Universität Konstanz

How Much Wage Inequality is Acceptable? First Results from a Factorial Survey Study

Venice International University

Rational Choice Sociology: Theory and Empirical Applications

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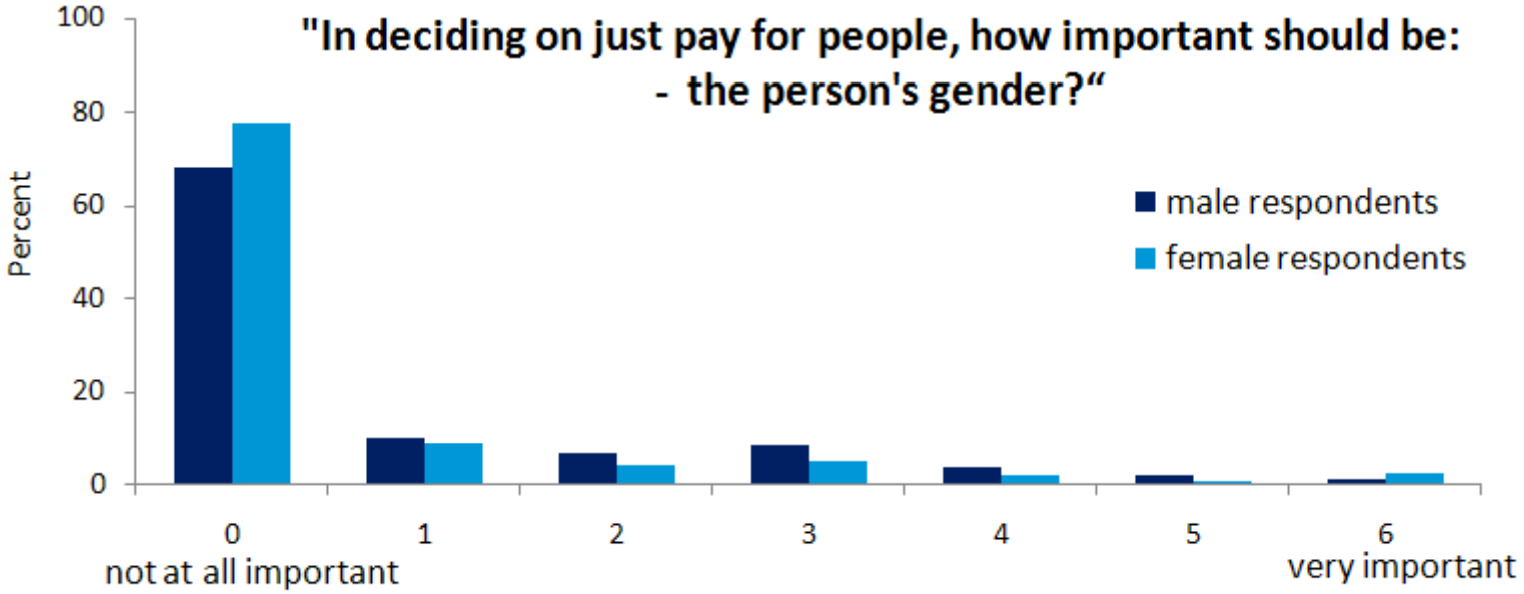
Introduction

- High (and increasing) wage inequalities in European countries.
- These are only partly explained by different human capital, working hours, labor market segregation.
- Theoretically, additional factors are discussed, e.g.:
  - Functional importance for society.
  - Bargaining power of labor unionists and professions.
  - Discrimination - e.g. of women and ethnic minorities.

Discrimination?

- After controlling for human capital, work experience, occupations and employers („job cells") in West Germany there is still a considerable unexplained gender wage gap: Women earn 12 percent less than men (Hinz/Gartner 2005, Gartner/Hinz 2009).
- This gap may or may not be caused by an illegal discrimination. At least with non experimental data there is no possibility to exclude *all* "unobserved heterogeneity".
- One hint may be the existence of "double standards" in just earnings for males and females. The more tolerated smaller wages for women are, the more easy it should be for discriminators to survive in the market. → Discriminatory attitudes as an necessary (but not sufficient) requirement for discrimination.
- But how can we measure fairness of incomes? Especially in case of legal norms forbidding discrimination?

Questioning by Items



Original question: „Welche Bedeutung sollten folgende Aspekte bei der Festsetzung eines gerechten Einkommens haben? – Geschlecht“; Survey „Einkommensgerechtigkeit in Deutschland“; N = 744 resp. N = 830

- Biased by social desirability?
- In which way should gender be important?

Questioning by Vignettes in a Factorial Survey

- Respondents evaluate short descriptions of fictional persons or situations („vignettes") in which certain elements („dimensions") are experimentally varied. For the research aim on hand descriptions of virtual employees are used:

A 35-year-old-man with vocational training is working as a programmer.
His gross income amounts € 2.500 per month.

