)	df	P (p of Swain corrected chi-square)	RMSEA (Swain-corrected RMSEA)	CFI (Swain- corrected CFI)	SRMR
1. Four variables (maximum likelihood)	110.63 (107.82)	48	0.000 (0.000)	0.080 (0.078)	0.948 (0.950)	0.073
2. Three variables (maximum likelihood)	151.50 (147.71)	51	0.000 (0.000)	0.099 (0.097)	0.916 (0.919)	0.080
3. Four variables (quasimaximum likelihood)	100.55 (97.99)	48	0.000 (0.000)	0.074 (0.072)	0.948 (0.951)	0.073
4. Three variables (quasimaximum likelihood)	136.61 (133.19)	51	0.000 (0.000)	0.091 (0.089)	0.916 (0.919)	0.080

Note: N=203. For each model, we used two estimation methods: maximum likelihood and quasimaximum likelihood (with Satorra–Bentler scaled Chi-2 test) since the Doornik–Hansen test rejected the null hypothesis of multivariate normality (test statistics = 365.432, $p < 0.001$). The likelihood ratio Chi-square statistic comparing Model 1 and 2 reached the value of 40.87 with $p < 0.001$. Taking into account the better fit statistics of Model 1 compared to Model 2, this result indicates that a model with 4 variables (see Figure S1) should be preferred to a model with 3 variables (see Figure S2) (i.e. the two types of EV should be analysed separately).

Source: own elaboration

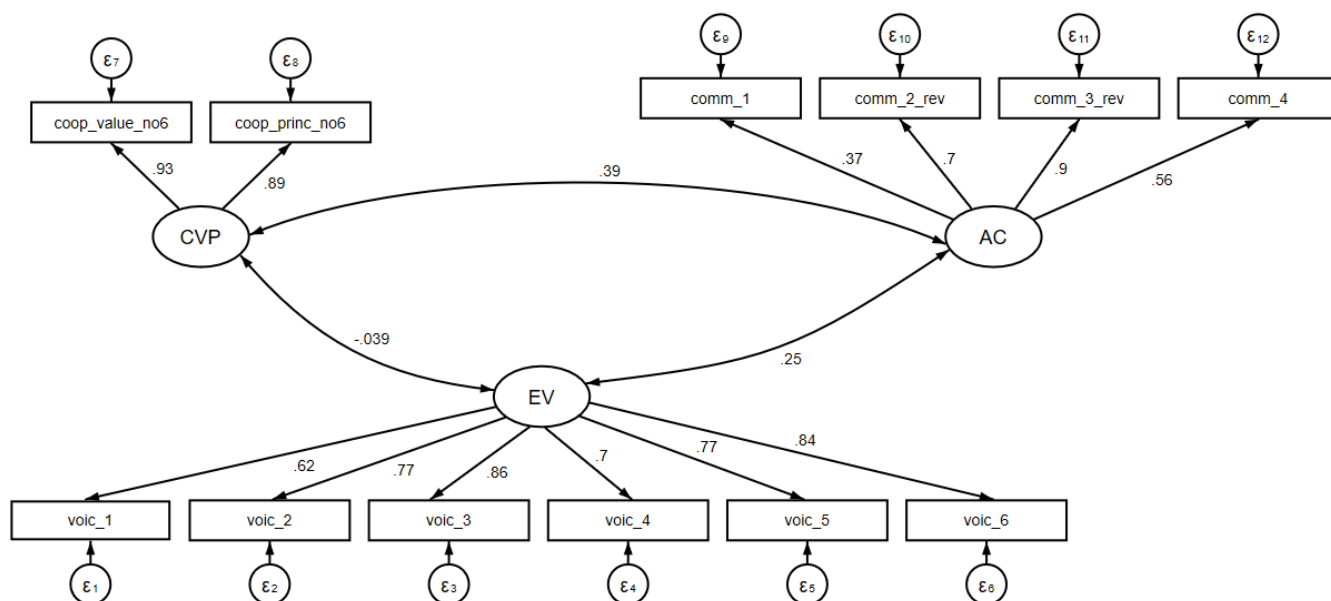


Figure S1. Standardised confirmatory factor analysis results: Three variables - maximum likelihood method

Note: CVP - Perceived employer orientation towards co-operative values and principles; AC - Affective commitment; EV - Employee voice
Source: own elaboration

