

Councils of contentment: Works councils and income perceptions

Laszlo Goerke* Sven A. Hartmann[†] Yue Huang[‡]

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Online appendix

*Trier University, Institute for Labour Law and Industrial Relations in the European Union, Campus II, D-54286 Trier, Germany, IZA@LISER, CESifo, and GLO, goerke@iaaeu.de.

[†]Institute for Labour Law and Industrial Relations in the European Union, Trier University, Campus II, D-54286 Trier, Germany, hartmann@iaaeu.de.

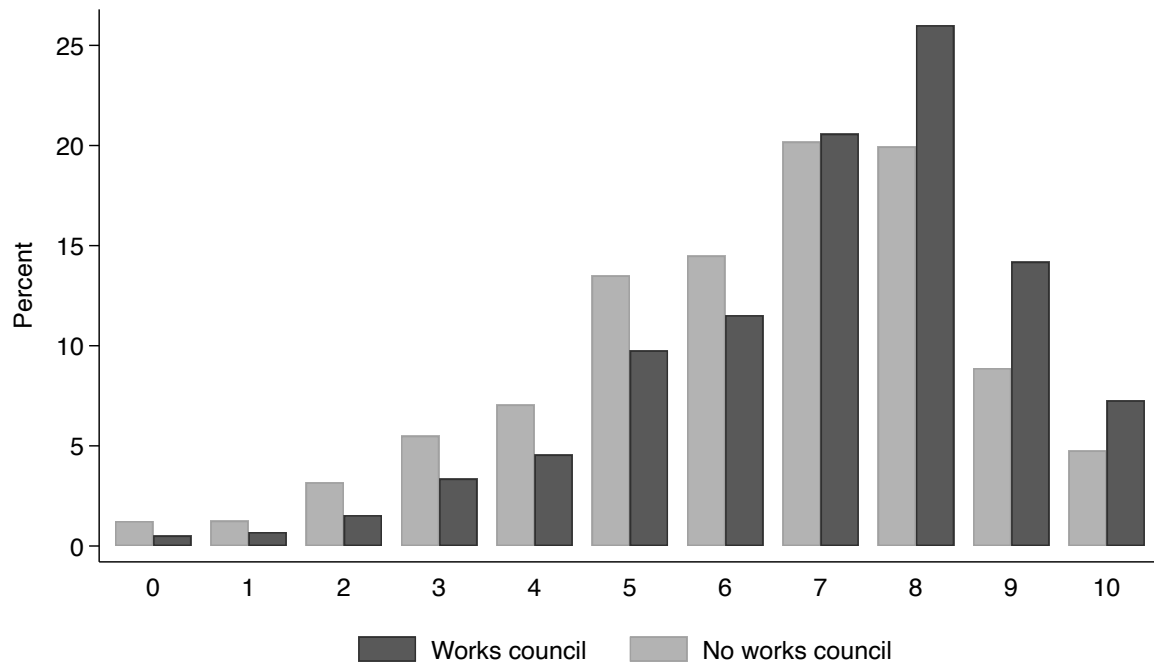
[‡]Institute for Labour Law and Industrial Relations in the European Union, Trier University, Campus II, D-54286 Trier, Germany, and GLO, huang@iaaeu.de.