According to your opinion, is the income of the described person fair or is it unfairly too high or too low?

-5 -4 -3 -2 -1 0 1 2 3 4 5

unfairly too low — fair — unfairly too high

- Due to the experimental variation the exact influence of single dimensions can be estimated and there is the possibility to create „contra-factual" situations for men and women.

Determining of Just Gender Pay Gaps

- By means of the multi-dimensional design „trade offs" between dimensions such as the just gender pay gaps (JGPG) can be determined.
- Technically, this is done by regression estimates:

$$Y_i = \beta_0 + \beta_1 \ln(wage_i) + \beta_2 sex_i + \ldots + \beta_k x_{ki} + \varepsilon_i \qquad (1)$$

Yi	= fairness evaluation of vignette i	X_k	= other variables (vignettes' or respondents')
ln(wage)	= log income	β_k	= regression coefficients
sex	= dummy variable (0 = male; 1 = female)	ε_i	= random error in judgment

The JGPG outweighs the influence of gender regarding the evaluations:

$$\beta_1 \ln(wage_{male} + JGPG) + \beta_2 sex_{female} = \beta_1 \ln(wage_{male}) \qquad (2)$$

Put in percent of the wage of men (%JGPG) and after transformations:

$$\%JGPG_l = \left(\exp\left(\frac{-\beta_2}{\beta_1}\right) - 1\right) * 100 \qquad (3)$$

Just Gender Pay Gaps in Existing Factorial Surveys

- Existing research so far leads to very different results. E.g.:

Authors	Sample	JGPG found?
Jasso/Webster 1997	General Population, USA 1974	yes, in favor of men (15%)
Jasso/Webster 1999	Student Sample, USA 1995	yes, in favor of women (6%)
Jann 2003	General Population, Switzerl. 2001	yes, in favor of men (?)
Jann 2007	General Population, Switzerl. 2006/7	no

- Age-effects? Cohort-effects? Effects of methodological design?
  This is still puzzling.

- Our 2 main research questions therefore are:

  1) Is there a JGPG in Germany? If so, what are underlying mechanisms?
  2) Do we gain valid measurements by factorial surveys?

Structure

1. Motivation and Research Aims
2. Theory and Hypotheses
3. Data and Results
4. Summary and Conclusions

Hypotheses - Discrimination

#	Hypotheses	Theory/Mechanism
H1	There is a JGPG in favor of men. This is especially true in case of…	
H2a H2b	- male respondents - respondents with traditional gender role beliefs	Tastes for discrimination (e.g. Becker 1971);
H3	- few information on employees	Statistical discrimination (e.g. Aigner/Cain 1977; Phelps 1972)

Hypotheses – Methodological Bias

#	Hypotheses	Theory/Mechanism
	There is a higher JGPG in case of…	
H4a H4b H4c	- high complexity / many dimensions - low need for social approval or high anonymity - between-variation instead of within-variation of gender	Social desirability bias/ reactivity (e.g. Esser 1986, 1990; Stocké 2004) / use of heuristics

Schedule

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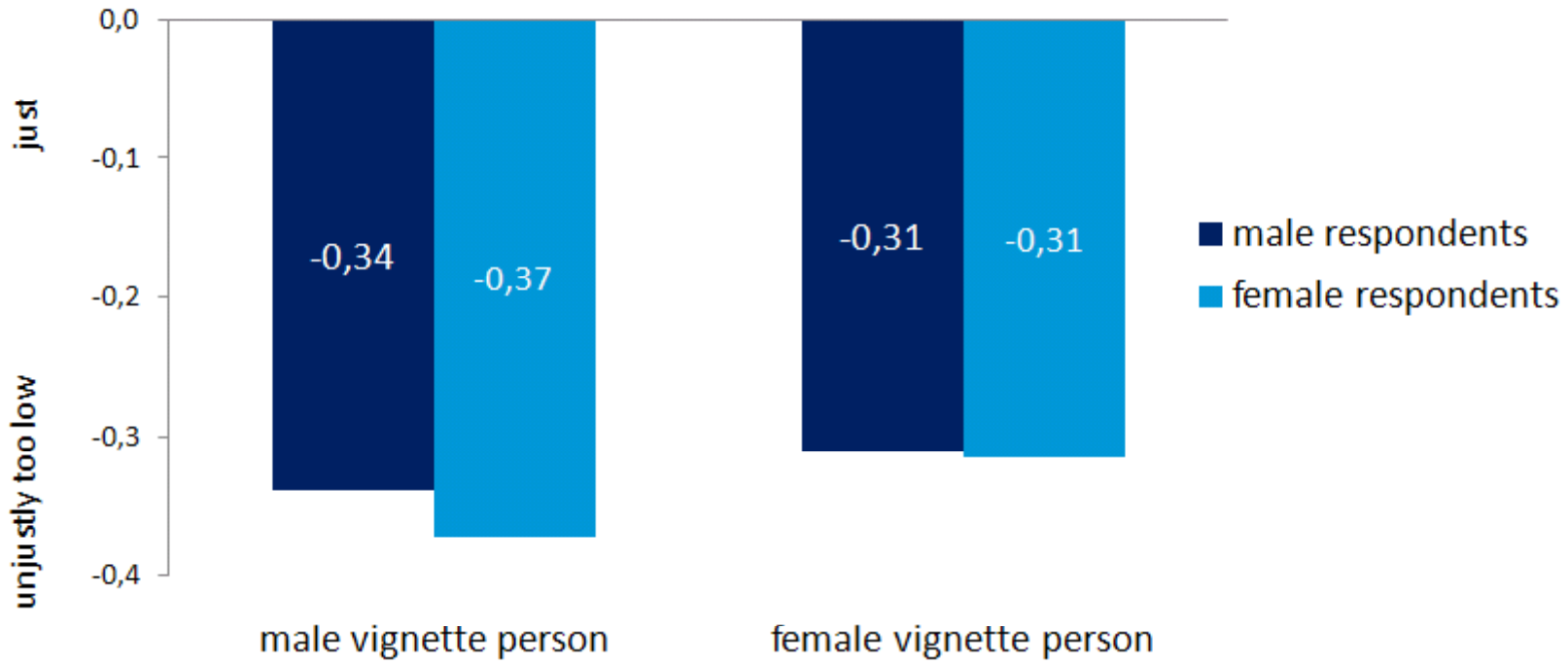
Employed Data