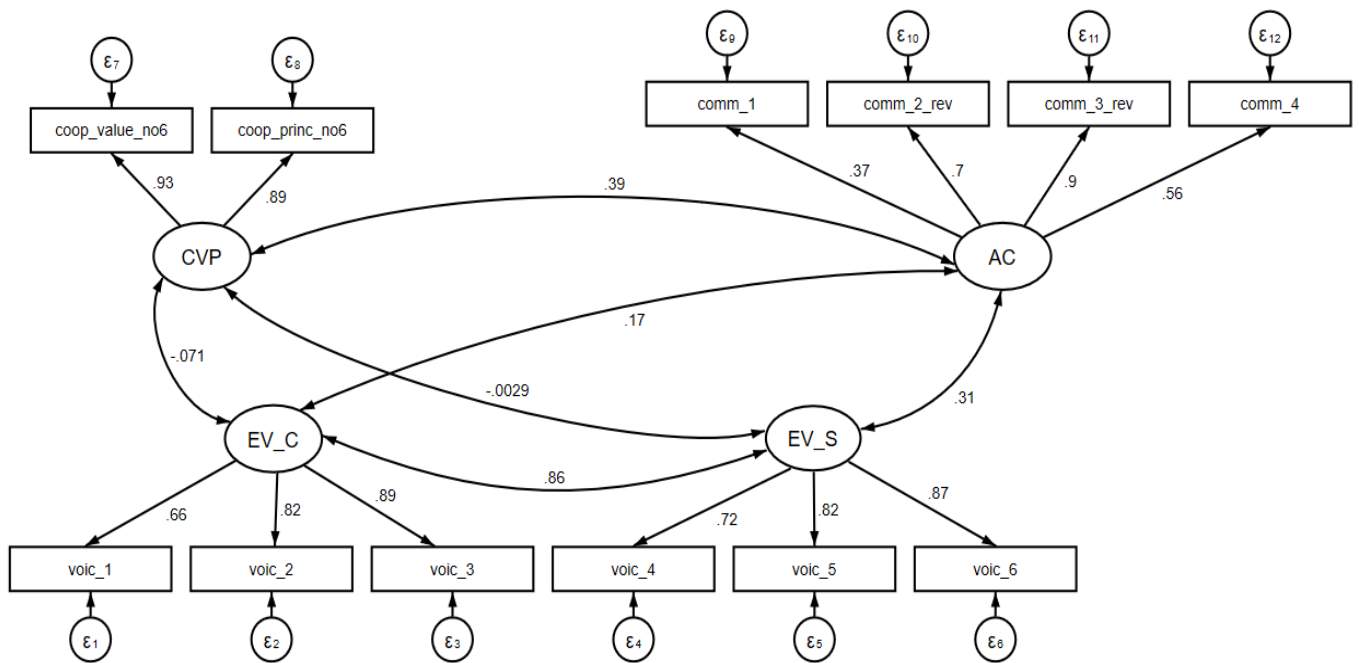


Figure S2. Standardised confirmatory factor analysis results: Four variables - maximum likelihood method

Note: CVP - Perceived employer orientation towards co-operative values and principles; AC - Affective commitment; EV_C - Challenging employee voice; EV_S - Supportive employee voice

Source: own elaboration

Table S4. Means, standard deviations and correlations among the study variables

Variable	M	SD	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
(1) Affective Commitment	3.88	0.83									
(2) Organisational tenure	3.03	1.33	0.051								
(3) Education	0.63	0.48	0.068	-0.102							
(4) Managerial position	0.35	0.48	0.259**	0.067	0.278**						
(5) Shares ownership	0.49	0.50	0.092	0.348**	-0.054	0.261**					
(6) Company size	88.30	33.37	-0.085	0.068	-0.059	-0.036	-0.163*				
(7) Challenging Voice	3.34	0.85	0.136	0.038	0.160*	0.207**	-0.050	0.083			
(8) Supportive Voice	3.53	0.91	0.258**	-0.092	0.150*	0.369**	0.050	-0.004	0.714**		
(9) Job type	0.35	0.48	-0.204**	-0.081	-0.330**	-0.152*	0.115	0.123	-0.008	0.000	
(10) Perceived employer CVP orientation	4.57	0.68	0.367**	0.004	-0.043	0.101	0.152*	-0.066	-0.081	-0.036	-0.069

