The Organizational Economics of Working Environment

Part 1: Introduction and Motivation:
- Why do we (Economists) care about Working Environment
- Data: What do we have to work with?

Part 2) The (New) Organizational Economics Approach:
a) **Firm Level** Data Construction and Verification
b) Firm Focus: Does WE matter in the production function?
c) Employee Focus: WE and Employee Health.

Part 3) Causal Analysis of Determinants of GOOD WE: Neighborhood CEOs

Part 4) How to do research in the OEWE? Some thoughts and open questions?

1

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2

Why do we care?

Some Basic Facts (ILO/OECD/WB/Research)

- 3.3 billion people work in firms around the world, WE is a big factor in understand health, social outcomes, family economics, LIFE…Firms Internal sustainability.
- Cost of absenteeism is estimated to be around 5-7 pct of GDP in Western Countries (The Economist/ World Bank).
- Differences in organization across firms explains almost half of the variation in measures of employee wellbeing, such as absenteeism and dependence on prescription drugs (Bennedsen et al 2020).
- Link between WE and firms internal sustainability: Employees are a key driver of a firm's success (Babina et al 2019, Barbachon et al 2023).Firms unable to retain employees (Bertheau et al 2020, Li et al 2022). Firms with employees subject to negative health shocks (Rettl et al 2024)) experience lower financial performance.

3

Current Multifield Research:

Medicin: Hansen, et.al. (2009). A review of the effect of the psychosocial working environment on physiological changes in blood and urine. *Basic & clinical pharmacology & toxicology*, *105*(2), 73-83.

Biochemistry: Definining threshold levels of dusts; Nano Science…

Psychology: Bowling & Beehr. (2006). Workplace harassment from the victim's perspective: a theoretical model and meta-analysis. *J. of applied psychology*, *91*(5), 998.

2

Labor: Crocker and Horst. "Hours of work, labor productivity, and environmental conditions: A case study." *The Review of Economics and Statistics* (1981): 361-368.

Economics: Fisman, Raymond, and Yongxiang Wang. "The distortionary effects of incentives in government: evidence from China's "death ceiling" program." *American Economic Journal: Applied Economics* 9.2 (2017): 202-218.

Sociology, Organizational behavior, Antropology, Statistics, Management …

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4

OE literature:

- Field experiments on specific aspects of the working environment: psychological safety (Castro, Englmaier, and Guadalupe 2022), wellness (Gubler, Larkin, and Pierce 2018), workplace atmosphere (Alan, Corekcioglu, and Sutter 2023), leader evaluation (Cai and Wang 2022), meaning (Ashraf, Bandiera, Minni, Zingales, 2024), etc.
- Studies of adjacent constructs such as corporate culture (Guiso, Sapienza, Zingales, 2013; Li, Mai, Shen, Yan 2021; Graham et al., 2022), purpose (Gartenberg, Prat, Serafeim, 2019; Gartenberg and Serafeim 2023), employee happiness/well-being (Bellet, De Neve, and George, 2024; De Neve et al., 2023), employee-friendly policies (Bae, Schandlbauer, and Wang, 2011; Kang and Kim, 2020; Landier, Nair, and Wulf, 2009).

Capture aspects on Culture, Teams, Management, Leadership. Related to WE.

3

5

Data: What do we have to work with?

OECD / ILO has organized high quality cross country surveys. (OECD Guidelines on Measuring the Quality of the Working Environment)

Table 2.7. **OECD Job Quality Framework, 2015**

Dimension	Headline indicator	Sub-indicators
(1) Earnings	Earnings quality	• Average earnings • Earnings inequality
(2) Labour-market Security	Labour-market security against unemployment	• Unemployment risk • Unemployment insurance
	Labour-market security against extremely low pay	• Probability of falling into extremely low pay • Probability of getting out of extremely low pay
(3) Quality of the Working Environment*	Job strain	• Excessive job demands ❖ Time pressure at work ❖ Physical health risk factors • Insufficient job resources ❖ Work autonomy and learning opportunities ❖ Social support at work
	Supplementary indicator: Working very long hours	

3

6

European Social Survey/ EUROPEAN WORKING CONDITION SURVEY

Table 2.13. **Quality of the working environment in the ESS**

Countries covered	EU28, Norway, Switzerland, Turkey, Israel, Russia, Ukraine
Years covered, frequency	2004, 2010
Target population	All persons aged 15 and over (no upper age limit) resident within private households in each country, regardless of their nationality, citizenship or language
Sample size	Varies between 600 (i.e. Iceland) and 3 000 (i.e. Czech Republic and Germany). Mean sample size: 1 900
Aspects of the quality of the working environment covered	Physical risk factors; Work intensity; Emotional demands and work stress; Subjective job insecurity; Task discretion and autonomy; Training and learning opportunities; Opportunity for career advancement; Organisational participation and workplace voice; Intrinsic rewards; Social support and good relationships at work; Work-life balance; Unsocial work schedule; Flexibility of working hours

Source: Authors' elaboration based on European Social Surveys.

7

International Social Survey Programme

Table 2.15. **Quality of the working environment in the ISSP**

Countries covered	Australia, Austria, Belgium, Canada, Czech Republic, Denmark, Finland, France, Germany, Hungary, Ireland, Israel, Italy, Japan, Korea, Mexico, Netherlands, New Zealand, Norway, Poland, Portugal, Slovenia, Spain, Sweden, Switzerland, United Kingdom, United States, Latvia, The Russian Federation, South Africa, Bulgaria, Bangladesh, Dominican Republic, Philippines, Chinese Taipei
Years covered, frequency	1989, 1997, 2005, 2015/6** in progress
Target population	Nationally representative random sample of the adult population
Sample size	Varies between 900 (i.e. United Kingdom, Canada, Japan and the Netherlands) and 2 800 (i.e. South Africa). Mean sample size: 1 400
Aspects of the quality of the working environment covered	Physical risk factors; Physical demands; Work intensity; Emotional demands and work stress; Subjective job insecurity; Task discretion and autonomy; Training and learning opportunities; Opportunity for career advancement; Intrinsic rewards; Task clarity and performance feedback; Social support and good relationships at work; Work-life balance; Flexibility of working hours

Source: Authors' elaboration based on information sourced from the International Social Survey Programme.

