Double Standards in Just Earnings for Males and Females?

A Replication Study on Earnings Judgments and Sex Discrimination

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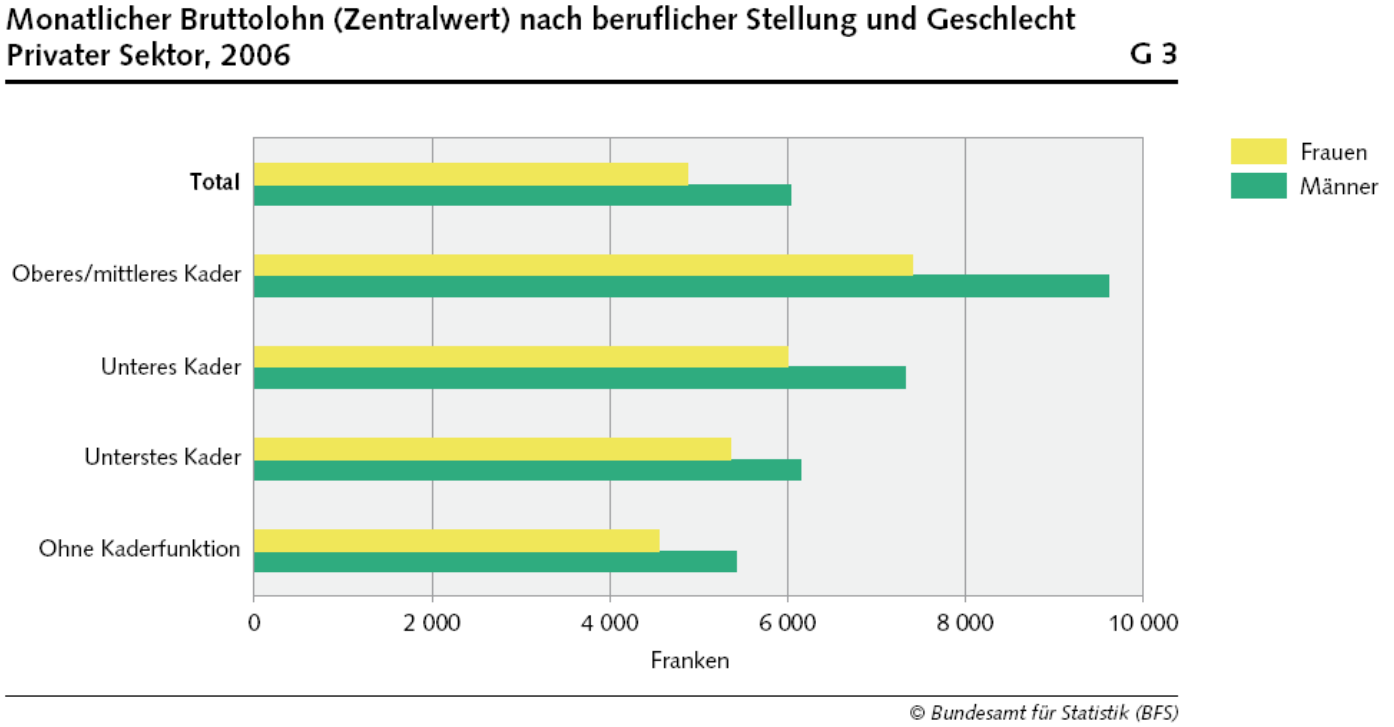
Introduction

- Empirical research on earnings in Switzerland shows: considerable remaining **unexplained gap in earnings between men and women**.
- For example, consider the 2007 numbers by the Swiss Federal Statistical Office: overall, **women earn 18.9% less than men** (in 2006; 2004: 19.7%; 2002: 20.7%).



Introduction

- This gap is usually attributed – at least partially – to **discrimination**.