Note: * $p < 0.05$; ** $p < 0.01$, M – Mean, SD – standard deviation, $N = 172$ (Only observations without any missing data were included in the correlation analysis)

Variables:

Dummy coded: Education (0 = GCSE, NVQ, A-levels or equivalent, 1 = Degree level or equivalent, Post-graduate qualification or higher, Professional qualifications); Managerial position (0 = no, 1 = yes); Shares ownership (0 = no, 1 = yes); Job type (0 = back-office, 1 = front-office)

Category coded: Organisational tenure (1 = A year or less, 2 = More than 1 year - 3 years, 3 = More than 3 years - 5 years, 4 = More than 5 years - 10 years, 5 = More than 10 years)

Continuous variables: Affective Commitment (min. 1, max. 5); Company size (min. 38, max. 159); Challenging Voice (min. 1, max. 5); Supportive Voice (min. 1, max. 5); Perceived employer CVP orientation (min. 1, max. 5)

Source: own elaboration

Table S5. Multilevel modelling results: Challenging employee voice (random intercept models)

Variable	Model 1-S5		Model 2-S5		Model 3-S5	
	Coef.	p	Coef.	p	Coef.	p
Organisational tenure	0.020	(0.679)	0.026	(0.573)	0.008	(0.861)
Education	-0.085	(0.520)	-0.096	(0.461)	-0.041	(0.756)
Managerial position	0.323	(0.017)	0.375	(0.005)	0.286	(0.034)
Shares ownership	-0.063	(0.647)	-0.045	(0.738)	-0.077	(0.571)
Company size	-0.002	(0.499)	-0.002	(0.435)	-0.002	(0.481)
Challenging EV (grand-mean centred)	0.154	(0.033)	0.121	(0.090)	0.276	(0.003)
Perceived employer CVP orientation (grand-mean centred)	0.404	(0.000)	0.469	(0.000)	0.381	(0.000)
Customer-facing job	-0.288	(0.032)	-0.319	(0.016)	-0.259	(0.052)
Perceived employer CVP orientation (grand-mean-centred)*Challenging EV (grand-mean centred)			-0.208	(0.005)		
Customer-facing job*Challenging EV (grand-mean centred)					-0.302	(0.035)
Intercept	4.013	(0.000)	3.987	(0.000)	4.035	(0.000)
Log-restricted likelihood	-205.552		-203.199		-204.322	
Between-company variance (level 2)	0.022		0.013		0.022	
Within-company between-employee variance (level 1)	0.537		0.518		0.526	

Note: Number of organisations in each model – 8. Number of employees in each model – 172. Description of the variables provided with Table S4. The models were compared with the models in Table 1 (in the main text).

Source: own elaboration

Table S6. Multilevel modelling results: Supportive employee voice (random slope models)

Variable	Model 1-S6		Model 2-S6		Model 3-S6	
	Coef.	p	Coef.	p	Coef.	p
Organisational tenure	0.047	(0.318)	0.048	(0.302)	0.044	(0.353)
Education	-0.090	(0.479)	-0.098	(0.440)	-0.073	(0.571)
Managerial position	0.235	(0.086)	0.261	(0.057)	0.222	(0.108)
Shares ownership	-0.079	(0.564)	-0.058	(0.667)	-0.092	(0.503)
Company size	-0.001	(0.820)	-0.001	(0.705)	-0.001	(0.781)
Supportive EV (grand-mean centred)	0.224	(0.042)	0.212	(0.038)	0.265	(0.023)
Perceived employer CVP orientation (grand-mean centred)	0.391	(0.000)	0.455	(0.000)	0.382	(0.000)
Customer-facing job	-0.336	(0.012)	-0.366	(0.006)	-0.322	(0.016)
Perceived employer CVP orientation (grand-mean centred)*Supportive EV (grand-mean centred)			-0.177	(0.048)		
Customer-facing job*Supportive EV (grand-mean centred)					-0.110	(0.423)
Intercept	3.898	(0.000)	3.919	(0.000)	3.915	(0.000)
Log-restricted likelihood	-201.976		-201.417		-202.744	
Slope variance	0.025		0.016		0.021	
Intercept variance	0.027		0.020		0.027	
Covariance between random intercepts and slopes	-0.022		-0.014		-0.019	
Residual variance	0.496		0.491		0.498	

Note: Number of organisations in each model – 8. Number of employees in each model – 173. Description of the variables provided with Table S4. The models were compared with the models in Table 2 (in the main text).