- Own data collection ("Einkommensgerechtigkeit in Deutschland"), funded by the DFG ("Der Faktorielle Survey als Instrument zur Einstellungsmessung in Umfragen").
- Survey of the general population in Germany (≥ 18 years old) conducted in 2009; CAPI and CASI-/PAPI-Split.
- Vignettes on justice of incomes with 5, 8 or 12 dimensions. Vignettes in the 8- and 12-dimensional condition contain additional information on the employees (e.g. work effort, children) and occupation (e.g. size of the company).
- N = 1.580 respondents; nearly N = 25.900 vignette judgments (10, 20 or 30 vignettes per respondent).

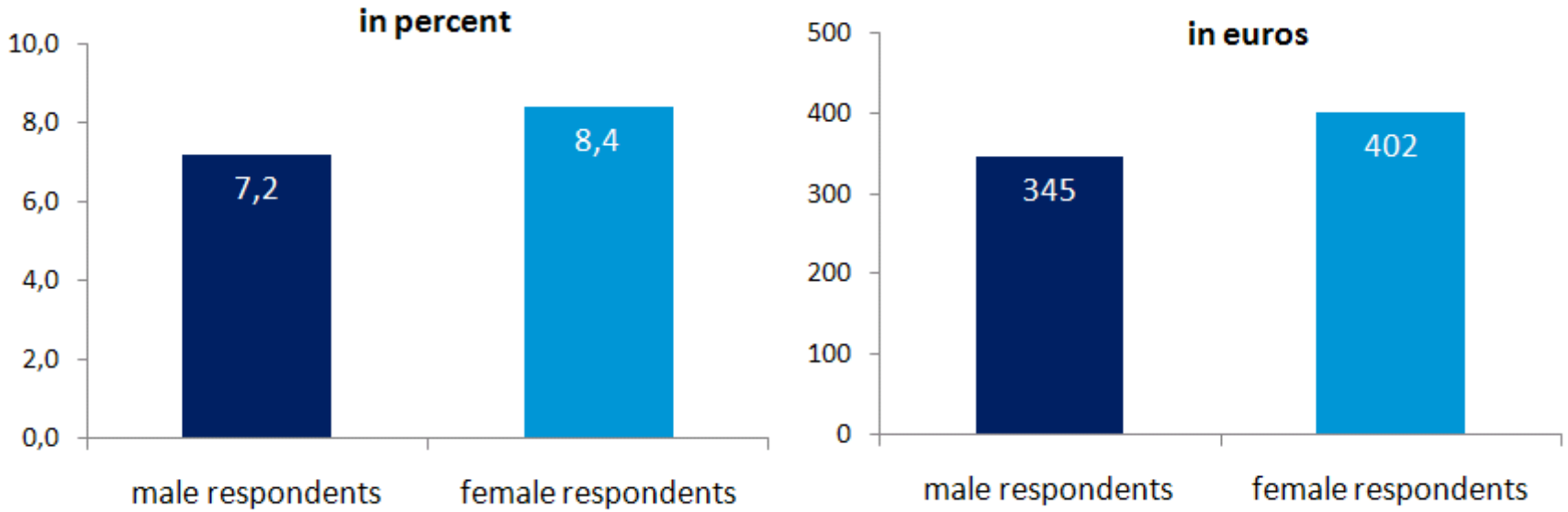
Results: Mean Fairness Ratings



- OLS-Regression estimates yield highly significant coefficients for gender of vignette person (t=7.1 resp. t = 8.7).

