Females in Leadership positions

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Introduction

- Conditional gender pay gap is substantive in Germany
- Other indicators also show a gender-gap mainly to the disadvantage of females
- The share of females in leadership positions is lower (compared to men)
- The proportion of females acting in a leadership positions accounts for 28,9% in Germany (EU data 2022, 24,1% according to Statista 2024)
- Reasons, among others:
  - unequal chances, glass ceiling, discrimination?
  - individual taste heterogeneity (by gender)?

Introduction (II)

- E.g. „females have a x percentage points lower chance to get in a leadership position.“
- Or: females have a x percentage points lower chance to get in a leadership position, when they collect one additional year of labour market experience“
- Such statement implies: females are compared to men

<u>However</u>

- Females in leadership positions (LSP) may differ from females in non-leadership positions
  - In which characteristics?
  - When do females change into leadership positions?
  - Are there regional characteristics, that promote fem. in LSP?

Literature

- Resource dependence theory
  Aufgrund innerbetrieblicher Betrachtungen sind Frauen in Führungspositionen aufgrund von Risikoabwägungen wünschenswert (Blum 1994)
- Leadership Position: „Always available“ + norms
  -> against females in LSP (Hadler 1995)
- Females are less career oriented (Hadler 1995)
- Firm characteristics are correlated with fem. in LSP (Kleinert 2007)
- Females promote each other but also competition effects (Kunze/Miller 2017, Bossler et al. 2020)
- Fem LSP -> no childcare issue, rather supporting partners (Funke et al. 2020)

Identification

- Female-male-comparison in a latent utility setting
$$u_i^* = X_i\beta + \delta D_{F,i} + \epsilon_i$$
with $D_{F,i}$ represents an indicator variable to be Female
- δ is expected to be negative and indicates the lower "chance" of females to be in a LSP; conditional on X's
- In an interaction-term approach $u_i^* = X_i\beta + \delta D_{F,i}X_i + \epsilon_i$,
  - δ now represents the difference in slopes
(relative to men, see example on the slide before)
  - Let X be e.g. an indicator for being high-skilled (ref. low-sk.), then the effect for females in LSP relative to non-LSP females can be computed ($\beta + \delta$), but is cumbersome
  - In a generalized setting the Oaxaca-Blinder decomposition could be employed (using logit/probit)

Identification (II)

- Female-female-comparison in a latent utility setting

$$u_i^* = X_i\beta + \epsilon_i$$

- β represents now the correlation of characteristics X for a female to be in a LSP; conditional on other X's
- E.g. how "likely" is it to be in a LSP, when the female is high-skilled relative to low-skilled females
- Thus, standard logit/probit estimation can be performed

Identification (III)

- Female-female-comparison in a latent utility setting

$$u_i^* = X_i\beta + \epsilon_i$$

- The sign (and significance) of β provides insights into the correlation structure of X‘s with biing in a LSP
- Unobserved individual heterogeneity may bias β
- Nonlinear nature of lim.dep.var. models:
  - Incidental parameter problem with dummy-approach
  - Invalid within-transformation
- Mundlacks approach (disadvantage: time consistant X‘s)
- Card-Heining-Kline-Effects
- Samples
  - always/never in LSP
  - only females, that are at least once in LSP

Data basis

- IAB Integrated Employment Biografie (10% sample)
- Administrative data of individuals working subject social security contributions
- Panel 2012 to 2018; update to newest end 2023!
- LHS: 4th digit occupational code on LSP
  (Aufsichts- und Führungskräfte)
- Age 25+

Beobachtungen	Absolute Anzahl
Gesamt	13.181.631
abs. Personen	1.728.125
abs. Betriebe	872.143

Explanatory variables

- Individual
  (age (categorized), foreigner + naturalized, mother)
- Vocational training+ further training
  (no voc. Qualification, vocational education, university degree; +“Meister/Pollier“)
- LM-Experience
  (share of time in unemployment; duration in the current firm, average duration in firms, no of distinct employers)
- Selectivity related variables
  (agglom-urban-peripheral region + East Germany, 2-digit industries, 2-digit occupations, year indicators, task level, parttime)
- Firm controls
  (employment size, share females, share foreigners, share human capital)
- To Do: Regional variables