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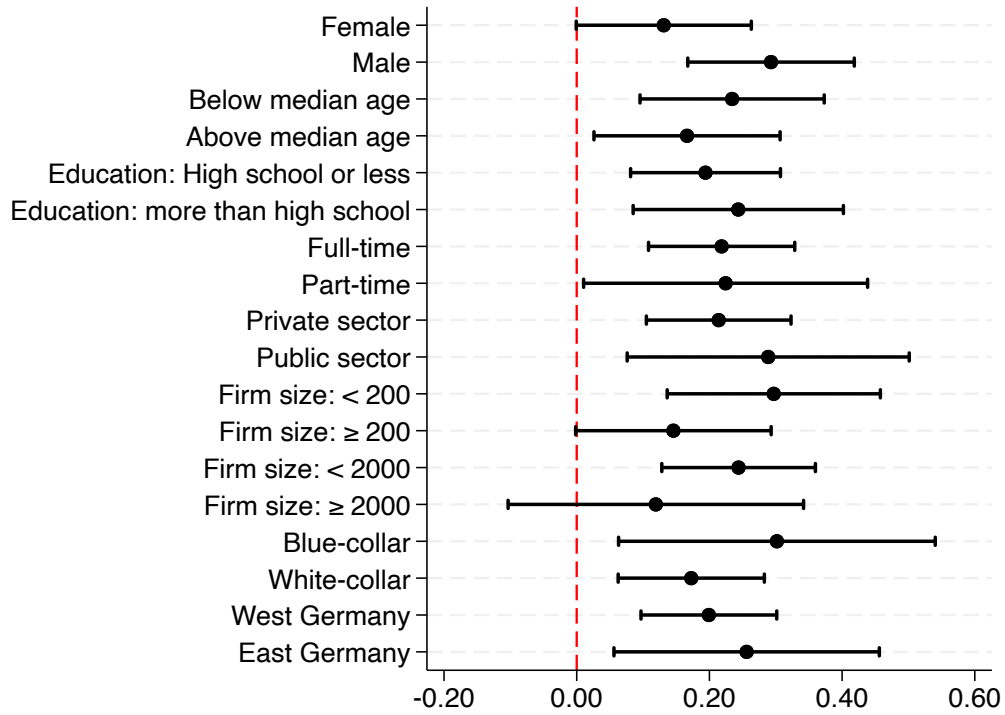
A Additional Figures and Tables

Figure A.1: Distribution of income satisfaction



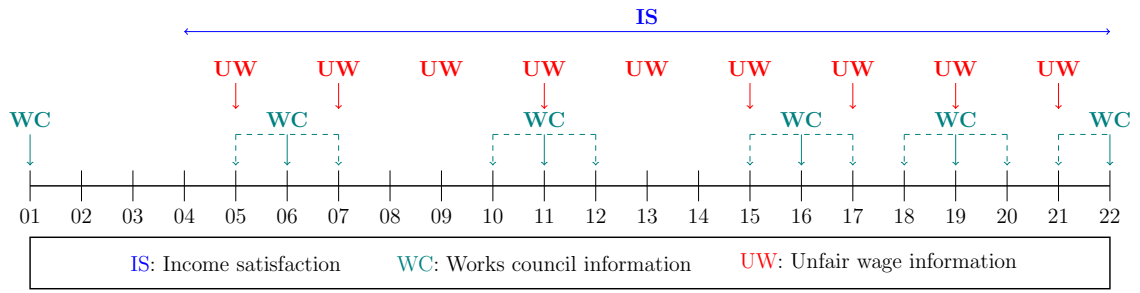
Notes: Data source: SOEP v39 (2022). Survey years: 2006, 2011, 2016, 2019, and 2022.

Figure A.2: Effect heterogeneity



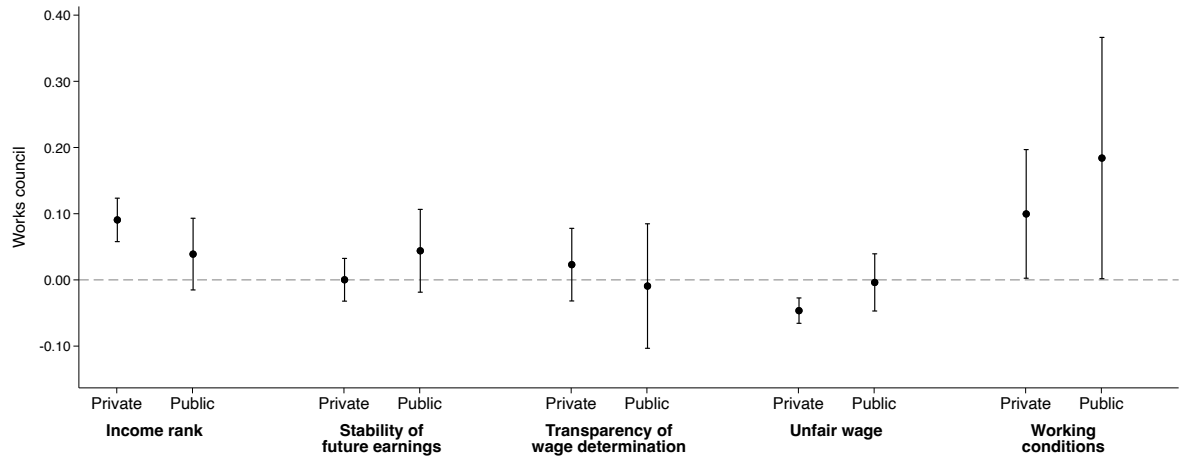
Notes: This figure shows the relationship between working in an establishment with a works council and income satisfaction across different subsamples. Each row is based on a separate linear FE regression containing the set of covariates used in specification (8) in Table 2. A complete list of these variables is provided in Table A.1 in Appendix A. The confidence intervals shown are set at the 95 % level of statistical significance. Data source: SOEP v39 (2022). Survey years: 2006, 2011, 2016, 2019, and 2022.