- Such an earnings gap is problematic since there is a statutory norm of equal pay for equivalent work:

  Bundesverfassung (Federal Constitution of Switzerland)
  Art. 8 Abs. 3:
  „Mann und Frau sind gleichberechtigt. Das Gesetz sorgt für ihre rechtliche und tatsächliche Gleichstellung, vor allem in Familie, Ausbildung und Arbeit. **Mann und Frau haben Anspruch auf gleichen Lohn für gleichwertige Arbeit.**“ (accentuation not in original)

Introduction

- Therefore, the question is whether there is a **discrepancy between the empirical reality and the statutory norm**.
- Three answers:
  - **No!** Empirical data and models are just not good enough to capture all differences in productivity (see, e.g., Becker's "work effort" approach, 1985)
  - **Yes!** Contradictory to the norm, women are, in effect, paid less for equivalent work, and we should do something about it.
  - **Yes, but ...** Women are paid less for equivalent work, but there is also no real support for the norm by the members of society. Possibly, there is discrimination against women in the sense that people think they **should** earn less than men, i.e. that the just income for women is generally considered lower than the just income for men.
- Research question: Is there evidence for such **double standards in just earnings** for males and females?

Research design

- How can earnings judgment norms be measured?
- One approach is to use a vignette study (**factorial survey**; Rossi 1979, Rossi and Nock 1982, Beck and Opp 2001):
  - Respondents are asked judge “vignettes” – short text descriptions of (fictional) individuals or situations – in which certain elements are **varied at random**. For our research question, we can use vignettes describing a person with a certain income and vary the sex of the person.
  - Given the randomization, such a vignette study has properties of a **controlled experiment** and the effects of the vignettes provide evidence for the norms that operate behind the judgments.
- A problem is that, if the respondents are aware of the variations in the vignettes, they may adjust their responses to **social desirability** or political correctness.
- Therefore, it seems advisable to confront each respondent with only **one vignette**.

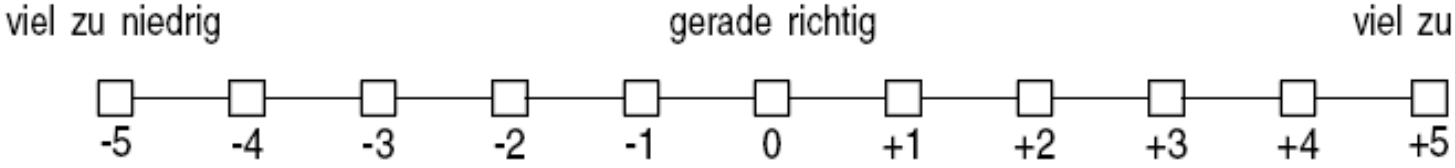
Study 1 (2001): Design

- Justice and Inequality Survey 2001 (with Andreas Diekmann, Institute for Sociology, University of Bern): Mail survey using a random sample from the population in the German part of Switzerland (N = 531, response rate: 34%)
- Example vignette:

11. Stellen Sie sich die folgende Situation vor:

Frau Meier, 32 jährig, ist kaufmännische Angestellte. Sie ist alleinerziehende Mutter von zwei Kindern. Finanziell kommt sie nur knapp über die Runden. Sie arbeitet engagiert und ihre Aufgaben und Pflichten erfüllt sie zur vollen Zufriedenheit ihres Arbeitgebers. Ihr monatliches Bruttoeinkommen beträgt SFr. 4000.–

Wie stufen Sie das Einkommen der beschriebenen Person ein?