  → H1 supported (there is a JGPG in favor of men).

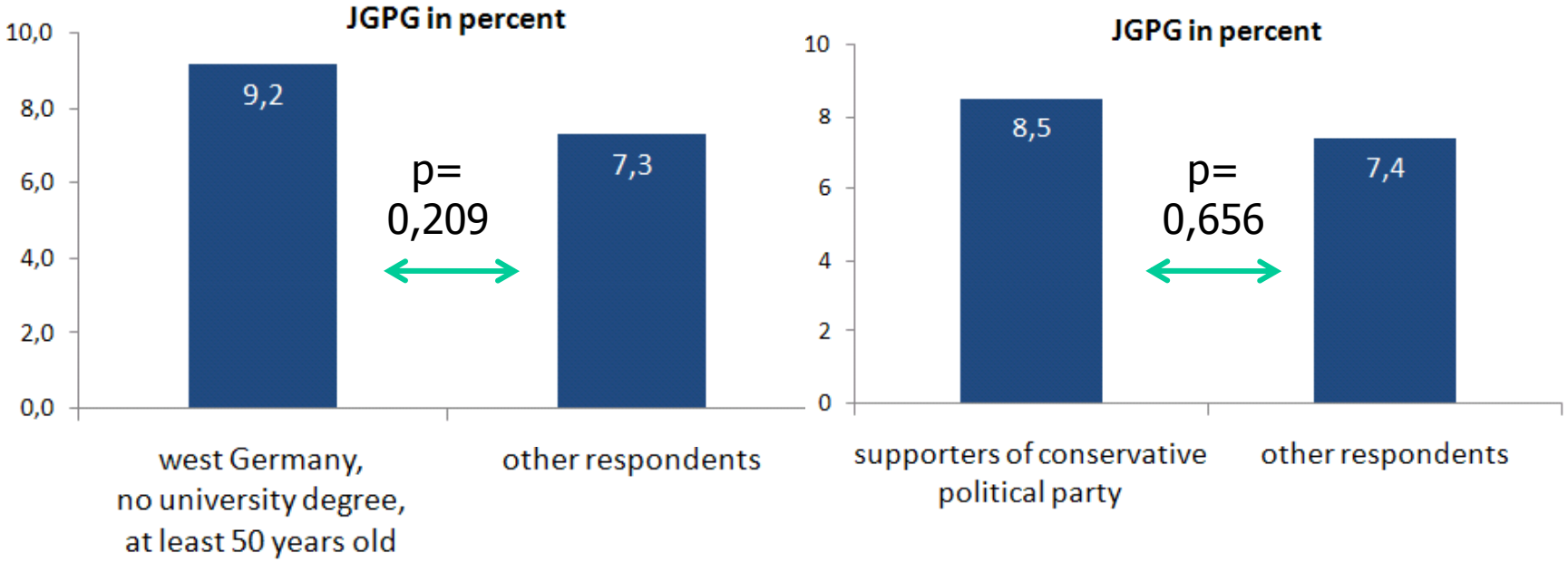
Results: Just Gender Pay Gap (Gross Income)



- H2a not supported (there is a JGPG especially in case of male respondents). In the contrary, (non significant) tendency to more discrimination by female respondents!

Results: Tastes for Discrimination?

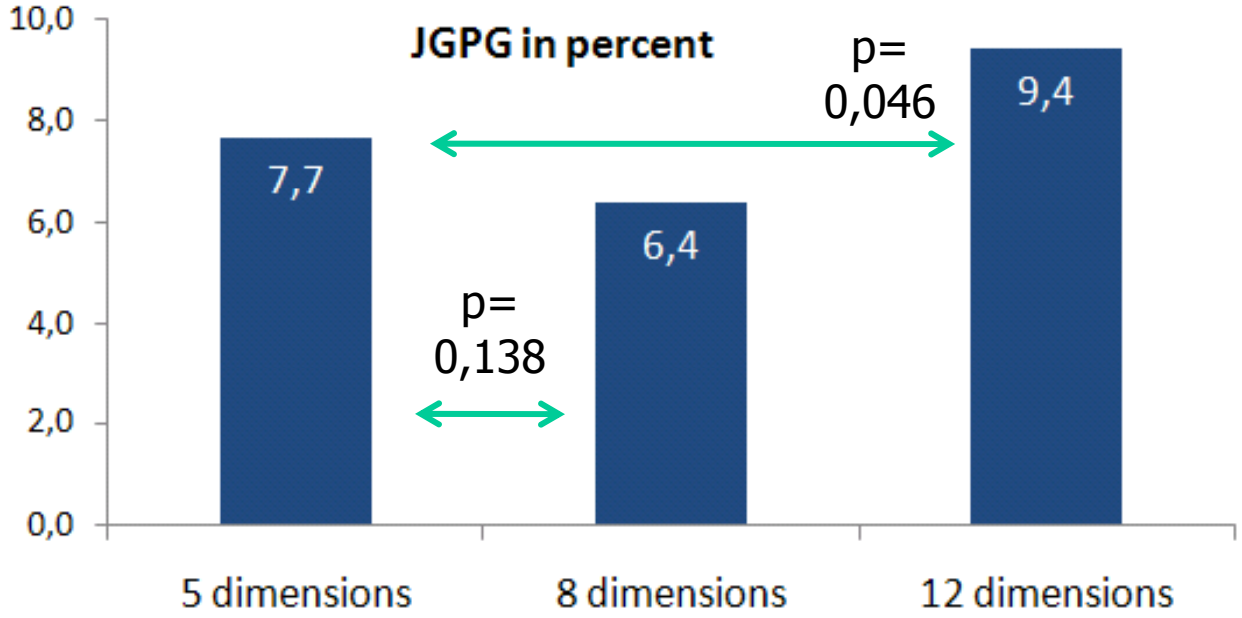
- Proxies for traditional gender role beliefs: socio-demographic characteristics of respondents and their political attitudes.