8

National SURVEYS OF WE

Table 2.17. **National surveys related to the quality of the working enviror**

Country	Name of the Survey	Periodicity
Australia	Household, Income and Labour Dynamics in Australia Survey (HILDA)	Since 2001, annually
	Australian Work and Life Index (AWALI)	2007, 2008, 2009, 2010, 2012
Austria	Work Climate Index	Since 1997, biannually
Canada	Changing Employment Relationships Survey	2000
	Québec Survey on Working and Employment Conditions and Occupational Health and Safety (EQCOTESST)	2007
Chile	Chilean National Survey of Employment, Work and Health and Quality of Life of Workers (ENETS)	2009-2010
Czech Republic	Quality of working life	2005, 2006
	Value of health	2007
	Our society 2008	2008
Denmark	Danish Work Environment Cohort Study (DWECS)	1990, 1995, 2000, 2005, 2010
	Working Environment and Health in Denmark 2012–2020 (WEHD)	2012-2020
Estonia	Estonian Working Life Survey	2009, 2014/2015
	Employment Contract Act Survey	2012
	Finnish Quality of Work Life Survey	1977, 1984, 1990, 1997, 2003

9

NATIONAL WORKPLACE INSPECTION DATA

EXAMPLE: Danish Working Environment Authority.

- 3 rd Party Data (INSPECTION)
- The Topic Variable says which topic the evaluation relates too: Most common topics includes general work environment evaluation, fall accidents, machines and other equipment, physical movements (lift, pull and push) and air quality (including smoke related stuff).

10

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11

The (New) Organizational Economics Approach.

- Develop (and validate) a comprehensive measure ***of firm level working environments*** based on survey data on employees' perceptions in Denmark
- Show how working environment associates with firm outcomes and employee health.

"New": Firm level comprehensive WE measures with submeasures and the ability to link to firm and employes determinants and outcomes: Strong focus on "the firm".

2

6

12

Data on working environment

- Working Environment and Health Survey, conducted by the National Center for the Working Environment (NFA) in Denmark
- Our primary source of working environment data comes from the Danish Working Environment and Health Survey (WEH). The WEH survey asks around 100 questions about employees' perceptions of their working conditions.
- Almost 100 questions organized in six categories (more later)
- 8 rounds in 2008-2023 (response rate between 50% and 60%)
- Firm and employee identifiers to match survey responses with other register data from Denmark.

13

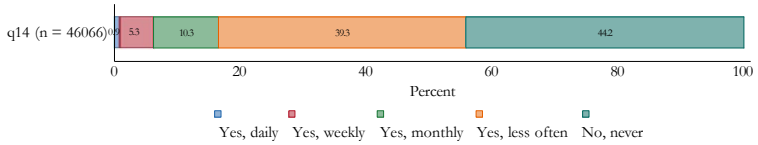
Survey items

- **Psychological and social working environment** (34Q): Commitment, meaning, role clarity, fairness, cooperation, job insecurity […]
- **Negative experiences** (6Q): Physical violence, bullying, harassment […]
- **Physical working environment** (10Q):Physical hard work, walking and standing positions, push/pull loads, noise […].
- **Health and ability at work** (10Q): Pain, fatigue and sleep problems, mental health, depression, anxiety, illness, motivation […]
- **Chemicals** (3Q): Contact with chemicals, skin problems […]
- **Work accidents and safety** (10Q): Prevention of work hazards, perception on accidents, safety priority […].

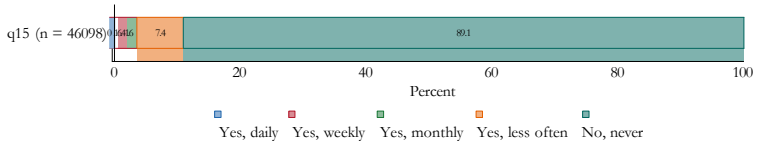
14

Example, Negative Experiences

Q14. In the last 12 months, have you had any arguments or conflicts with anyone at your workplace?



Q15. Have you, within the last 12 months, been exposed to bullying at your workplace (i.e., when one or more people regularly and over a long period of time - or repeatedly in a gross manner - exposes one or more other people to offensive actions that the person perceives as hurtful or degrading).



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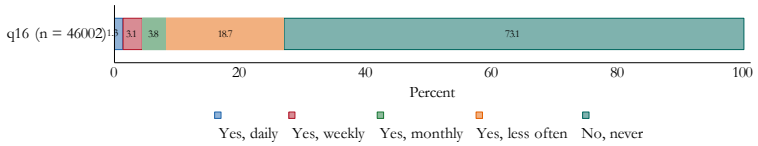
Example, Negative Experiences, continued

Q16. Within the last 12 months, have you witnessed someone in your workplace being bullied?



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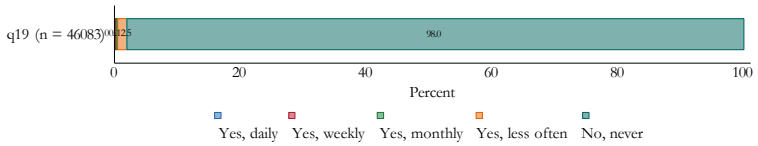
Q19. Have you been exposed to sexual harassment at your workplace within the last 12 months?



16

Data construction

- Aggregation, Construct a FIRM /WORKPLACE level measure of working environment and its 6 components.
- Around 20,000 firm obs. (and 60,000 employee responses) pooling four waves of working environment survey and adding firm data (accounting, leadership etc)
- Around 3,000 firm obs. after matching with data on workplace inspections (1/3 of all hypothetical firms)
- Around 20,000 firm obs. after matching with data on employees' tenure and hospitalization, and 4,000 firm obs. with data on absenteeism and accidents.