Source: own elaboration

Robustness check

To test the robustness of our results, we first performed MLM with group-mean centring for both EV measures and perceived employer CVP orientation. Next, we calculated several single-level linear regressions. We then conducted the MLM with an additional control variable describing the significance of the organisation's values and principles at the time of the employee's hiring (exact statement: 'When I chose to work for this organisation I was very much guided by its principles and values'; 1 = strongly disagree, 5 = strongly agree). Since we used tenure as a control variable, we believe that the risk of time influence (e.g. that employees forgot what their original motives were or that their feelings towards their employer had changed) was minimal. To clearly distinguish between those who were guided by the values or principles declared by the employer and those who were not, we recoded this variable by assigning '1' only to those who indicated they were at least somewhat guided by these values and principles ('Slightly agree' or 'Strongly agree') and '0' to all the other responses. We also excluded 10 respondents who did not remember whether they were guided by these values and principles or not.

Results for models with group-mean centred variables are very similar to those presented in the main text (compare Tables 1 and 2 with Tables S7 and S8).

Results of the several single-level linear regressions (Tables S9 and S10) are also very similar those presented in the article. The only noticeable difference occurred in the interaction between challenging EV and job type (Table S9, Model 3-S9) which appeared to be significant, similarly to the random intercept model (Table S5, Model 3-S5).

Results of the analyses including the additional variable are also similar to those presented in the article. The only difference was in the interaction between challenging EV and employer orientation to CVP, which was found to be slightly above the usual threshold ($p = 0.067$) (Table S11, Model 2-S11).

Table S7. Multilevel modelling results: Challenging employee voice (group-mean centred variables, random slope models)

Variable	Model 1-S7		Model 2-S7		Model 3-S7	
	Coef.	<i>p</i>	Coef.	<i>p</i>	Coef.	<i>p</i>
Organisational tenure	0.037	(0.426)	0.038	(0.402)	0.030	(0.521)
Education	-0.100	(0.431)	-0.115	(0.359)	-0.061	(0.634)
Managerial position	0.362	(0.006)	0.397	(0.003)	0.324	(0.015)
Shares ownership	-0.054	(0.688)	-0.046	(0.730)	-0.076	(0.570)
Company size	-0.001	(0.760)	-0.001	(0.711)	-0.001	(0.706)
Challenging EV (group-mean centred)	0.155	(0.310)	0.125	(0.387)	0.267	(0.101)
Perceived employer CVP orientation (group-mean centred)	0.370	(0.000)	0.429	(0.000)	0.357	(0.000)
Customer-facing job	-0.366	(0.006)	-0.381	(0.004)	-0.330	(0.013)
Perceived employer CVP orientation (group-mean centred)*Challenging EV (group-mean centred)			-0.176	(0.029)		
Customer-facing job*Challenging EV (group-mean centred)					-0.277	(0.080)
Intercept	3.906	(0.000)	3.912	(0.000)	3.927	(0.000)
Log-restricted likelihood	-201.316		-200.437		-200.654	
Slope variance	0.111		0.097		0.090	
Intercept variance	0.043		0.038		0.035	
Covariance between random intercepts and slopes	-0.063		-0.057		-0.046	
Residual variance	0.486		0.476		0.480	

Note: Number of organisations in each model – 8. Number of employees in each model – 172. Description of the variables provided with Table S4. The models were compared with the models in Table 1 (in the main text).