Figure A.3: Imputation of works council information



Notes: Information on income satisfaction has been available every year since 2004. Without imputation, we only have information on works councils and perceptions of unfair pay in two waves, 2011 and 2019. To use more survey waves, we transfer the works council information from year t to $t - 1$ and $t + 1$, marked by the dashed lines, and make sure that no job changes take place in the meantime.

Figure A.4: Channels: Private vs. public sector



Notes: This figure illustrates the relationship between the channel variables and employment in an establishment with a works council. Each row is based on a separate linear FE regression containing the set of covariates used in specification (8) in Table 2, except for the dummy variable indicating employment in the public sector. A complete list of these variables is provided in Table A.1 in Appendix A. The confidence intervals shown are set at the 90 % level of statistical significance. Data source: SOEP v39 (2022).

Table A.1: Works councils and income satisfaction: Full table

<i>Dep. variable:</i>	Income satisfaction							
	(1) OLS	(2) OLS	(3) OLS	(4) OLS	(5) FE	(6) FE	(7) FE	(8) FE
Works council	0.691*** (0.025)	0.558*** (0.024)	0.242*** (0.030)	0.217*** (0.030)	0.265*** (0.045)	0.267*** (0.045)	0.224*** (0.046)	0.215*** (0.046)
Female		-0.261*** (0.024)	0.099*** (0.028)	0.111*** (0.029)				
Age		-0.008 (0.008)	-0.076*** (0.009)	-0.075*** (0.009)		0.050*** (0.016)	-0.012 (0.018)	-0.011 (0.018)
Age ²		0.000 (0.000)	0.001*** (0.000)	0.001*** (0.000)		-0.000 (0.000)	0.000** (0.000)	0.000** (0.000)
Migration background: Direct		-0.079** (0.034)	-0.076** (0.033)	-0.073** (0.033)				
Migration background: Indirect		-0.065 (0.053)	-0.022 (0.051)	-0.015 (0.051)				
Years of education		0.139*** (0.004)	0.032*** (0.006)	0.031*** (0.006)		0.083* (0.046)	-0.071 (0.049)	-0.072 (0.049)
Single		-0.175*** (0.036)	-0.117*** (0.033)	-0.114*** (0.033)		0.018 (0.076)	-0.018 (0.074)	-0.015 (0.074)
Divorced		-0.343*** (0.043)	-0.307*** (0.041)	-0.304*** (0.041)		0.029 (0.069)	0.007 (0.069)	0.006 (0.069)
Widowed		0.042 (0.098)	0.140 (0.092)	0.139 (0.092)		-0.154 (0.228)	-0.143 (0.224)	-0.152 (0.224)
Number of children		-0.035*** (0.013)	-0.009 (0.013)	-0.010 (0.013)		-0.061*** (0.023)	-0.023 (0.023)	-0.024 (0.023)
Firm tenure			0.014*** (0.004)	0.014*** (0.004)			-0.014** (0.006)	-0.014** (0.006)
Firm tenure ²			-0.000 (0.000)	-0.000 (0.000)			-0.000 (0.000)	-0.000 (0.000)
Ln net income			0.874*** (0.043)	0.859*** (0.043)			0.507*** (0.054)	0.505*** (0.054)
Job change			0.034 (0.032)	0.034 (0.032)			0.116*** (0.043)	0.114*** (0.043)
Working hours			-0.014*** (0.002)	-0.013*** (0.002)			0.002 (0.002)	0.002 (0.002)
Part-time			-0.171*** (0.039)	-0.155*** (0.039)			-0.251*** (0.055)	-0.246*** (0.055)
Permanent contract			0.083** (0.039)	0.082** (0.039)			0.048 (0.061)	0.045 (0.061)
Public sector			-0.008 (0.029)	0.022 (0.032)			0.004 (0.055)	0.014 (0.055)
Blue-collar			-0.322*** (0.036)	-0.345*** (0.036)			-0.257*** (0.059)	-0.261*** (0.059)
Apprentice			-0.044 (0.086)	-0.052 (0.086)			-0.307* (0.158)	-0.307* (0.158)
Civil servant			0.244*** (0.045)	0.251*** (0.046)			-0.010 (0.192)	-0.022 (0.192)
Firm size $20 \leq x < 200$			-0.043 (0.036)	-0.051 (0.036)			0.067 (0.057)	0.064 (0.057)
Firm size $200 \leq x < 2000$			0.002 (0.041)	-0.011 (0.041)			0.111* (0.066)	0.103 (0.066)
Firm size $x \geq 2000$			0.103** (0.042)	0.095** (0.042)			0.103 (0.068)	0.096 (0.068)
State & year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Occupation controls	No	No	Yes	Yes	No	No	Yes	Yes
Industry controls	No	No	No	Yes	No	No	No	Yes
Observations	42158							
Individuals	24344							