17

Sample

	Mean	S.D.	25 Pct.	Median	75 Pct.
Panel A: Firm Statistics					
Asset	371.82	2940.4	8.44	28.17	108.20
Capital/Empl.	2.58	23.6	0.42	0.79	1.51
Gross Profit	21.08	407.6	0.23	1.65	6.76
Turnover	331.83	1896.4	17.12	52.67	175.18
OROA	0.08	0.3	0.02	0.08	0.15
Firm Age	21.36	16.7	9.00	17.00	29.00
Employees	137.80	706.5	14.00	36.47	94.93
Observations	20348				
Panel B: Employee Statistics					
Age	36.78	14.5	24.00	37.00	48.00
Bachelor	0.18	0.4	0.00	0.00	0.00
Tenure	4.61	6.4	0.00	2.00	6.00
Salary	230.45	2618.6	149.15	189.70	249.22
Observations	4065303				

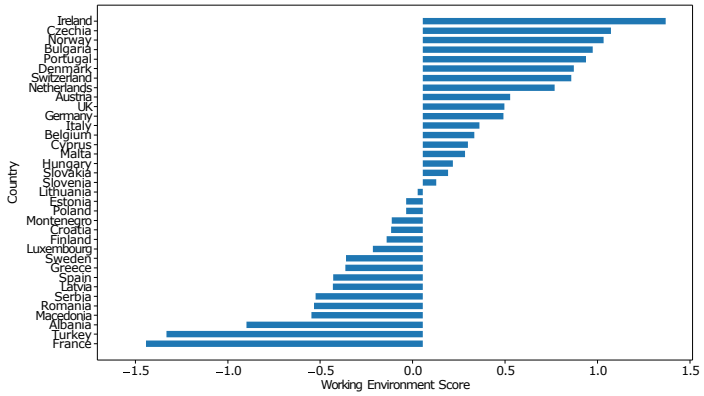
11

18

Where is the Variation in WE?

Figure: Differences in Working Environment Across Countries

The quality of working environment, EWCS data , same seven categories used in the WEH survey for Denmark. Standardized categorical scores and an aggregated overall score at individual level.



12

19

EWCS data and Danish data

In the OECD working environment survey, country and industry effect explain less whan 10% of variation in working environment

In the Danish working environment survey, firm effects explain almost 1/4 of variation in working environment

Observations	43850	43557	43557	47853	47853
Adj.R2	0.026	0.066	0.090	0.0253	0.230
Country Dummies	Yes	No	Yes	No	No
Industry Dummies	No	Yes	Yes	Yes	No
Firm Dummies	No	No	No	No	Yes

13

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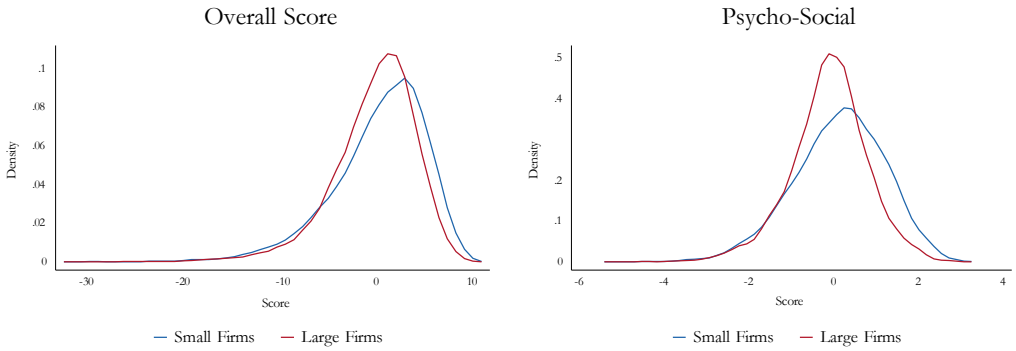
20

Working Environment Distribution by size

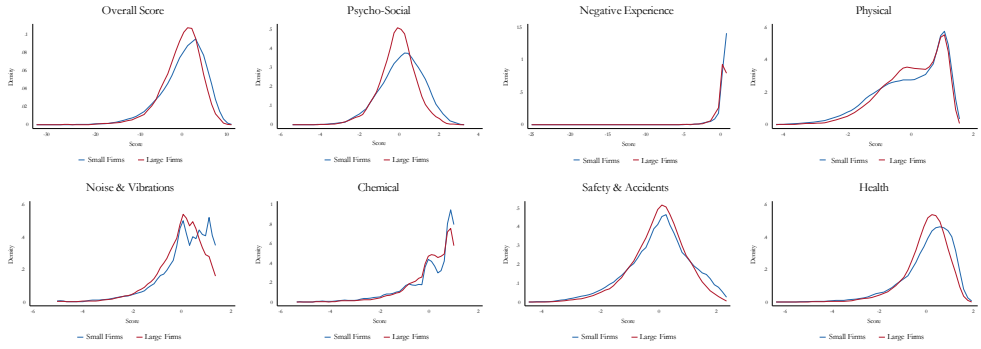


These figures show the working environment score distribution by firm size. In general, smaller firms have better working conditions, but also a wider dispersion in Working environment.

14

21

Working Environment Distribution by size, different measures

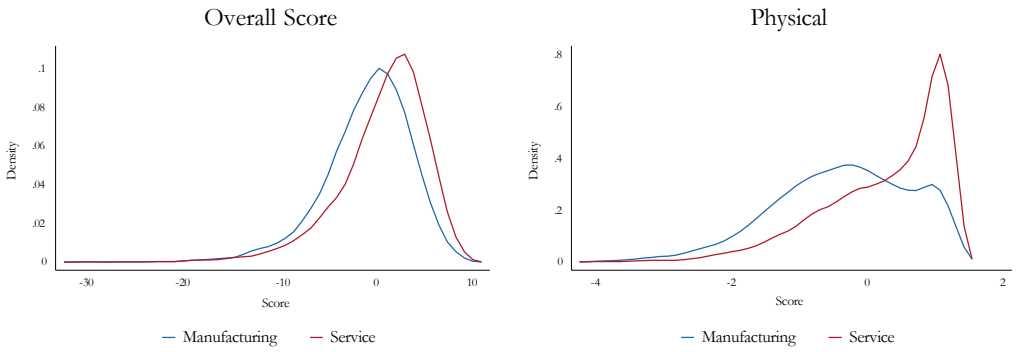


In general, smaller firms have better working conditions - mainly driven by psycho-social and health.

15

22

Working Environment Distribution by Sector

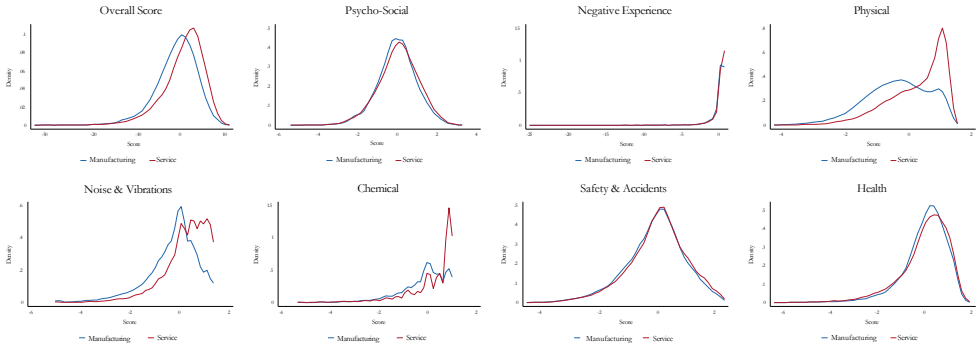


These figures show the working environment score distribution by firm sector. In general, service sector firms have better working conditions than manufacturing firms. This is particularly prominent in the physical aspect of working environment.