- In both cases: differences not significant! (testing by interactions with gender of vignette person) → H2b not supported.

Results: Statistical Discrimination? Methodological Bias?

- JGPG by amount of information / number of dimensions:



- JGPG in case of 12 dimensions significantly *higher*
  → H3 not supported (JGPG especially in case of few information).
  But evidence for H4a: JGPG especially in case of high complexity).

Results: Social Desirability? - Operationalization

- Is theoretically assumed (Esser 1984; Stocké 2004) in *coincidence* of

  clear normative standards
  non-anonymous-situation
  high need for social approval.

- Operationalization of anonymity by survey mode
  (CAPI vs. self-administered)

- Measuring "need for social approval" resp. "impression management"
  (IM) with the social-desirability-scale of Winkler et al. 2006.
  (α = 0.62 resp. 0.70).

Results: Social Desirability Bias? – Item

Logistic regression of item: „gender should be important ….”(discrete changes)

	H	M 1	M 2	M 3
Female respondent		-0.112***	-0.107***	-0.105***
Age [10 years]		-0.001	-0.001	-0.001
East Germany		-0.132***	-0.132***	-0.130***
No degree/Haupts.		–	–	–
Mittlere Reife/Reals.		-0.074**	-0.067*	-0.070*
Abitur		-0.112***	-0.105***	-0.106***
CAPI		**0.220*** **	**0.229*** **	**0.271*** **
IM			**0.008**	**0.075***
CAPI*IM	**–**			**-0.096***
Observations		1506	1458	1458
Pseudo-R^2		0.096	0.096	0.099
Log likelihood		-800.02	-776.09	-773.78

All models are additionally controlling for the respondents' employment status.*** p<0.001, ** p<0.01, * p<0.05 (twosided).

Results: Social Desirability Bias? – Vignette Judgments

OLS-Regression of vignette judgments - coefficients

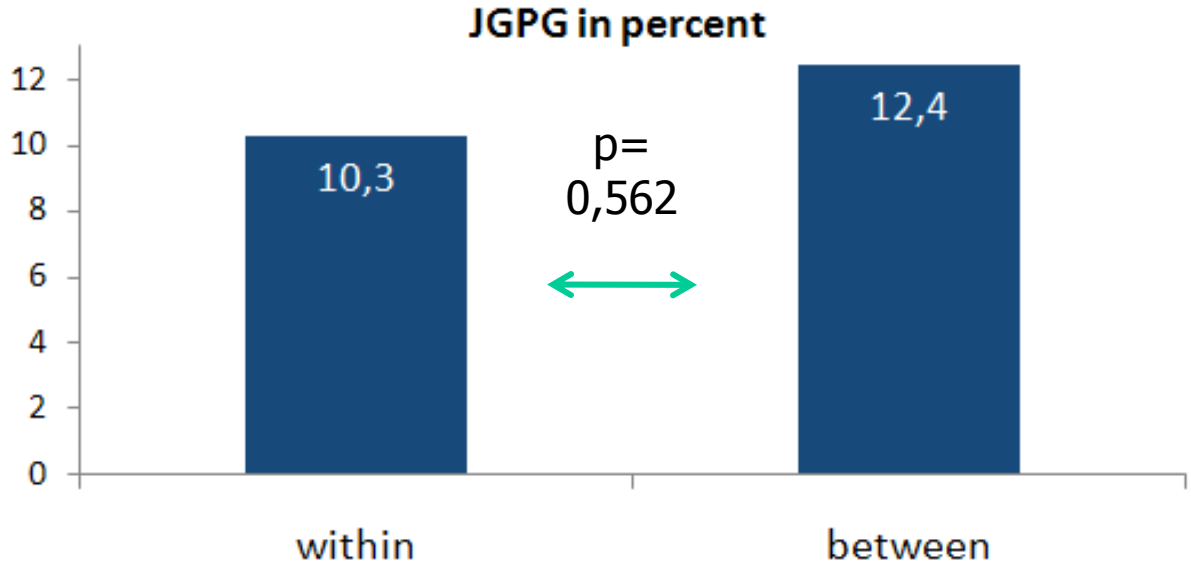
	H	M1	M2	M3
Female employee		0.296***	0.280***	0.307***
Controlling for other VD and RC[1]				
CAPI		-0,019		-0.025
CAPI * female		**-0,039**		**-0.051**
IM			0.038	0.039
IM* female			**0.001**	**-0.024**
CAPI *IM* female	**–**			**0.051**
Observations		24990	24239	24239
(Respondents)		(1524)	(1472)	(1472)
Adj. R^2		0.707	0.706	0.705