Notes: Columns (1) to (4) show results from OLS regressions, while columns (5) to (8) report estimates from linear FE regressions. Omitted variables: Native, Married, Full-time, White-Collar, and Firm size < 20 . Standard errors are clustered at the individual level and shown in parentheses. Significance levels: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. Data source: SOEP v39 (2022). Survey years: 2006, 2011, 2016, 2019, and 2022.

Table A.2: Works councils and previous income satisfaction

<i>Dep. variable:</i>	Works council	
	(1) OLS	(2) FE
Previous income satisfaction	−0.002 (0.002)	−0.001 (0.005)
Observations	5774	
Individuals	4109	

Notes: This table reports the estimation results from regressions of the works council dummy on lagged income satisfaction. The sample is restricted to individuals who remain in establishments without a works council between two survey years with available works council information, as well as those who experience a change in works council status (from 0 to 1) over this period. Column (1) shows results from the OLS regression, while column (2) reports estimates from the linear fixed effects regression. Additional covariates correspond to those used in specifications (4) and (8) in Table 2. A complete list of these covariates is provided in Table A.1 in Appendix A. Standard errors are clustered at the individual level and shown in parentheses. Significance levels: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. Data source: SOEP v39 (2022). Survey years: 2011, 2016, 2019, and 2022.

Table A.3: Robustness: Inclusion of further controls

<i>Dep. variable:</i>	Income satisfaction							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
<i>Panel A: OLS</i>								
Works council	0.199*** (0.041)	0.136*** (0.043)	0.231*** (0.031)	0.233*** (0.031)	0.231*** (0.031)	0.211*** (0.042)	0.143*** (0.044)	0.142*** (0.044)
Collective bargaining		0.183*** (0.035)					0.195*** (0.036)	0.195*** (0.036)
Overtime (0/1)				−0.105*** (0.024)			−0.040 (0.033)	
Overtime hours					0.001 (0.003)			0.001 (0.005)
<i>Panel B: FE</i>								
Works council	0.235*** (0.086)	0.219** (0.087)	0.235*** (0.048)	0.236*** (0.048)	0.236*** (0.048)	0.297*** (0.090)	0.277*** (0.091)	0.278*** (0.091)
Collective bargaining		0.088 (0.066)					0.105 (0.068)	0.107 (0.068)
Overtime (0/1)				−0.052* (0.031)			0.017 (0.053)	
Overtime hours					−0.011** (0.005)			−0.013 (0.010)
Observations	18909	18909	40074	40074	40074	18119	18119	18119
Individuals	13829	13829	23352	23352	23352	13321	13321	13321

Notes: Panel A shows results from OLS regressions, while Panel B reports estimates from linear FE regressions. The sets of additional covariates in Panels A and B correspond to specifications (4) and (8) in Table 2, respectively. A complete list of these variables is provided in Table A.1 in Appendix A. Standard errors are clustered at the individual level and shown in parentheses. Significance levels: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. Data source: SOEP v39 (2022). Columns (1) and (2) and (6) to (8) use information from the survey years 2016 and 2019. Columns (3) to (5) use information from the survey years 2006, 2011, 2016, 2019, and 2022.