16

23

Working Environment Distribution by Sector, different measures



These figures show the working environment score distribution by firm sector. In general, service sector firms have better working conditions than manufacturing firms. This is mainly driven by the physical aspect of working environment.

17

24

12

Validating the Approach: Working Environment and Inspection Outcomes

- Dependent variables (Columns 1 to 7): remarks dummy, weak remarks dummy, strong remarks dummy, # of total remarks, # of weak remarks, # of strong remarks, and remarks per plant visit
- Good working environment is negatively associated with administrative remarks during workplace inspections
- Result holds controlling for time, industry effects and firm characteristics

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Working Env.	-0.01***	-0.01***	-0.01**	-0.09**	-0.02*	-0.07**	-0.05*
	(0.00)	(0.00)	(0.00)	(0.03)	(0.01)	(0.02)	(0.02)
Asset	0.05***	0.04**	0.05**	0.74**	0.14	0.60**	0.19
	(0.01)	(0.01)	(0.01)	(0.26)	(0.08)	(0.20)	(0.15)
Capital/Empl.	-0.00	-0.00	-0.00*	-0.02	-0.00	-0.02	-0.01
	(0.00)	(0.00)	(0.00)	(0.01)	(0.00)	(0.01)	(0.00)
Firm Age	-0.00	0.00	-0.00	-0.01	-0.00	-0.01	-0.00*
	(0.00)	(0.00)	(0.00)	(0.01)	(0.00)	(0.01)	(0.00)
Observations	3259	3259	3259	3259	3259	3259	3259
Adj.R2	0.041	0.048	0.040	0.090	0.047	0.086	0.027
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes

25

Working Environment and Financial Performance

- We then investigate the associations between the working environment and firms' financial performance.
- We use the average Operating Return on Assets (OROA) over the three years after the working environment survey as the dependent variable
- We also use propensity score to match firms in the top 20 percentile of the working environment score distribution to a firm in the bottom 80 percentile.

26

Working Environment and Financial Performance

- Good working environment is positively associated with operating performance (OROA)
- Result holds using contemporaneous and future performance (3-year average OROA after each survey wave)
- Finding driven by psycho-social working environment, safety and health and ability at work

Causality shown in Bennedsen et al 2025.

	All Obs.		Matching	
	(1)	(2)	(3)	(4)
Working Env.	0.0009*	0.0010**		
	(0.00)	(0.00)		
Treated			0.0059**	0.0080***
			(0.00)	(0.00)
Asset		-0.0078*		
		(0.00)		
Capital/Empl.		-0.0001*		
		(0.00)		
Firm Age		0.0001		
		(0.00)		
Observations	19818	19818	19536	19536
Adj.R2	0.005	0.016		
Industry FE	Yes	Yes	No	Yes
Year Controls	Yes	Yes	No	Yes
Firm Controls	No	Yes	Yes	Yes
Matched Sample	No	No	Yes	Yes

27

Working Environment and Innovations

We investigate channels through which the working environment may be associated with firm financial performance.

A good working environment is positively associated with innovation quality and product innovation; columns are (1) survey measure, (2) number of patent citations, (3) citations per patent, (4) log of the number of patents.

	(1)	(2)	(3)	(4)
	New Product	No. Cited	Cite P.P.	log Patent
Working Env.	0.0067**	20.2602**	0.1435**	0.0021
	(0.00)	(5.24)	(0.05)	(0.00)
Asset	0.0405***	224.4291**	0.7542***	0.0248
	(0.01)	(67.85)	(0.16)	(0.01)
Capital/Empl.	-0.0015*	-3.8123*	0.0013	-0.0000
	(0.00)	(1.44)	(0.01)	(0.00)
Firm Age	0.0002	-8.0964**	-0.0336***	0.0003
	(0.00)	(2.23)	(0.00)	(0.00)
Observations	1119	346	346	20348
Adj.R2	0.023	0.053	0.046	0.043
Industry FE	Yes	Yes	Yes	Yes
Year Controls	No	Yes	Yes	Yes

28

Working Environment and Employee Well-being

- Good working environment is associated with longer tenure, fewer hospitalizations and accidents, less absenteeism
- For tenure and mental health, all working environment items matter equally
- For absenteeism, only psycho-social working environment and negative experience matter.

	(1) Tenure	(2) Mental	(3) Emergency	(4) Hosp. Days	(5) Accidents	(6) Absenteeism
Working Env.	0.0661***	-0.0047**	-0.0087***	0.0005*	-0.0134***	-0.0284**
	(0.01)	(0.00)	(0.00)	(0.00)	(0.00)	(0.01)
Asset	-0.2506***	0.0417***	0.0903***	-0.0068***	0.0703***	0.2455***
	(0.05)	(0.01)	(0.01)	(0.00)	(0.01)	(0.03)
Capital/Empl.	-0.0009	-0.0007*	-0.0012	0.0001*	-0.0024*	-0.0136***
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Firm Age	0.0807***	-0.0004	0.0001	0.0000	0.0005	-0.0058
	(0.01)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Employees	-0.0002**	0.0001*	-0.0000*	0.0000**	0.0000***	-0.0001**
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Observations	20315	20348	20348	20348	3931	3931
Adj.R2	0.144	0.126	0.169	0.020	0.099	0.014
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
Year Controls	Yes	Yes	Yes	Yes	Yes	Yes

29

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30

HART AND ZINGALES JPE 2024

"We have assumed that socially responsible agents weigh the impact of their decisions on everyone on the entire planet. **In practice, people are more likely to internalize the impact they have on their community than on the world at large. This local bias in social responsibility might explain some of the observed trends in corporate governance. Until the 1970s, companies were owned very locally.** … **favors an internalization of the externalities produced by firms...** From the 1980s, we have witnessed… the globalization of firms ... **has led firms to become more asocial, that is, to ignore most of the externalities they produce."**

31

Motivation

- Urban Economics / Sociology: Neigbourhoods have a profound influence on individuals and social groups (Sampsun et al (2002, Damm and Dustmann 2013, Kling 2005, Durlauf 2004.)
- **NOW: How does neighbourhood relationships influence decision making of CEOs in private corporations?**
- We define neighbourhood CEOs as CEOs living within a short distance from the firm and/or feeling a strong attachment to the neighbourhood around the firm.