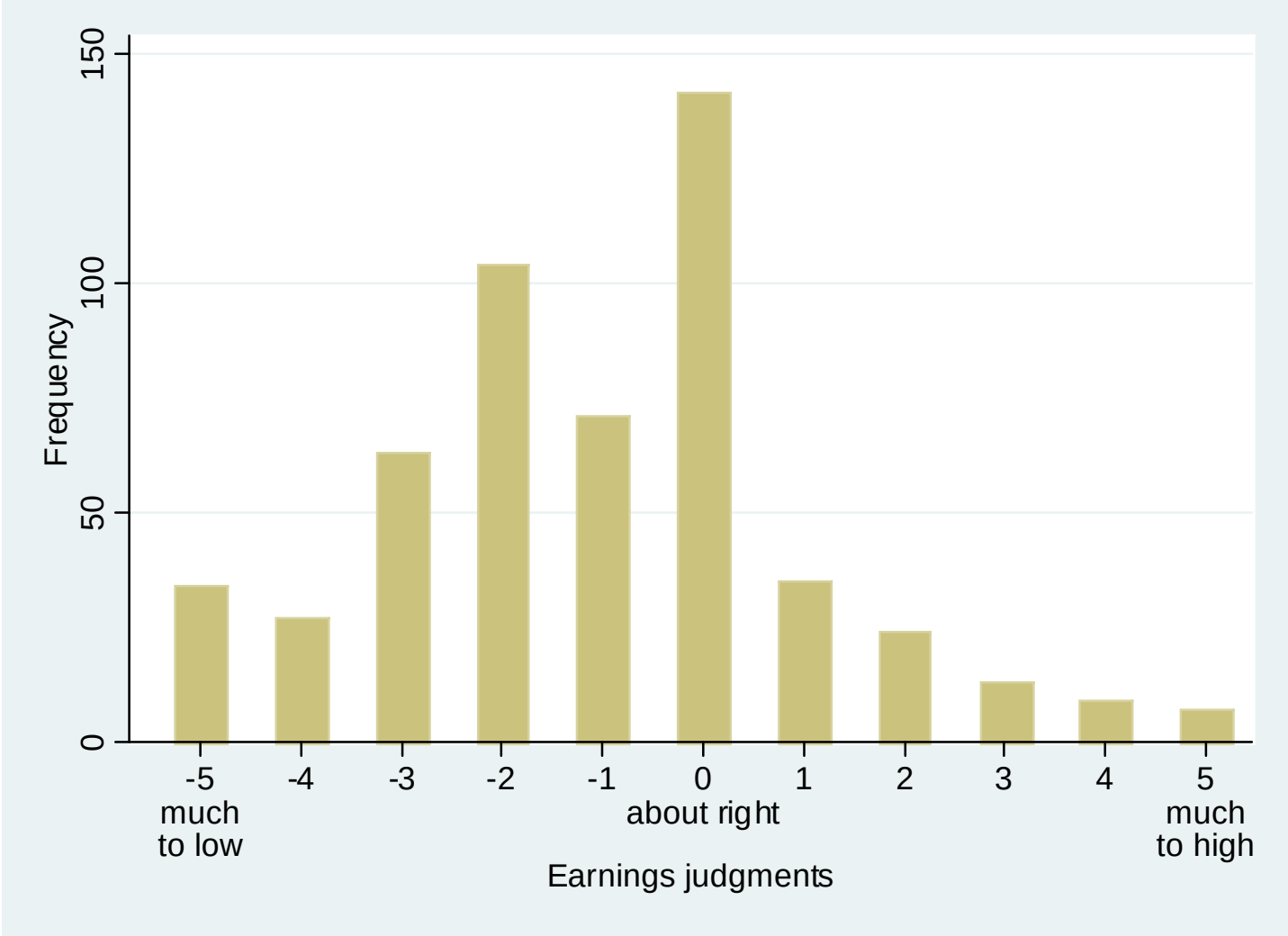
Study 1 (2001): Design

- Random assignment of vignettes to 8 experimental groups

- The vignette factors were (2 x 2 x 2)
  - **sex:** female vs. male
  - **need:** low (married, no kids) vs. high (single parent, two kids)
  - **work effort:** low (insufficient work effort, bad performance) vs. high (pronounced work effort, excellent performance)