Table A.4: Robustness: Controlling for personality traits and risk attitudes

<i>Dep. variable:</i>	Income satisfaction							
	(1) OLS	(2) OLS	(3) OLS	(4) OLS	(5) FE	(6) FE	(7) OLS	(8) OLS
Works council	0.192*** (0.051)	0.173*** (0.051)	0.217*** (0.030)	0.218*** (0.030)	0.218*** (0.047)	0.218*** (0.047)	0.191*** (0.051)	0.172*** (0.051)
Big 5: Openess		0.080** (0.037)						0.058 (0.037)
Big 5: Conscientiousness		0.113*** (0.038)						0.111*** (0.038)
Big 5: Extraversion		0.158*** (0.037)						0.135*** (0.037)
Big 5: Agreeableness		0.161*** (0.036)						0.171*** (0.036)
Big 5: Neuroticism		-0.413*** (0.037)						-0.392*** (0.037)
Risk attitudes				0.052*** (0.005)		0.036*** (0.008)		0.041*** (0.009)
Observations	10640	10640	42096	42096	42096	42096	10634	10634
Individuals	10640	10640	24317	24317	24317	24317	10634	10634

Notes: Columns (1) to (4) and (7) to (8) show results from OLS regression, while columns (5) and (6) report estimates from linear FE regressions. The Big Five indicators are dummy variables that equal one if a respondent's score is above the median of the sample. The variable *risk attitudes* varies from 0 (risk-averse) to 10 (risk-seeking). The sets of additional covariates in columns (1) to (4), (7), and (8) correspond to specification (4) in Table 2, while the additional covariates in columns (5) and (6) correspond to specification (8) in Table 2. A complete list of these variables is provided in Table A.1 in Appendix A. Standard errors are clustered at the individual level and shown in parentheses. Significance levels: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. Data source: SOEP v39 (2022). Columns (1), (2), (7), and (8) use information from the survey year 2019, while columns (3) to (6) use information from the survey years 2006, 2011, 2016, 2019, and 2022.

Table A.5: Robustness: Alternative specification of the dependent variable

<i>Dep. variable:</i>	Dummy equal one if the income satisfaction level is at least			
	6 out of 10 (1)	7 out of 10 (2)	8 out of 10 (3)	9 out of 10 (4)
<i>Panel A: OLS</i>				
Works council	0.030*** (0.006)	0.047*** (0.007)	0.044*** (0.007)	0.018*** (0.005)
<i>Panel B: FE</i>				
Works council	0.023** (0.011)	0.038*** (0.012)	0.042*** (0.012)	0.032*** (0.010)
Observations	42158			
Individuals	24344			

Notes: Panel A shows results from OLS regressions, while Panel B reports estimates from linear FE regressions. The sets of additional covariates in Panels A and B correspond to specifications (4) and (8) in Table 2, respectively. A complete list of these variables is provided in Table A.1 in Appendix A. Standard errors are clustered at the individual level and shown in parentheses. Significance levels: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. Data source: SOEP v39 (2022). Survey years 2006, 2011, 2016, 2019, and 2022.

Table A.6: Robustness: Ordered probit model

<i>Dep. variable:</i>	Income satisfaction	
	(1) Coefficient	(2) Marginal effect
Works council	0.111*** (0.016)	
Income satisfaction = 0		−0.002*** (0.000)
Income satisfaction = 1		−0.002*** (0.000)
Income satisfaction = 2		−0.004*** (0.001)
Income satisfaction = 3		−0.007*** (0.001)
Income satisfaction = 4		−0.007*** (0.001)
Income satisfaction = 5		−0.010*** (0.001)
Income satisfaction = 6		−0.007*** (0.001)
Income satisfaction = 7		−0.001*** (0.000)
Income satisfaction = 8		0.013*** (0.002)
Income satisfaction = 9		0.014*** (0.002)
Income satisfaction = 10		0.013*** (0.002)
Observations	42158	
Individuals	24344	

Notes: Column (1) shows the coefficient of the works council dummy based on an ordered probit model, while column (2) reports the marginal effects for each income satisfaction level. The set of covariates corresponds to specification (4) in Table 2. A complete list of these variables is provided in Table A.1 in Appendix A. Standard errors are clustered at the individual level and shown in parentheses. Significance levels: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. Data source: SOEP v39 (2022). Survey years: 2006, 2011, 2016, 2019, and 2022.