32

DATA

SURVEY Data CEO values (importance of nbh)

- **Survey on CEOs Values 2015** (Bennedsen, Chevrot, Friebel and Schlier 25).
- This survey uses questions from the World Value Survey to elict the engagement of CEOs in the local communities. (Value based definition of NBH CEOs):

Variable	Definition
CEO value survey variables	
Neighbourhood: importance of engagement (personal)	Survey Question asking managers how much they value engagement with the neighbourhood at a personal level. Coded 0 to 1 in increments of 0.25. The greater the value of the variable, the more important engagement is.
Neighbourhood: importance of engagement (firm)	Survey Question asking managers how much they value the firm's engagement with the neighbourhood. Coded 0 to 1 in increments of 0.25. The greater the value of the variable, the more important engagement is.
Importance of personal values	Survey question asking managers, "To what extent do you think your personal values are important for the operation of the company?" Coded 0 to 1 in increments of 0.25. The greater the value of the variable, the more important are personal values.
Moral-driven operations	Survey question asking managers, "To what extent is the business operation based on strong moral values, e.g. keeping words, treating employees, customers and suppliers well, etc.?" Coded 0 to 1 in increments of 0.25. The greater the value of the variable, the greater emphasis on morals.

Introduction

Empirical Strategy

We estimate the impact of the CEO distance to work on the evaluation of the working environment from workplant visits.

We extend by a) replacing the 3rd party measure of working environment with an employee based survey measure; and by) replacing CEO distance with a value based subjective measure of neighbourhood being important.

We provide causal evidence from two sources: a) Within firm variation in CEO home to *plant* distance for multiplant firms; and, b) Within firm variation in CEO home to *firm* distance from CEO changes and from CEOs moving home addresses.

We test 3 channels: Social interaction, place attachment and better management practices.

Finally, we rebute the capturing story by documenting a positive relationship between neighbourhood CEOs and Corporate performance.

Employee Based Measures

Employees perception of the working environment (WEH survey) and NBH CEOs. We confirm that working enivornment is better when the CEO lives near.

VARIABLES	(1) WE Score	(2) Psycho-Social	(3) Chemical	(4) Health	(5) Prioritise w.e.	(6) Involvement	(7) Engagement	(8) Energy
CEO Distance residence=work	0.240***	0.0759***	-0.00917	0.0427**	0.0483***	0.0491***	0.0582***	0.0377**
	(0.0893)	(0.0206)	(0.0178)	(0.0204)	(0.0168)	(0.0168)	(0.0177)	(0.0159)
CEO birth place equal to workplace	-0.00802	0.0374*	-0.00867	0.0271	-0.0190	-0.00294	0.0127	0.00975
	(0.0949)	(0.0217)	(0.0185)	(0.0214)	(0.0176)	(0.0177)	(0.0187)	(0.0168)
CEO education	0.0822***	0.00738	0.0109***	0.00286	0.0175***	0.0252***	0.00606	0.00605*
	(0.0192)	(0.00450)	(0.00379)	(0.00441)	(0.00361)	(0.00373)	(0.00397)	(0.00353)
Male CEO dummy	-0.127	-0.0465	0.0367	0.0220	-0.0717***	-0.0384	-0.0278	-0.00777
	(0.129)	(0.0316)	(0.0278)	(0.0328)	(0.0260)	(0.0261)	(0.0278)	(0.0249)
CEO age	-0.000319	-0.00147	0.000281	0.00246**	-0.00197**	-0.00325***	-0.00214**	-0.000745
	(0.00448)	(0.00102)	(0.000888)	(0.000998)	(0.000826)	(0.000838)	(0.000892)	(0.000791)
Ln(Plant,property and equipment)	0.136***	0.0147***	0.0205***	0.0258***	0.0134***	0.0114**	0.0112**	0.00759*
	(0.0247)	(0.00568)	(0.00486)	(0.00593)	(0.00469)	(0.00469)	(0.00498)	(0.00443)
Ln(Employees)	-0.467***	-0.125***	-0.0317***	-0.0657***	-0.0193**	-0.0809***	-0.0612***	-0.0440***
	(0.0397)	(0.00918)	(0.00787)	(0.00957)	(0.00763)	(0.00769)	(0.00808)	(0.00716)
Ln(Firm age)	0.115**	0.00775	0.0257***	0.0369***	0.00464	0.00186	-0.0100	-0.000649
	(0.0482)	(0.0109)	(0.00956)	(0.0111)	(0.00891)	(0.00901)	(0.00957)	(0.00850)
Constant	-1.806	0.210	-0.946**	-0.564	2.891***	3.042***	4.219***	3.566***
	(1.163)	(0.620)	(0.370)	(0.380)	(0.228)	(0.298)	(0.310)	(0.150)
Observations	17,619	17,619	17,619	17,619	16,511	16,636	16,941	16,936
R-squared	0.160	0.074	0.205	0.049	0.051	0.071	0.056	0.039
Municipality FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