1 Same vignette dimensions and respondent's characteristics as in models before.

*** p<0.001, ** p<0.01, * p<0.05 (twosided, estimation with robust standard errors).

Reactivity? GJPG by Within- vs. Between-Variation of Gender

- GJPG of first two vignette judgments
  (only respondents who didn't scroll back)
- Within: ♀ ♂ or ♂ ♀ Between: ♀ ♀ or ♂ ♂



- Difference not significant → H4c not supported.

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Hypotheses Revisited – Discrimination

#	Hypotheses	**Results**	Theory/Mechanism
H1	There is a JGPG in favor of men. Esp. in case of…	**yes**	
H2a H2b	male respondents respondents with trad. gender role beliefs	**no** **no**	Tastes for discrimination
H3a	few information	**no**	Statistical discrimination

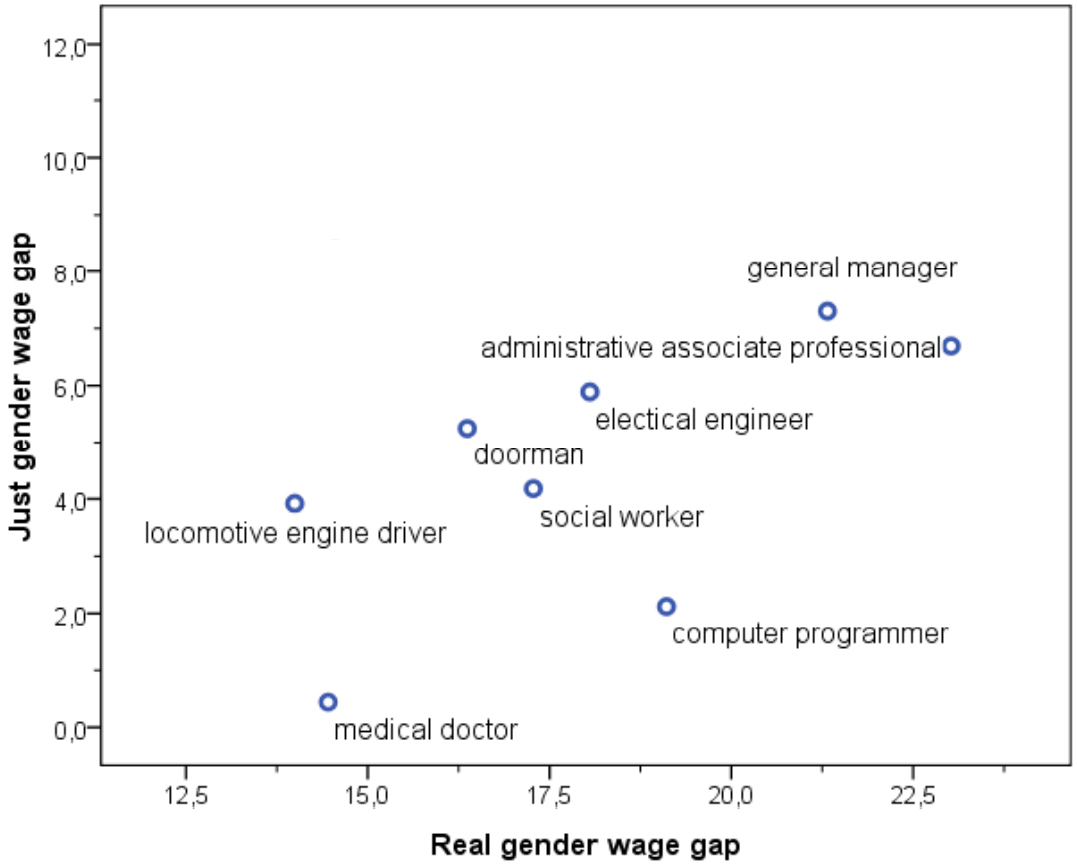
Hypotheses Revisited – Methodological Bias