Table A.7: Robustness: Sample restrictions

<i>Dep. variable:</i>	Income satisfaction		
	85% (1)	90% (2)	95% (3)
<i>Panel A: OLS</i>			
Works council	0.232*** (0.031)	0.233*** (0.031)	0.247*** (0.032)
<i>Panel B: FE</i>			
Works council	0.230*** (0.048)	0.238*** (0.049)	0.223*** (0.051)
Observations	39856	38533	35803
Individuals	23245	22707	21544

Notes: Panel A shows results from OLS regression, while Panel B reports estimates from linear FE regressions. In column (1), we exclude individuals whose household labour income accounts for less than 85% of total household income (including income from labour, financial assets, rents, etc.). In column (2), we tighten this restriction to 90%, and in column (3) to 95%. The set of covariates corresponds to specifications (4) and (8) in Table 2, respectively. A complete list of these variables is provided in Table A.1 in Appendix A. Standard errors are clustered at the individual level and shown in parentheses. Significance levels: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. Data source: SOEP v39 (2022). Survey years: 2006, 2011, 2016, 2019, and 2022.

Table A.8: Robustness: Individuals with and without establishment mobility

<i>Dep. variable:</i>	Income satisfaction		
	Both changers & non-changers	Changers	Non-changers
	(1)	(2)	(3)
Works council	0.194*** (0.057)	0.163* (0.089)	0.234*** (0.075)
Observations	4885	2922	1963
Individuals	1865	1102	763

Notes: This table shows results from linear FE regressions. The set of additional covariates corresponds to specification (8) in Table 2. A complete list of these variables is provided in Table A.1 in Appendix A. Standard errors are clustered at the individual level and shown in parentheses. Significance levels: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. Data source: SOEP v39 (2022). Survey years 2006, 2011, 2016, 2019, and 2022.

Table A.9: Robustness: Other satisfaction measures

<i>Dep. variable:</i> Satisfaction with	Life (1)	Leisure (2)	Family life (3)	Social life (4)	Dwelling (5)	Sleep (6)	Health (7)	Household income (8)	Job (9)
<i>Panel A: OLS</i>									
Works council	0.008 (0.024)	0.009 (0.031)	-0.035 (0.027)	-0.024 (0.033)	-0.015 (0.027)	-0.024 (0.035)	-0.017 (0.029)	0.102*** (0.029)	0.072** (0.029)
<i>Panel B: FE</i>									
Works council	0.004 (0.034)	0.035 (0.050)	0.018 (0.043)	0.055 (0.062)	0.006 (0.045)	0.059 (0.055)	0.045 (0.043)	0.097** (0.044)	0.093* (0.049)
Observations	42144	42158	41826	24575	42127	34517	42189	41956	41945
Individuals	24345	24346	24205	17071	24321	20919	24356	24234	24241

Notes: Panels A shows results from OLS regressions, while Panel B reports estimates from linear FE regressions. The sets of additional covariates in Panels A and B correspond to specifications (4) and (8) in Table 2, respectively. A complete list of these variables is provided in Table A.1 in Appendix A. Standard errors are clustered at the individual level and shown in parentheses. Significance levels: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. Data source: SOEP v39 (2022). Columns (1), (2), (3), (5), (7), (8), and (9) use information from the survey years 2006, 2011, 2016, 2019, and 2022. Column (4) uses information from the survey years 2006, 2011, and 2016. Column (6) uses information from the survey years 2011, 2016, 2019, and 2022.