CEO distance to work and working environment 3rd Party Observation

VARIABLES	(1) Remark	(2) Remark	(3) Remark	(4) Remark	(5) Remark	(6) Remark	(7) Remarks/ Employees	(8) Remarks/ Employees	(9) Remarks/ Employees	(10) Remarks/ Employees
CEO residence equal to workplace	-0.0376***	-0.0326***	-0.0243***				-0.0585***	-0.0353***		
	(0.00368)	(0.00373)	(0.00405)				(0.00557)	(0.00383)		
Ln(CEO Distance home to work)				0.0122***	0.0104***	0.00860***			0.00819***	0.00564***
				(0.00164)	(0.00167)	(0.00181)			(0.00117)	(0.00113)
Mean employee distance			-3.05e-05			0.000175*		-8.06e-05		1.41e-05
			(8.11e-05)			(0.000102)		(6.50e-05)		(6.69e-05)
CEO education	-0.00567***	-0.00634***	-0.00559***	-0.00479***	-0.00548***	-0.00462***	-0.00274**	-0.00186**	-0.00318***	-0.00233***
	(0.000905)	(0.000903)	(0.000975)	(0.00105)	(0.00105)	(0.00112)	(0.00109)	(0.000834)	(0.000731)	(0.000742)
Male CEO dummy	0.0104	0.0111*	0.00968	0.0129*	0.0135*	0.0120	0.00233	0.00516	0.0118**	0.00845*
	(0.00670)	(0.00669)	(0.00739)	(0.00764)	(0.00764)	(0.00842)	(0.00869)	(0.00594)	(0.00482)	(0.00504)
CEO age	-0.000647***	-0.000572***	-0.000632***	-0.000835***	-0.000756***	-0.000786***	-0.000105	-0.000350**	-0.000441***	-0.000372**
	(0.000194)	(0.000194)	(0.000206)	(0.000223)	(0.000222)	(0.000235)	(0.000246)	(0.000170)	(0.000152)	(0.000150)
Ln(Plant,property and equipment)	-0.00504***	-0.00463***	-0.00395***	-0.00626***	-0.00590***	-0.00425***	0.00633***	0.00494***	-0.000462	0.00161*
	(0.00124)	(0.00124)	(0.00135)	(0.00140)	(0.00140)	(0.00153)	(0.00154)	(0.00128)	(0.000965)	(0.000978)
Ln(Employees)	0.108***	0.108***	0.0878***	0.115***	0.114***	0.0906***	-0.0955***	-0.0963***	-0.0593***	-0.0765***
	(0.00203)	(0.00203)	(0.00235)	(0.00241)	(0.00241)	(0.00277)	(0.00627)	(0.00410)	(0.00203)	(0.00216)
Ln(Firm age)	-0.0167***	-0.0175***	-0.0170***	-0.0156***	-0.0160***	-0.0162***	-0.0116***	-0.0103***	-0.0112***	-0.0108***
	(0.00219)	(0.00219)	(0.00234)	(0.00249)	(0.00249)	(0.00265)	(0.00303)	(0.00228)	(0.00186)	(0.00185)
Constant	0.355	0.354	-0.0363	-0.148	-0.142	-0.0953	0.674**	0.376***	0.330***	0.349***
	(0.374)	(0.374)	(0.0724)	(0.0926)	(0.0928)	(0.0758)	(0.281)	(0.0805)	(0.0529)	(0.0732)
Observations	77,857	77,857	70,593	62,100	62,100	57,290	77,857	70,593	62,100	57,290
R-squared	0.088	0.093	0.064	0.094	0.099	0.068	0.061	0.086	0.072	0.095
Municipality FE	No	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Robust standard errors in parentheses

Neighbourhood attachment as a personal value based on Value Based CEO survey 2015.

Dependent variables: Dummy for any remark	(1)	(2)	(3)	(4)
Neighbourhood: importance of engagement (personally)	-0.0813**			
	(0.0367)			
Neighbourhood: importance of engagement (firm)		-0.0990**		
		(0.0387)		
Importance of personal values			-0.0127	
			(0.0457)	
Moral-values driven operations				-0.0127
				(0.0457)
CEO education	-0.0054	-0.0055	-0.0045	-0.0045
	(0.0048)	(0.0048)	(0.0048)	(0.0048)
Male CEO dummy	0.0048	0.0026	0.0051	0.0051
	(0.0422)	(0.0420)	(0.0423)	(0.0423)
CEO age	0.0003	0.0003	0.0002	0.0002
	(0.0011)	(0.0011)	(0.0011)	(0.0011)
Ln(Plant, property and equipment)	-0.0020	-0.0021	-0.0028	-0.0028
	(0.0069)	(0.0069)	(0.0069)	(0.0069)
Ln(Employees)	0.0724***	0.0739***	0.0727***	0.0727***
	(0.0127)	(0.0127)	(0.0127)	(0.0127)
Ln(Firm age)	-0.0162	-0.0163	-0.0168	-0.0168
	(0.0114)	(0.0113)	(0.0113)	(0.0113)
Constant	0.398**	0.417**	0.357*	0.357*
	(0.180)	(0.180)	(0.186)	(0.186)
Observations	3,336	3,336	3,336	3,336
R-squared	0.131	0.132	0.130	0.130
Municipality FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes

37

Causal Evidence: Variation in CEO exposure in multi-plant firms. We measure the WE score at the plant level and look at CEO home to plant distance including firm fixed effects.

Table 3: CEO-plant distance and working environment in multi-plant firms controlling for headquarter effect

This appendix table replicates the results contained in the Table 6 adding as additional explanatory variable a dummy equal to one for the firm's headquarters, zero otherwise. The dependent variables and other explanatory variables are identical to those in Table 6. Firm-clustered standard errors are reported in parentheses. ***, **, and * correspond to statistical significance at the 1%, 5%, and 10% level, respectively.

Dependent variables:	(1) We Score	(2) Psycho-Social	(3) Chemical	(4) Health	(5) Prioritize We	(6) Involvement	(7) Engagement	(8) Energy
Ln(CEO distance residence to plant)	-0.1800***	-0.0096	-0.0450***	-0.0207**	-0.0042	-0.0074	-0.0283***	-0.0120
	(0.056)	(0.009)	(0.012)	(0.009)	(0.007)	(0.008)	(0.009)	(0.008)
HQ	0.4690***	0.1220***	0.0648*	0.0860**	0.0482	0.0550	0.1020**	0.0904**
	(0.180)	(0.045)	(0.036)	(0.042)	(0.032)	(0.034)	(0.041)	(0.036)
CEO education	0.0306	0.0049	0.0046	0.0031	0.0081	0.0204***	0.0044	0.0076
	(0.038)	(0.008)	(0.007)	(0.008)	(0.007)	(0.007)	(0.009)	(0.008)
Male CEO dummy	0.2240	0.0554	-0.0164	0.0516	0.0003	0.0023	0.0109	0.0190
	(0.187)	(0.045)	(0.038)	(0.042)	(0.046)	(0.043)	(0.038)	(0.031)
CEO age	0.01380	0.0015	0.0030**	0.0017	0.0005	0.0010	0.0007	0.0029*
	(0.010)	(0.002)	(0.001)	(0.002)	(0.002)	(0.002)	(0.003)	(0.002)
Observations	21,060	21,060	21,060	21,060	20,411	20,434	21,050	21,051
R^2	0.364	0.295	0.345	0.245	0.345	0.313	0.271	0.242
Firm dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Ln(CEO distance residence to plant)	-0.2260***	-0.0087	-0.0643***	-0.0268**	0.0022	-0.0006	-0.0287***	-0.0159*
	(0.069)	(0.011)	(0.014)	(0.010)	(0.008)	(0.009)	(0.010)	(0.009)
HQ	0.6210**	0.1920***	0.1110*	0.1060*	0.0856*	0.1040**	0.0635	0.0762*
	(0.266)	(0.067)	(0.063)	(0.064)	(0.052)	(0.048)	(0.050)	(0.046)
Observations	17,445	17,445	17,445	17,445	16,901	16,910	17,438	17,438
R^2	0.339	0.270	0.328	0.221	0.339	0.306	0.254	0.230
Firm x Year dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

19

38

Causal evidence form variation in CEO distances between 2012 and 2018: We look at how changes in CEO distances is correlated with changes in WE.