Source: own elaboration

Table S8. Multilevel modelling results: Supportive employee voice (group-mean centred variables, random intercept models)

Variable	Model 1-S8		Model 2-S8		Model 3-S8	
	Coef.	<i>p</i>	Coef.	<i>p</i>	Coef.	<i>p</i>
Organisational tenure	0.041	(0.377)	0.043	(0.356)	0.036	(0.445)
Education	-0.083	(0.518)	-0.095	(0.456)	-0.057	(0.661)
Managerial position	0.216	(0.116)	0.248	(0.071)	0.190	(0.169)
Shares ownership	-0.088	(0.514)	-0.071	(0.595)	-0.099	(0.463)
Company size	-0.002	(0.384)	-0.002	(0.363)	-0.002	(0.350)
Supportive EV (group-mean centred)	0.235	(0.001)	0.222	(0.001)	0.311	(0.000)
Perceived employer CVP orientation (group-mean centred)	0.406	(0.000)	0.460	(0.000)	0.387	(0.000)
Customer-facing job	-0.304	(0.020)	-0.339	(0.010)	-0.285	(0.030)
Perceived employer CVP orientation (group-mean centred)*Supportive EV (group-mean centred)			-0.173	(0.051)		
Customer-facing job*Supportive EV (group-mean centred)					-0.201	(0.143)
Intercept	4.047	(0.000)	4.041	(0.000)	4.067	(0.000)
Log-restricted likelihood	-203.330		-202.920		-203.317	
Between-company variance (level 2)	0.027		0.023		0.023	
Within-company between-employee variance (level 1)	0.513		0.506		0.511	

Note: Number of organisations in each model – 8. Number of employees in each model – 173. Description of the variables provided with Table S4. The models were compared with the models in Table 2 (in the main text).

Source: own elaboration

Table S9. Single-level regression results: Challenging employee voice

Variable	Model 1-S9		Model 2-S9		Model 3-S9	
	Coef.	<i>p</i>	Coef.	<i>p</i>	Coef.	<i>p</i>
Organisational tenure	0.012	(0.804)	0.022	(0.643)	0.001	(0.991)
Education	-0.071	(0.591)	-0.085	(0.510)	-0.024	(0.854)
Managerial position	0.312	(0.021)	0.373	(0.005)	0.277	(0.039)
Shares ownership	0.000	(0.998)	-0.005	(0.968)	-0.015	(0.908)
Company size	-0.001	(0.476)	-0.001	(0.394)	-0.001	(0.478)
Challenging EV (grand-mean centred)	0.132	(0.061)	0.105	(0.129)	0.252	(0.006)
Perceived employer CVP orientation (grand-mean centred)	0.417	(0.000)	0.478	(0.000)	0.391	(0.000)
Customer-facing job	-0.272	(0.041)	-0.308	(0.018)	-0.242	(0.067)
Perceived employer CVP orientation (grand-mean centred)*Challenging EV (grand-mean centred)			-0.218	(0.003)		
Customer-facing job*Challenging EV (grand-mean centred)					-0.299	(0.036)
Intercept	3.971	(0.000)	3.955	(0.000)	3.982	(0.000)
<i>F</i>	5.95	(0.000)	6.57	(0.000)	5.90	(0.000)
Adjusted <i>R</i> -squared	0.188		0.227		0.205	

Note: Number of employees in each model – 172. Description of the variables provided with Table S4. The models were compared with the models in Table 1 (in the main text).

Source: own elaboration

Table S10. Single-level regression results: Supportive employee voice

Variable	Model 1-S10		Model 2-S10		Model 3-S10	
	Coef.	<i>p</i>	Coef.	<i>p</i>	Coef.	<i>p</i>
Organisational tenure	0.033	(0.478)	0.039	(0.393)	0.029	(0.529)
Education	-0.065	(0.612)	-0.078	(0.539)	-0.044	(0.732)
Managerial position	0.205	(0.134)	0.247	(0.070)	0.190	(0.167)
Shares ownership	-0.020	(0.877)	-0.005	(0.967)	-0.036	(0.781)
Company size	-0.001	(0.518)	-0.001	(0.523)	-0.001	(0.508)
Supportive EV (grand-mean centred)	0.216	(0.002)	0.205	(0.002)	0.270	(0.001)
Perceived employer CVP orientation (grand-mean centred)	0.425	(0.000)	0.487	(0.000)	0.409	(0.000)
Customer-facing job	-0.278	(0.032)	-0.328	(0.012)	-0.266	(0.041)
Perceived employer CVP orientation (grand-mean centred)*Supportive EV (grand-mean centred)			-0.206	(0.015)		
Customer-facing job*Supportive EV (grand-mean centred)					-0.147	(0.280)
Intercept	3.939	(0.000)	3.917	(0.000)	3.949	(0.000)
<i>F</i>	7.06	(0.000)	7.14	(0.000)	6.41	(0.000)
Adjusted <i>R</i> -squared	0.220		0.243		0.221	

Note: Number of employees in each model – 173. Description of the variables provided with Table S4. The models were compared with the models in Table 2 (in the main text).