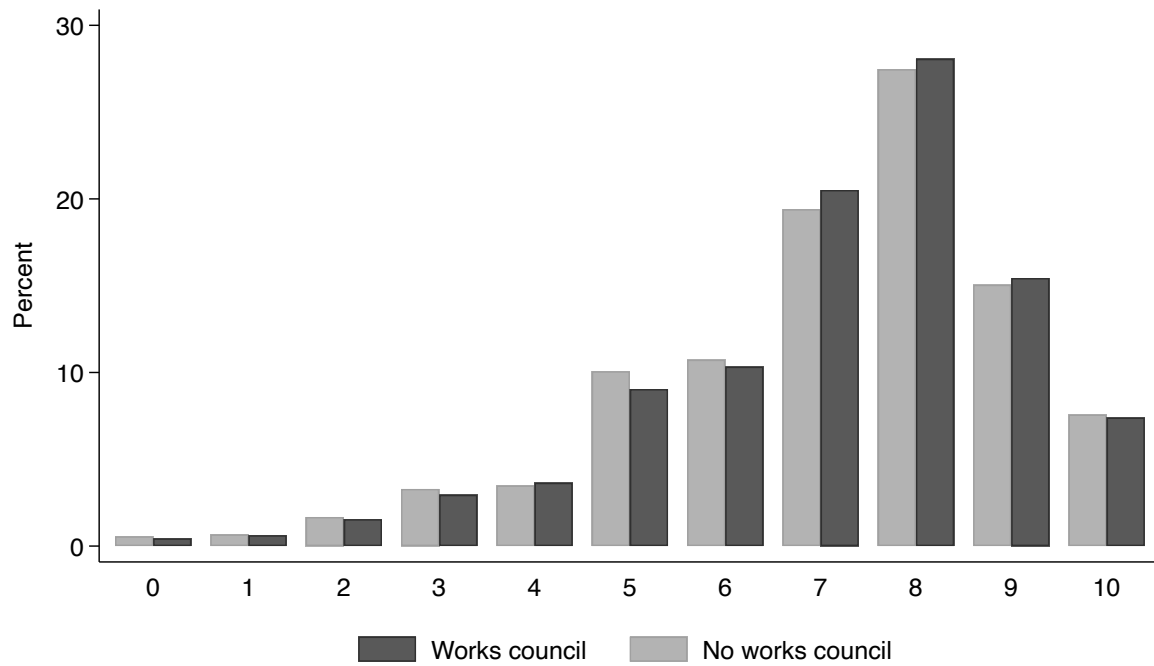
Table A.10: Works councils and unfair wage perceptions using FE specification

<i>Dep. variable:</i>	Unfair wage	Income satisfaction	
	(1)	(2)	(3)
Works council (imputed)	−0.045*** (0.012)	0.230*** (0.044)	0.200*** (0.043)
Unfair wage (dummy)			−0.669*** (0.022)
Observations		50367	
Individuals		22094	

Notes: This table shows results from linear FE regressions. The work council information from 2006, 2016 and 2022 to 2005, 2007, 2015, 2017, and 2021 is imputed for individuals who did not change employers. Details on the imputation procedure are provided in Figure A.3. The set of covariates corresponds to specification (8) in Table 2. A complete list of these variables is provided in Table A.1 in Appendix A. Standard errors are clustered at the individual level and shown in parentheses. Significance levels: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. Data source: SOEP v39 (2022). Survey years: 2005, 2007, 2011, 2015, 2017, 2019, and 2021.