VARIABLES	(1) Change in WE Score	(2) Change in Psycho-Social	(3) Change in Chemical	(4) Change in Health	(5) Change in Prioritise w.e.	(6) Change in Involvement	(7) Change in Engagement	(8) Change in Energy
CEO Change x Increase in Dist	-2.115***	-0.851**	0.0534	-1.133**	-0.0959***	-0.0843***	-0.0217	-0.0786***
	(0.812)	(0.355)	(0.0334)	(0.542)	(0.0326)	(0.0225)	(0.0355)	(0.0273)
CEO Change x Decrease in Dist	1.980	0.626	0.0117	1.520*	0.0876***	0.00763	0.0954**	0.0992***
	(1.358)	(0.583)	(0.0815)	(0.850)	(0.0335)	(0.0256)	(0.0425)	(0.0333)
CEO education	-0.575**	-0.115	-0.0129	-0.369***	0.00616	0.0201***	0.00356	0.00227
	(0.277)	(0.120)	(0.0129)	(0.136)	(0.00644)	(0.00673)	(0.00714)	(0.00649)
Male CEO dummy	1.482	0.185	0.00166	0.955	-0.0786*	-0.0992**	-0.0775*	-0.0457
	(1.701)	(0.763)	(0.0874)	(0.846)	(0.0410)	(0.0422)	(0.0438)	(0.0400)
CEO age	-0.0648	-0.0242	-0.00613*	-0.0314	0.00155	0.00143	0.00366**	0.000423
	(0.0706)	(0.0305)	(0.00341)	(0.0337)	(0.00159)	(0.00161)	(0.00161)	(0.00148)
Constant	0.923	-2.046	1.185	3.741	-0.307	-0.0199	-0.413*	0.0828
	(12.81)	(4.973)	(0.780)	(5.323)	(0.225)	(0.211)	(0.212)	(0.174)
Observations	7,327	7,327	7,327	7,327	7,688	7,726	8,120	8,123
R-squared	0.045	0.044	0.033	0.048	0.033	0.036	0.038	0.038
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry-Time FE	No	No	No	No	No	No	No	No

39

Channel : Social Interaction:

Are WE better when CEO and employees have kids in the same school?

Table: Role of social interactions: evidence from children's schools

	School Test for WE Score							
VARIABLES	(1) Remark	(2) Remark	(3) Remark	(4) Remark	(5) WE Score	(6) WE Score	(7) WE Score	(8) WE Score
Firm-year level school test	-0.0246***	-0.0215**			0.290**	0.279**		
	(0.00886)	(0.00892)			(0.135)	(0.136)		
Firm-level school test			-0.0211***	-0.0187***			0.227**	0.218**
			(0.00596)	(0.00601)			(0.0930)	(0.0937)
CEO Distance residence=work		-0.0212***		-0.0205***		0.110		0.0998
		(0.00539)		(0.00541)		(0.0946)		(0.0950)
CEO - education years	-0.00479***	-0.00496***	-0.00480***	-0.00496***	0.0692***	0.0699***	0.0696***	0.0703***
	(0.00128)	(0.00128)	(0.00128)	(0.00128)	(0.0197)	(0.0197)	(0.0197)	(0.0197)
Male dummy	0.0193*	0.0192*	0.0198*	0.0196*	-0.172	-0.172	-0.175	-0.175
	(0.0103)	(0.0103)	(0.0103)	(0.0103)	(0.130)	(0.130)	(0.130)	(0.130)
CEO - Age	-0.000416	-0.000415	-0.000465	-0.000459	-0.00393	-0.00398	-0.00408	-0.00412
	(0.000293)	(0.000293)	(0.000293)	(0.000293)	(0.00475)	(0.00475)	(0.00474)	(0.00474)
Ln(Plant,property and equipment)	-0.00433**	-0.00453**	-0.00433**	-0.00452**	0.131***	0.132***	0.132***	0.133***
	(0.00182)	(0.00183)	(0.00183)	(0.00183)	(0.0259)	(0.0259)	(0.0259)	(0.0259)
Ln(Employees)	0.0937***	0.0925***	0.0944***	0.0931***	-0.420***	-0.416***	-0.427***	-0.422***
	(0.00305)	(0.00306)	(0.00305)	(0.00307)	(0.0428)	(0.0430)	(0.0430)	(0.0432)
Ln(Firm age)	-0.0123***	-0.0119***	-0.0122***	-0.0119***	0.106**	0.104**	0.101**	0.0993**
	(0.00308)	(0.00308)	(0.00308)	(0.00308)	(0.0500)	(0.0500)	(0.0500)	(0.0500)
Constant	0.316	0.333	0.316	0.332	-0.393	-0.444	-0.349	-0.398
	(0.364)	(0.361)	(0.365)	(0.361)	(0.599)	(0.599)	(0.599)	(0.600)
Observations	41,101	41,101	41,101	41,101	16,228	16,228	16,228	16,228
R-squared	0.080	0.081	0.080	0.081	0.156	0.156	0.156	0.156
Municipality FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Neighbourhood Firms

40/20

20

40

But does that imply that NBH CEOs are captured by employees against the interests of the owners? NBH CEOs and performance.