Study 1 (2001): Results

- Overall distribution of judgments



Study 1 (2001): Results

- Results by factors

Factors	Mean	Std.dev.	N of obs	Difference
Sex				
– female	0.68	2.15	271	0.76^{***}
– male	1.43	1.98	258	
Need				
– low	0.42	2.08	263	1.25^{***}
– high	1.67	1.93	266	
Work effort				
– low	0.19	1.97	280	1.81^{***}
– high	2.00	1.81	249	
Total	1.05	2.10	529	

Dependent variable: reverse earnings judgments (–5 = "much to high" to 5 = "much too low"); $^{***}p < 0.001$ (twosided, unequal variances)

Study 1 (2001): Results

- Effect within each combination of neediness and work effort

Factors		Mean by sex			
need	work effort	female	male	N of obs	difference
low	low	−1.04	0.01	142	1.06^{***}
low	high	0.96	1.95	121	0.99^{**}
high	tow	0.47	1.38	138	0.92^{**}
high	high	2.26	2.80	128	0.54^{+}

Dependent variable: reverse earnings judgments (−5 = "much to high" to 5 = "much too low"); $^{+}p < 0.1$, $^{**}p < 0.01$, $^{***}p < 0.001$ (twosided, unequal variances)

Study 1 (2001): Results

- Interactions with respondent characteristics

		M 1	M 2	M 3	M 4
VF	– Sex (1 = male)	0.64^{**}	0.68^{**}	0.69^{**}	0.61^{*}
	– Need (1 = high)	1.28^{***}	1.25^{***}	1.23^{***}	1.20^{***}
	– Work effort (1 = high)	1.81^{***}	1.79^{***}	1.81^{***}	1.81^{***}
RV	– Sex (1 = male)	–0.16	–0.09	0.02	–0.03
	– Age/10[a]		-0.18^{**}	-0.13^{+}	-0.12^{+}
	– Pol. orient. (right)[a]			-0.20^{**}	-0.20^{**}
	– Years of education[a]				0.04
VF×EV	– Sex*sex	0.29	0.22	0.16	0.29
	– Sex*age		0.11	0.08	0.07
	– Sex*right			0.10	0.09
	– Sex*education				-0.14^{*}
Constant		-0.77^{***}	-0.79^{***}	-0.84^{***}	-0.79^{***}
adj. R^2		0.314	0.322	0.338	0.344

VF = vignette factors, RV = respondent variables; OLS regression; dependent variable: reverse earnings judgments; N = 497; $^{+}p < 0.1$, $^{*}p < 0.05$, $^{**}p < 0.01$, $^{***}p < 0.001$ (twosided); [a]centered

Study 1 (2001): Conclusions

Conclusions from Study 1 are:

- The sex of the person in the vignette matters.
- The given income is judged less sufficient if the person in the vignette is male.
- Despite the statutory norm of equality, women actually **should** earn less than men according to the judgments of our respondents.
- An important result is that these conclusions also hold if we only look at judgments of female respondents! Women discriminate themselves.
- Furthermore: The discrimination effect does not seem to be related to political orientation, however it decreases with education.
- Unfortunately, the sex discrimination effect in this study cannot be expressed in CHF because the income in the vignette was fixed.

Study 2 (2006/7): Design

- Mail survey using a random sample from the population in the German part of Switzerland (N = 371, response rate: 41%)
- The vignette question:

4. Stellen Sie sich die folgende Situation vor: „{Frau | Herr} {Walter | Ismailovic}, 32 jährig, allein stehend und ohne Kinder, ist vollzeiterwerbstätige{ | r} {Krankenpfleger | Schreiner | Journalist}{in | }. {Ihre | Seine} Aufgaben und Pflichten erfüllt {sie | er} zur vollen Zufriedenheit {ihres | seines} Arbeitgebers. {Ihr | Sein} monatliches Bruttoeinkommen beträgt {Krankenpfleger/in: 4000 | 4500 | 5000; Schreiner/in: 4500 | 5000 | 5500; Journalist/in: 5000 | 5500 | 6000} Franken.