Some first results

	A1	A2	A5	A6
Regionaltyp (Referenzgruppe = Agglomerationsraum) (β7)				
Urbaner Raum	0.035**	0.142***	0.153***	0.154***
	(0.016)	(0.018)	(0.018)	(0.018)
Ländlicher Raum	0.066***	0.168***	0.179***	0.185***
	(0.017)	(0.019)	(0.019)	(0.019)
Neue Bundesländer (β1)	0.266***	0.416***	0.384***	0.389***
	(0.017)	(0.019)	(0.019)	(0.019)
Altersgruppe (Referenzgruppe = 25-34) (β8)				
35-44	0.460***	0.645***	0.653***	0.665***
	(0.012)	(0.013)	(0.013)	(0.013)
45-54	0.487***	0.520***	0.559***	0.577***
	(0.014)	(0.016)	(0.016)	(0.016)
55+	0.379***	0.250***	0.309***	0.333***
	(0.017)	(0.019)	(0.019)	(0.020)
Mutter (Status) (β2)	0.018*	0.163***	0.150***	0.150***
	(0.010)	(0.010)	(0.010)	(0.011)
Migrantin (β3)	-0.557***	-0.381***	-0.301***	-0.305***
	(0.021)	(0.023)	(0.023)	(0.025)
Eingebürgert (β4)	0.413***	0.257***	0.192***	0.196***
	(0.025)	(0.028)	(0.028)	(0.030)
Höchster Bildungsabschluss (Referenzgruppe = ohne Abschluss) (β11)				
Lehre	0.391***	0.250***	0.070***	(.)
	(0.022)	(0.024)	(0.024)	
Akademische Reife	1.199***	0.176***	0.028	-0.036**
	(0.026)	(0.029)	(0.028)	(0.018)
Meistertitel (β5)	0.652***	0.070***	0.067***	0.078***
	(0.017)	(0.021)	(0.021)	(0.020)
Teilzeitarbeit (β6)	-1.203***	-0.708***	-0.647***	-0.619***
	(0.014)	(0.016)	(0.016)	(0.016)
Dauer der Betriebszugehörigkeit (Referenzgruppe = bis zu 2 Jahre) (β9)				
über 2 bis 4 Jahre	0.025*	-0.006	-0.016	-0.024
	(0.014)	(0.016)	(0.016)	(0.016)
über 4 bis 6 Jahre	0.013	-0.014	-0.030*	-0.036**
	(0.016)	(0.018)	(0.018)	(0.018)
über 6 bis 8 Jahre	0.046**	0.016	-0.004	-0.009
	(0.018)	(0.020)	(0.020)	(0.021)
über 8 bis 10 Jahre	0.052***	0.001	-0.026	-0.037
	(0.020)	(0.023)	(0.023)	(0.023)
über 10 bis 15 Jahre	0.160***	0.069***	0.041**	0.035*
	(0.018)	(0.020)	(0.020)	(0.021)
über 15 Jahre	0.259***	0.081***	0.048**	0.042*
	(0.019)	(0.022)	(0.022)	(0.022)
Anzahl Betriebe (Referenzgruppe = 1 Betrieb) (β10)				
2 bis 5	0.054**	0.059*	0.066**	0.058*
	(0.027)	(0.031)	(0.031)	(0.031)
6 bis 10	0.146***	0.186***	0.189***	0.184***
	(0.028)	(0.032)	(0.032)	(0.032)
über 10	0.219***	0.275***	0.271***	0.270***
	(0.031)	(0.034)	(0.035)	(0.035)
Anteil der Arbeitslosigkeit an Erwerbsleben (Referenzgruppe = unter 5%) (β12)				
über 5 bis 10%	-0.369***	-0.159***	-0.153***	-0.165***
	(0.013)	(0.015)	(0.015)	(0.016)
über 10 bis 25%	-0.612***	-0.289***	-0.262***	-0.279***
	(0.017)	(0.019)	(0.019)	(0.020)
über 25%	-1.117***	-0.625***	-0.519***	-0.535***
	(0.023)	(0.028)	(0.028)	(0.030)
Betriebsgröße (Referenzgruppe = bis unter 10 Beschäftigte) (β13)				
11-49 Beschäftigte	0.062***	-0.007	0.003	-0.005
	(0.015)	(0.017)	(0.017)	(0.017)
50-249 Beschäftigte	0.129***	-0.028	-0.003	-0.009
	(0.018)	(0.021)	(0.021)	(0.021)
250 und mehr Besch.	0.128***	-0.204***	-0.164***	-0.174***
	(0.028)	(0.032)	(0.032)	(0.032)
Anteil Frauen im B. (β14)	1.155***	1.351***	1.385***	1.340***
	(0.039)	(0.044)	(0.044)	(0.045)
Anteil Migrant*innen im Betrieb (β15)	1.019***	1.042***	1.132***	1.158***
	(0.041)	(0.049)	(0.050)	(0.053)
Anteil (hoch-) qualifizierter Beschäftigter im Betrieb (β16)	2.096***	1.619***	1.564***	1.498***
	(0.026)	(0.032)	(0.032)	(0.031)
Personeneffekte (CHK)	(.)	1.069***	1.014***	1.026***
		(0.010)	(0.010)	(0.010)
Firmeneffekte (CHK)	(.)	0.204***	0.187***	0.193***
		(0.009)	(0.009)	(0.009)
Konstante	-5.677***	-5.459***	-5.072***	-4.927***
	(0.106)	(0.125)	(0.130)	(0.130)
Beobachtungen (N)	12479730	8187002	6909991	6383017
Betriebscluster	807204	565233	520646	494834
Pseudo-R^2	0.154	0.201	0.185	0.184