#	Hypotheses	**Results**	Theory/Mechanism
	There is a higher JGPG in case of…		
H4a	high complexity / many dimensions	**mixed evidence**	Social desirability bias/ reactivity/ heuristics
H4b	low need f. social approval or high anonymity	**no**	
H4c	"within"-variation	**no**	

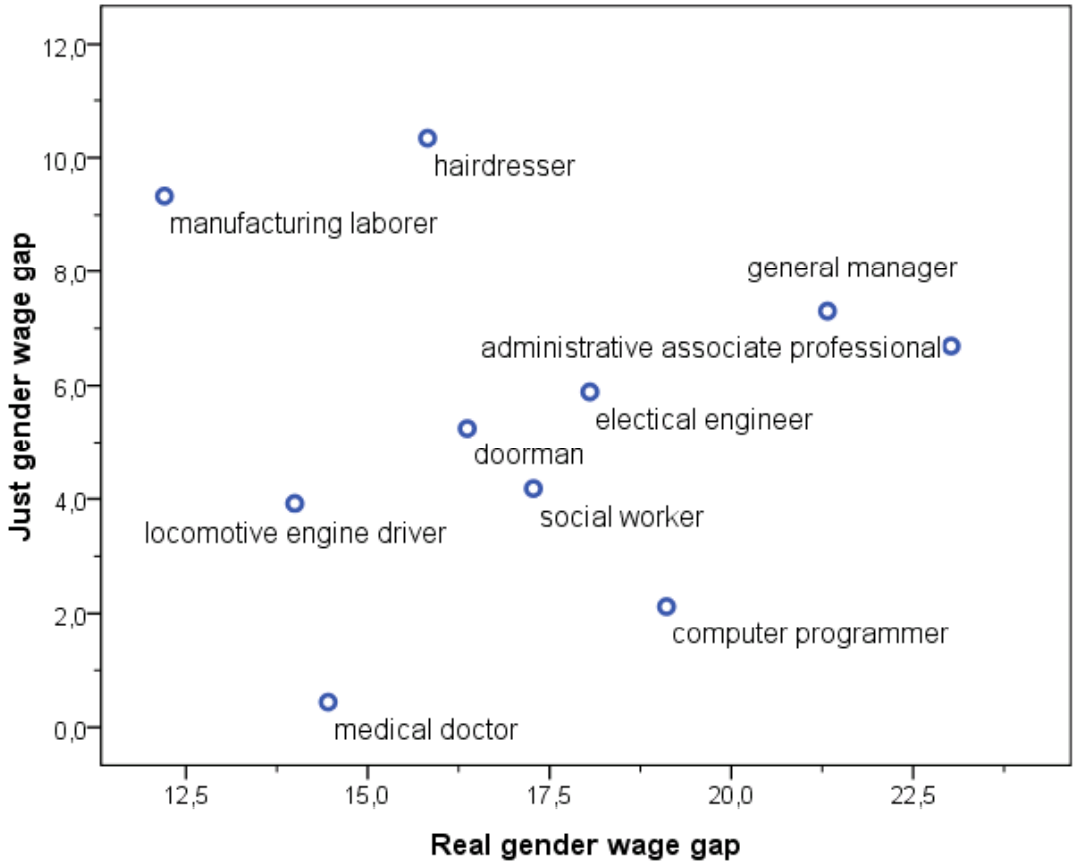
Outlook

- So far only little evidence for methodological effects. But there may be other sources for response bias: e.g. fading out of dimensions due to their implausibility, fatigue- and learning effects.
- Additionally, replications with even more delicate issues (e.g. discriminations of foreigners) should be on the agenda.
- The JGPG however seems to be very robust (even if its exact value might depend on the specification of the theoretical resp. regression model). There is a need of further research on its underlying mechanisms.
- Presumably also need-criteria are relevant for evaluation.
- One cause of the JGPG may be the "normative power of the factual". Or there might be a misinterpretation of the task by respondents (evaluation of the reality instead of fairness of wages).

Real and Just gender wage gap by occupations



Real and Just gender wage gap by occupations



It's still puzzling!

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Many thanks for your attention.

Comments are very welcome!

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http://www.uni-konstanz.de/hinz/?cont=faktorieller_surveyen&lang=de

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Appendix: Tastes for Discrimination?

		H	M1	M1	M3
VD	Female employee		0.265***	0.221***	0.230***
RC	Male respondent		0.047	0.019	0.029
	Respondent in west Germany, no university degree, = 50 years old			-0.142**	
	Supporter of conservative party				-0.062
VD x RC	Female*male respondent	+	-0.048		
	Female*respondent in west G., ….	+		0.076	
	Female*supporter of conservative p.	+			0.025
	Observations		24990	24855	22541
	(Respondents)		(1524)	(1516)	(1376)
	Adj. R^2		0.706	0.706	0.705

VD= Vignette dimension; RC = Respondents' characteristics.
In all models other vignettes' variables are controlled and in models 2-6 additionally the employment status of respondents.