   Wie stufen Sie das Einkommen der beschriebenen Person ein?

viel zu niedrig					gerade richtig					viel zu hoch
❑	❑	❑	❑	❑	❑	❑	❑	❑	❑	❑
–5	–4	–3	–2	–1	0	+1	+2	+3	+4	+5

Study 2 (2006/7): Design

- Random assignment of vignettes to 36 experimental groups
- The vignette factors were (2 x 2 x 3 x 3)
  - **sex:** female vs. male
  - **nationality:** Swiss sounding name vs. foreign sounding name
  - **occupation:** predominantly female job (“Krankenpfleger/in”), mixed job (“Journalist/in”), predominantly male job (“Schreiner/in”)
  - **income:** three levels in steps of CHF 500 (range depending on job)

Study 2 (2006/7): Results

- By the way: ice-breaker 1

1. Es wird oft gesagt, dass die Schere zwischen Arm und Reich immer grösser wird. Was denken Sie, wie werden sich die sozialen Ungleichheiten in den nächsten zehn Jahren in der Schweiz entwickeln?

Die Ungleichheiten werden …

- ❑1 … stark zunehmen.
- ❑2 … etwas zunehmen.
- ❑3 … etwa gleich bleiben.
- ❑4 … etwas abnehmen.
- ❑5 … stark abnehmen.

❑8 Kann ich nicht sagen.

The gap between rich and poor will ...	Freq.	Percent	Cum.
strongly increase	182	51.12	51.12
increase	132	37.08	88.20
remain constant	34	9.55	97.75
decrease	6	1.69	99.44
strongly decrease	2	0.56	100.00
Total	356	100.00	

Study 2 (2006/7): Results

- By the way: ice-breaker 2

2. Mit jährlicher Regelmässigkeit kursieren Meldungen über Topmanager-Löhne im Millionenbereich durch die Schweizer Presse. Begründet werden die Löhne oftmals mit dem Argument der Marktwirtschaft. Wie ist es mit Ihnen persönlich, finden Sie solche Bezüge gerechtfertigt?