	(1)	(2)	(3)	(4)
Dependent variables: ROA				
CEO residence equal to workplace	0.0278***	0.0259***		
	(0.005)	(0.004)		
Ln(CEO Distance home to work)			-0.0059***	-0.0046***
			(0.002)	(0.001)
Ln(Plant,property and equipment)	0.0182**	0.0178**	0.0151*	0.0146*
	(0.007)	(0.007)	(0.009)	(0.009)
Ln(Employees)	-0.0051**	-0.0046**	-0.0007	-0.0002
	(0.002)	(0.002)	(0.002)	(0.002)
Ln(Firm age)	0.0088**	0.0092**	0.0040	0.0047
	(0.004)	(0.004)	(0.006)	(0.005)
CEO - Age	-0.0011***	-0.0012***	-0.0014***	-0.0015**
	(0.000)	(0.000)	(0.001)	(0.001)
Male CEO dummy	-0.0112	-0.0125	-0.0080	-0.0095
	(0.008)	(0.008)	(0.010)	(0.011)
CEO education	-0.0009	-0.0009	-0.0015	-0.0013
	(0.002)	(0.002)	(0.003)	(0.003)
Constant	-0.1490	-0.1415	-0.1057	-0.0973
	(0.174)	(0.173)	(0.228)	(0.225)
Observations	77,857	77,857	62,100	62,100
R-squared	0.006	0.007	0.006	0.007
Municipality FE	No	Yes	No	Yes
Year FE	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes

41

Channel 2: Place Attachment, family firms.

- We control for birthplace = firm place see also Bennedsen et al 2025 (Family Firms and Working Environment)

VARIABLES	(1) Remark	(2) Remark	(3) WE Score	(4) WE Score
CEO residence equal to workplace	-0.0326***	-0.0331***	2.589***	2.745***
	(0.00373)	(0.00397)	(0.817)	(0.865)
CEO birth place equal to workplace		0.00326		0.842
		(0.00428)		(0.911)
CEO education	-0.00634***	-0.00517***	0.490***	0.518***
	(0.000903)	(0.000972)	(0.173)	(0.186)
Male CEO dummy	0.0111*	0.00625	-0.822	-0.909
	(0.00669)	(0.00731)	(1.207)	(1.306)
CEO age	-0.000572***	-0.000496**	0.00346	0.00716
	(0.000194)	(0.000204)	(0.0406)	(0.0429)
Ln(Plant,property and equipment)	-0.00463***	-0.00369***	0.933***	1.187***
	(0.00124)	(0.00133)	(0.226)	(0.241)
Ln(Employees)	0.108***	0.107***	-4.070***	-4.620***
	(0.00203)	(0.00217)	(0.367)	(0.389)
Ln(Firm age)	-0.0175***	-0.0161***	1.085**	1.149**
	(0.00219)	(0.00232)	(0.434)	(0.464)
Constant	0.354	0.468	-4.471	-9.578
	(0.374)	(0.527)	(17.43)	(18.62)
Observations	77,857	69,192	19,923	17,619
R-squared	0.093	0.094	0.086	0.091
Municipality FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes

Neighbourhood Firms

42/20

21

42

Channel 3: NBH CEOs have more time and thus implement better management practices in general.

Use Management practice survey in Denmark 2018

Dependent variables:	(1) What do you do when you have a problem?	(2) How often are KPIs revised?	(3) How often are KPIs from prod tech used?	(4) How often is feedback from managers used?	(5) How often is feedback from employees used?	(6) How often is predictive analytics used?
CEO residence equal to workplace	-0.489**	0.289	0.947*	0.783*	0.916**	0.388
	(0.2160)	(0.4790)	(0.5700)	(0.4430)	(0.4580)	(0.6330)
CEO education	0.0083	-0.0514***	-0.0122	-0.0073	-0.0130	0.0460***
	(0.0051)	(0.0102)	(0.0128)	(0.0101)	(0.0106)	(0.0140)
Male CEO dummy	-0.0824**	-0.1000	0.0330	0.0289	-0.0199	0.0078
	(0.0361)	(0.0742)	(0.1000)	(0.0715)	(0.0754)	(0.1010)
CEO age	0.0062***	-0.0027	-0.0004	-0.0022	-0.0041	-0.0035
	(0.0013)	(0.0027)	(0.0034)	(0.0027)	(0.0028)	(0.0037)
Ln(Plant, property and equipment)	0.0107*	0.0053	-0.0146	-0.0033	-0.0044	-0.0238
	(0.0063)	(0.0127)	(0.0159)	(0.0124)	(0.0132)	(0.0172)
Ln(Employees)	0.0213	-0.0039	-0.161***	-0.0501*	-0.0032	-0.225***
	(0.0139)	(0.0272)	(0.0342)	(0.0270)	(0.0282)	(0.0376)
Ln(Firm age)	-0.0330**	-0.143***	0.0812*	0.0058	0.0095	0.142***
	(0.0167)	(0.0334)	(0.0426)	(0.0327)	(0.0340)	(0.0458)
Constant	2.005***	3.434***	3.461***	2.701***	2.777***	4.471***
	(0.1300)	(0.2590)	(0.3240)	(0.2550)	(0.2690)	(0.3580)
Observations	3,102	2,449	1,961	2,931	2,740	2,478
R-squared	0.016	0.022	0.030	0.005	0.003	0.034
Municipality FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes

43

Summing UP Neighborhood CEOs and WE

- **Neighbourhood CEO provides better working environment:** CEO localness is significant driver of firms' workplace quality.
- This holds both to variations in measuring the working environment (3rd party vs employee based measures) and to variations in the definition of neighbourhood CEOs (physical vs mental definition).
- Causal evidence from multiplant firms and from CEO changes.
- We provide evidence for social interaction effect on working environment. Not driven by place attachment/family firms.
- Owners are better off.

Back to Hart and Zingales: We confirm that local CEOs internalize more externalities.

The Organizational Economics of Working Environment

Part 1: Introduction and Motivation:
- Why do we (Economists) care about Working Environment
- Data: What do we have to work with?

Part 2) The (New) Organizational Economics Approach:
a) **Firm Level** Data Construction and Verification
b) Firm Focus: Does WE matter in the production function?
c) Employee Focus: WE and Employee Health.

Part 3) Causal Analysis of Determinants of GOOD WE: Neighborhood CEOs

Part 4) How to do research in the OEWE? Some thoughts and open questions?

45

Thoughts & Inspiration

With 3.5 billion people working in private firms, this is obviously an important research area.

Workplace environment is in the intersection of multiple fields. Inspiring because of methodological synergies: Survey data, register data, RCTs, case studies etc etc.

By introducing the "organization of the firm" into the research agenda it is possible to raise new unanswered research questions around the interplay between firm organization, the decomposition of workplace environment and corporate and employee outcomes. EXX:
- What are the synergies between the different elements of WE?
- Do WE have causal effects on firm policies and firm outcomes?
- Do different types of owners/ CEOs /leadership styles / leadership values/ management practices impact the working environment.

46