Source: BT Yulia Balashkova (Supervisor: S. Brunow in coop. with M. Fuchs

Some first results (I)

- All results show their expected signs
- Pseudo R2 around 0.1-0.25
- About 3% of all females hold a leadership position

	A1	A2	A5	A6
Regionaltyp (Referenzgruppe = Agglomerationsraum) (β7)				
Urbaner Raum	0.035**	0.142***	0.153***	0.154***
	(0.016)	(0.018)	(0.018)	(0.018)
Ländlicher Raum	0.066***	0.168***	0.179***	0.185***
	(0.017)	(0.019)	(0.019)	(0.019)
Neue Bundesländer (β1)	0.266***	0.416***	0.384***	0.389***
	(0.017)	(0.019)	(0.019)	(0.019)
	Full sample	Incl. CHK	Excl. unskilled	Excl. unskilled+ no degrees

Source: BT Yulia Balashkova (Supervisor: S. Brunow in coop. with M. Fuchs

Some first results (II)

- Sample: females that had at least one LSP in 2012-2018

	B2	B5	B6
Regionaltyp (Referenzgruppe = Agglomerationsraum) (β7)			
Urbaner Raum	0.124***	0.134***	0.130***
	(0.022)	(0.022)	(0.023)
Ländlicher Raum	0.144***	0.155***	0.157***
	(0.025)	(0.025)	(0.026)
Neue Bundesländer (β1)	0.019	0.002	0.002
	(0.023)	(0.024)	(0.023)
	Incl. CHK	Excl. unskilled	Excl. unskilled+ no degrees

Source: BT Yulia Balashkova (Supervisor: S. Brunow in coop. with M. Fuchs

Some first results (III)

- Full sample but Aufsichts-/Führungskraft getrennt

Aufsichtskräfte	M1	M2	M5	M6
Regionaltyp (Referenzgruppe = Agglomerationsraum) (β7)				
Urbaner Raum	-0.014	0.061**	0.075***	0.071**
	(0.025)	(0.027)	(0.027)	(0.028)
Ländlicher Raum	-0.004	0.037	0.051*	0.055*
	(0.027)	(0.029)	(0.029)	(0.030)
Neue Bundesländer (β1)	0.205***	0.275***	0.224***	0.222***
	(0.027)	(0.031)	(0.031)	(0.030)
Führungskräfte	**M1**	**M2**	**M5**	**M6**
Regionaltyp (Referenzgruppe = Agglomerationsraum) (β7)				
Urbaner Raum	0.074***	0.207***	0.214***	0.219***
	(0.021)	(0.023)	(0.023)	(0.023)
Ländlicher Raum	0.118***	0.271***	0.278***	0.285***
	(0.021)	(0.024)	(0.024)	(0.024)
Neue Bundesländer (β1)	0.310***	0.527***	0.506***	0.514***
	(0.023)	(0.025)	(0.025)	(0.025)
	Full sample	Incl. CHK	Excl. unskilled	Excl. unskilled+ no degrees

Source: BT Yulia Balashkova (Supervisor: S. Brunow in coop. with M. Fuchs

Results: what‘s going on in the East?

- C.p. in East Germany the likelihood for a female to get into a LSP is significantly higher compared to the West

➢Is it occupation-driven? Are too few males in these occ.?

➢Is it long-lasting spatial heterogeneity („GDR-Effekt“)

➢Biased male-female distribution in East Germany?

- Thus, comparison with males gets important and regional characteristics may explain in more detail, what is going on here.

Which female is most likely in a LSP?

Reading the coefficients reveals:

- Mothers about 45-54
- Not immigrated but „naturalisation neutralizes“
- Vocational training degree (Aufsichts-/Führungskraft);
  highly skilled rather „Führungskraft“;
  Meistertitel -> Aufsichts- but not Führungskraft
- Working fulltime (parttime=NO LSP)
- Never unemployed, experience in different firms, „longer“ in the current firm
- Larger firms, with higher shares of human capital, females (statistical artefact?), and migrants

What we intend to do next

- Get the new data and estimate with that much longer time period (2012-2023)
- Partners
- East Germany puzzle:
  Unemployment is higher in male-dominated occupations
  -> Specific situation, cultural factors, or labour market (tightness) argument
- Female share and female LSP share in industries
- (Regional) Labour markets and availability of male/female LSP potentials
- Estimate for males -> common X‘s and their slopes?
- Legal reforms 2015, 2021 („Quotenfrauen Vorstand“)

Conclusion

- Our very first evidence suggests regional heterogeneity in chances for females to get into a LSP
- Agglomeration regions are disadvantageous for females to get a LSP
- Esp. mothers of 45-54 years of age with a solid employment track, labour market experience in fulltime employment get most likely in LSP
- Special features between Aufsichts-/Führungskraft

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Thank you!