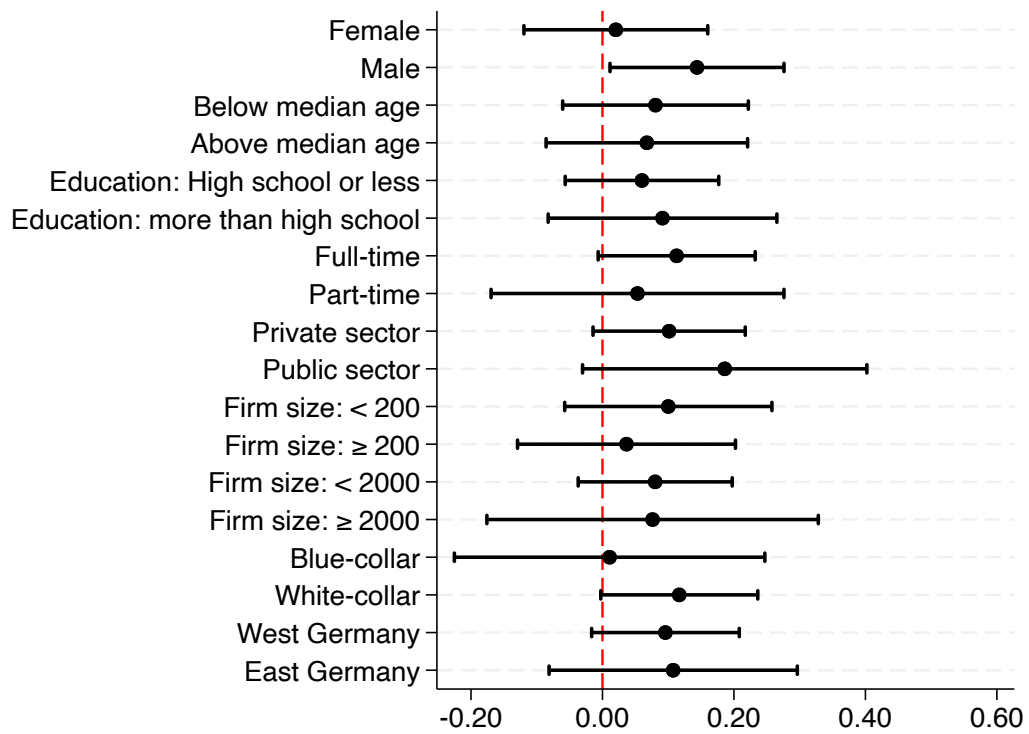
B Robustness Tests for Job Satisfaction

Figure B.1: Distribution of job satisfaction



Notes: Data source: SOEP v39 (2022). Survey years: 2006, 2011, 2016, 2019, and 2022.

Figure B.2: Effect heterogeneity



Notes: This figure shows the relationship between working in an establishment with a works council and job satisfaction across different subsamples. Each row is based on a separate linear FE regression containing the set of covariates used in specification (8) in Table 2. A complete list of these variables is provided in Table A.1 in the Appendix. The confidence intervals shown are set at the 95 % level of statistical significance. Data source: SOEP v39 (2022). Survey years: 2006, 2011, 2016, 2019, and 2022.

Table B.1: Job Satisfaction: Alternative specification of the dependent variable

<i>Dep. variable:</i>	Dummy equal one if the job satisfaction level is at least			
	6 out of 10 (1)	7 out of 10 (2)	8 out of 10 (3)	9 out of 10 (4)
<i>Panel A: OLS</i>				
Works council	0.008 (0.006)	0.014** (0.007)	0.019*** (0.007)	0.013** (0.006)
<i>Panel B: FE</i>				
Works council	0.021* (0.011)	0.016 (0.012)	0.022* (0.013)	0.007 (0.011)
Observations	41945			
Individuals	24241			

Notes: Panel A shows results from OLS regressions, while Panel B reports estimates from linear FE regressions. The sets of additional covariates in Panels A and B correspond to specifications (4) and (8) in Table 2, respectively. A complete list of these variables is provided in Table A.1 in Appendix A. Standard errors are clustered at the individual level and shown in parentheses. Significance levels: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. Data source: SOEP v39 (2022). Survey years 2006, 2011, 2016, 2019, and 2022.

Table B.2: Job Satisfaction: Ordered probit model

<i>Dep. variable:</i>	Job satisfaction	
	(1) Coefficient	(2) Marginal effect
Works council	0.044*** (0.016)	
Job satisfaction = 0		−0.001*** (0.000)
Job satisfaction = 1		−0.001*** (0.000)
Job satisfaction = 2		−0.001*** (0.001)
Job satisfaction = 3		−0.002*** (0.001)
Job satisfaction = 4		−0.002*** (0.001)
Job satisfaction = 5		−0.004*** (0.002)
Job satisfaction = 6		−0.003*** (0.001)
Job satisfaction = 7		−0.002*** (0.001)
Job satisfaction = 8		0.004*** (0.002)
Job satisfaction = 9		0.007*** (0.002)
Job satisfaction = 10		0.006*** (0.002)
Observations	41945	
Individuals	24241	

Notes: Column (1) shows the coefficient of the works council dummy based on an ordered probit model, while column (2) reports the marginal effects for each job satisfaction level. The set of covariates corresponds to specification (4) in Table 2. A complete list of these variables is provided in Table A.1 in Appendix A. Standard errors are clustered at the individual level and shown in parentheses. Significance levels: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. Data source: SOEP v39 (2022). Survey years: 2006, 2011, 2016, 2019, and 2022.

References

SOEP v39 (2022). Socio-Economic Panel, data from 1984-2022. SOEP-Core v39.