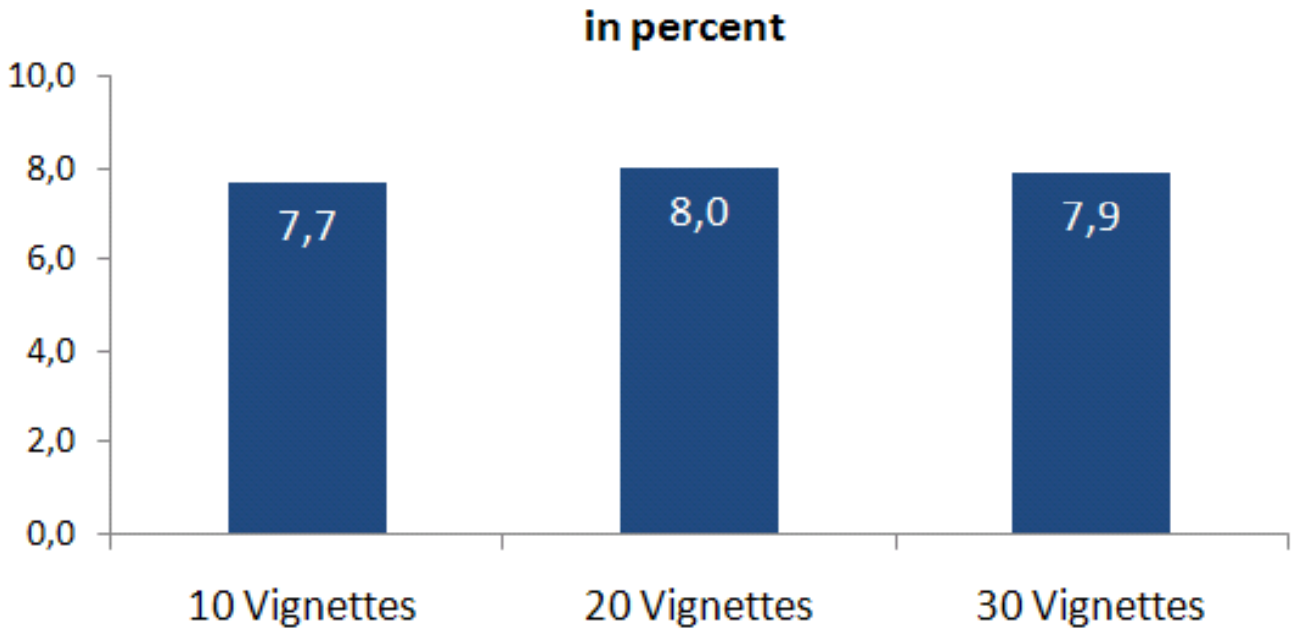
Appendix: Between-vs. Within-Variation of Gender

OLS-Regression of first two vignette judgments, only respondents who didn't scroll back

	M1 within	M 2 between
Female employee	0.338**	0.481**
Age [10 years]	-0.001	0.058
No vocational training	–	–
Vocational training	-0.513***	-0.499**
University degree	-0.721***	-0.735***
Occupational Prestige	-0.021***	-0.020***
Log Income	3.016***	3.021***
Observations	1087	929
(Respondents)	(549)	(471)
R^2	0.718	0.718

Controlling for usual respondents' characteristics. Constant not shown.
*** p<0.001, ** p<0.01, * p<0.05 (twosided; estimation w. robust standard e.).

Appendix: JGPG by number of vignettes



Appendix: SD-Scale of Winkler et al. 2006

Self-deceptive enhancement SDE (Selbsttäuschung)
Impression management IM (Fremdtäuschung)

		Dimension	Item-rest correlation	Cronbach's alpha
1	Mein erster Eindruck stellt sich gewöhnlich als richtig heraus (My first impression of people usually turns out to be right)	SDE	0.300	0.606
2	Ich bin mir meiner Urteile in der Regel sehr sicher (I'm usually very confident in my judgments)	SDE	0.315	
3	Mir ist der Grund meines Handelns nicht immer bewusst (Sometimes I don't know why I'm doing something)	SDE	0.089	
4	Es kam schon mal vor, dass ich zu viel Wechselgeld für mich behalten habe (I already received too much change from a salesperson without telling him or her)	IM	0.123	0.701
5	Ich bin immer ehrlich zu anderen (I always tell others the truth)	IM	0.432	
6	Ich habe noch nie jemanden ausgenutzt (There have been no occasions when I have taken advantage of someone)	IM	0.424	

Social desirability: = extreme values (at least value of 5 on scale reaching from 0 to 6) on all items.

SDE: 31,4% of our respondents
IM: 42,3% of our respondents
SE: 26,6% of our respondents