Source: own elaboration

Table S11. Multilevel modelling results: Challenging employee voice (with additional control variable, random slope models)

Variable	Model 1-S11		Model 2-S11		Model 3-S11	
	Coef.	<i>p</i>	Coef.	<i>p</i>	Coef.	<i>p</i>
Organisational tenure	0.038	(0.426)	0.041	(0.386)	0.030	(0.532)
Education	-0.117	(0.364)	-0.118	(0.359)	-0.089	(0.492)
Managerial position	0.350	(0.009)	0.381	(0.005)	0.305	(0.024)
Shares ownership	-0.052	(0.704)	-0.048	(0.725)	-0.068	(0.618)
Company size	-0.000	(0.933)	-0.000	(0.879)	-0.001	(0.839)
Challenging EV (grand-mean centred)	0.126	(0.417)	0.094	(0.512)	0.229	(0.152)
Perceived employer CVP orientation (grand-mean centred)	0.308	(0.001)	0.369	(0.000)	0.303	(0.001)
Customer-facing job	-0.359	(0.008)	-0.364	(0.007)	-0.337	(0.012)
Importance of organisational values and principles	0.255	(0.059)	0.238	(0.078)	0.253	(0.060)
Perceived employer CVP orientation (grand-mean centred)*Challenging EV (grand-mean centred)			-0.143	(0.067)		
Customer-facing job*Challenging EV (grand-mean centred)					-0.223	(0.126)
Intercept	3.676	(0.000)	3.683	(0.000)	3.721	(0.000)
Log-restricted likelihood	-194.231		-194.143		-194.124	
Slope variance	0.118		0.093		0.090	
Intercept variance	0.031		0.024		0.028	
Covariance between random intercepts and slopes	-0.055		-0.044		-0.037	
Residual variance	0.479		0.476		0.476	

Note: Number of organisations in each model – 8. Number of employees in each model – 172. Description of the variables provided with Table S4. *Importance of organisational values and principles* - ‘When I chose to work for this organisation I was very much guided by its principles and values’. The models were compared with the models in Table 1 (in the main text).

Source: own elaboration

Table S12. Multilevel modelling results: Supportive employee voice (with additional control variable, random intercept models)

Variable	Model 1-S12		Model 2-S12		Model 3-S12	
	Coef.	<i>p</i>	Coef.	<i>p</i>	Coef.	<i>p</i>
Organisational tenure	0.038	(0.432)	0.042	(0.377)	0.034	(0.480)
Education	-0.106	(0.420)	-0.108	(0.405)	-0.092	(0.489)
Managerial position	0.203	(0.145)	0.240	(0.086)	0.189	(0.179)
Shares ownership	-0.077	(0.573)	-0.049	(0.718)	-0.086	(0.533)
Company size	-0.001	(0.641)	-0.001	(0.653)	-0.001	(0.621)
Supportive EV (grand-mean centred)	0.221	(0.002)	0.208	(0.003)	0.260	(0.003)
Perceived employer CVP orientation (grand-mean centred)	0.365	(0.000)	0.428	(0.000)	0.356	(0.000)
Customer-facing job	-0.311	(0.019)	-0.351	(0.009)	-0.301	(0.024)
Importance of organisational values and principles	0.237	(0.082)	0.211	(0.122)	0.225	(0.101)
Perceived employer CVP orientation (grand-mean centred)*Supportive EV (grand-mean centred)			-0.171	(0.048)		
Customer-facing job*Supportive EV (grand-mean centred)					-0.104	(0.459)
Intercept	3.803	(0.000)	3.788	(0.000)	3.826	(0.000)
Log-restricted likelihood	-196.351		-195.914		-197.129	
Between-company variance (level 2)	0.019		0.012		0.019	
Within-company between-employee variance (level 1)	0.511		0.504		0.512	

Note: Number of organisations in each model – 8. Number of employees in each model – 173. Description of the variables provided with Table S4. *Importance of organisational values and principles* - ‘When I chose to work for this organisation I was very much guided by its principles and values’. The models were compared with the models in Table 2 (in the main text).

Source: own elaboration