Ich finde solche Löhne …

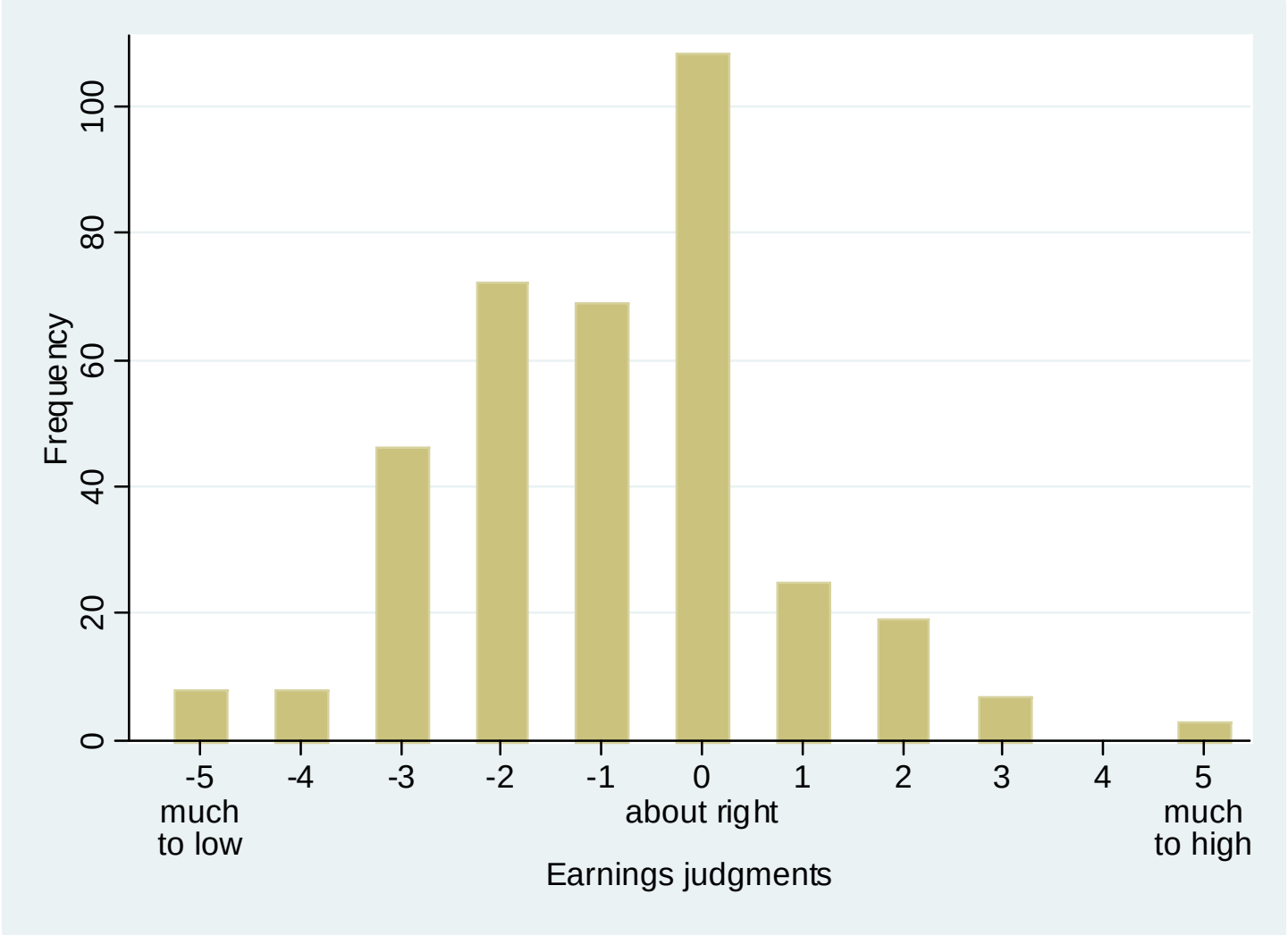
- ❑1 … absolut gerechtfertigt.
- ❑2 … eher gerechtfertigt.
- ❑3 … eher nicht gerechtfertigt.
- ❑4 … überhaupt nicht gerechtfertigt.

❑8 Kann ich nicht sagen.

The manager salaries are ...	Freq.	Percent	Cum.
absolutely justified	3	0.84	0.84
justified	27	7.52	8.36
not justified	90	25.07	33.43
not justified at all	239	66.57	100.00
Total	359	100.00	

Study 2 (2006/7): Results

- Overall distribution of judgments



Study 2 (2006/7): Results

- The judgment scale expressed in CHF

  Regression of judgments on vignette income (reverse judgments scale, shifted to 0-10)

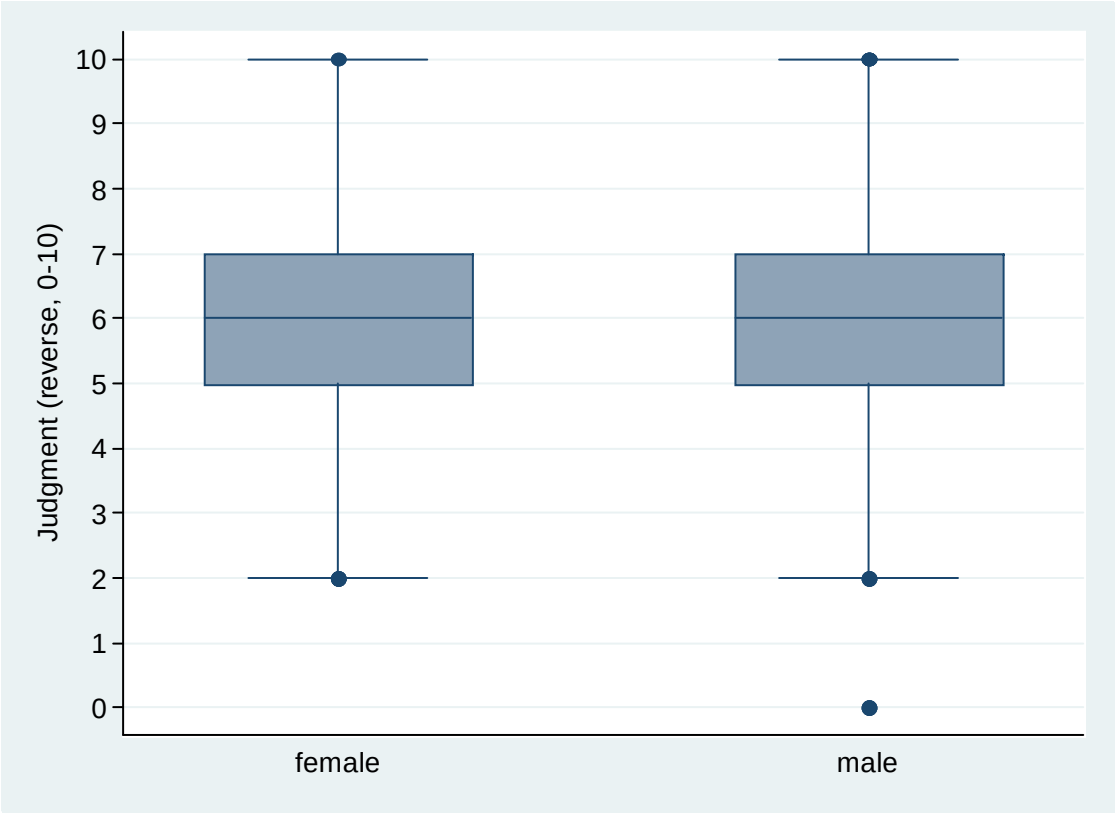
	(1) Rating
Vignette income/1000 (centered)	**-0.809*** **
	(-5.42)
Constant	**5.886*** **
	(68.72)
Observations	**365**
Adjusted R-squared	**0.072**

t statistics in parentheses
* p<0.05, ** p<0.01, *** p<0.001

=> 1 point on the scale is worth 1/0.809*1000 = 1236 CHF

Study 2 (2006/7): Results

- Effect of sex in vignette:



Mean for females: 5.875
Mean for males: 5.899

Study 2 (2006/7): Results

- Effect of sex within each job

Conclusions

- Although the design was very similar, the sex discrimination effect could not be replicated!!! (There is also no interaction effect between sex of respondent and sex in vignette.)
- Why:
  - smaller sample ...
  - special situation in vignettes: unmarried, without kids, high work effort => however, also in this situation a strong and significant sex effect was observed in the 2001 study
  - ????
- Overall, the differences in the results are puzzling and there is need for a further replication with a lager sample. Also note that Study 2 was somewhat special: very short questionnaire (14 questions on one folded DIN-A4 sheet) and it contained **question 13 ...**

Question 13

13. Denken Sie an eine Ihnen bekannte Person, von der Sie die Wohnadresse wissen. Bitte geben Sie die **erste Ziffer** der Hausnummer der Adresse dieser Person an.

Erste Ziffer der Hausnummer: ⌊__⌋

❑$_1$ Keine Hausnummer

- Some comments:
  „13. Was soll diese Frage?
  „Frage 13 eher komisch!“
  „Frage 13 ist etwas verwirrend! (Absicht?)“
  „Frage 13 scheint ein Scherz zu sein...“
  „Was soll nur die Frage Nr. 13?!“
  „Spinnts Ihnen?“

Question 13

- But: The answers to question 13 follow Benford's Law! (chi-squared = 6.23 (8 df), p = 0.62)