Workshop „Analytical Sociology: Theory and Empirical Applications“
Venice International University, San Servolo, 23.11.2023

Merit, Need, Entitlement? Investigating Fairness of Housing Evaluations

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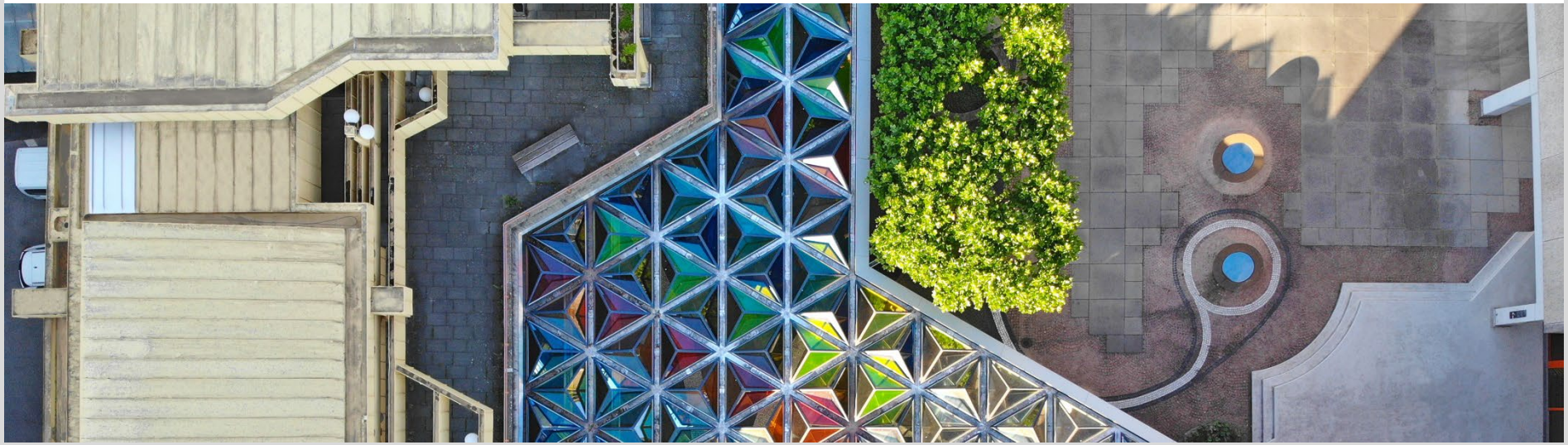

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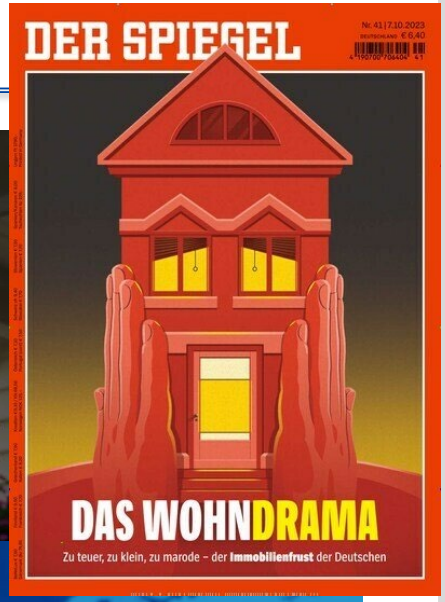
Universität Konstanz

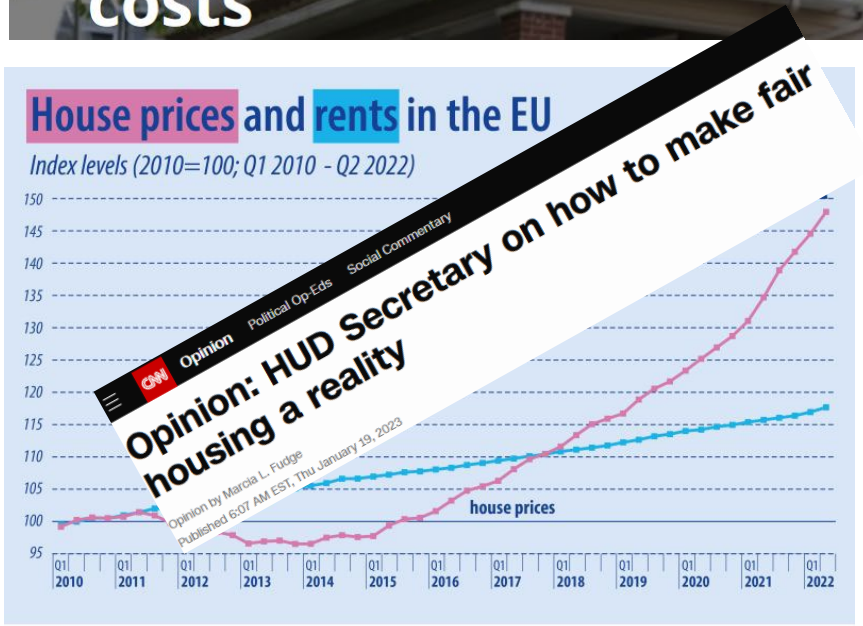
Outline

1. Motivation and Introduction
2. Empirical Justice Research: Concepts, Theory, State of Research
3. Research Strategy, Study Design, Methods
4. Results: Fairness of Housing Evaluations
5. Discussion

Motivation


Wohnungsnot in Tirol immer dramatischer
Der Sozialpolitische Arbeitskreis übt heftige Kritik an der Politik von Stadt und Land.
U.S. neighborhoods are more segregated than a generation ago, perpetuating racial inequity
House prices in Edinburgh are said to be pricing the locals out of their own city (
Americans feel the pain of higher housing costs


DER SPIEGEL
DAS WOHNDRAMA
Zu teuer, zu klein, zu marode – der Immobilienfrust der Deutschen


House prices and rents in the EU
Index levels (2010=100; Q1 2010 - Q2 2022)
150
145
140
135
130
125
120
115
110
105
100
95
house prices
Q1 2010
Q1 2011
Q1 2012
Q1 2013
Q1 2014
Q1 2015
Q1 2016
Q1 2017
Q1 2018
Q1 2019
Q1 2020
Q1 2021
Q1 2022
ec.europa.eu/eurostat
CNN Opinion Political Op-Eds Social Commentary
Opinion: HUD Secretary on how to make fair housing a reality
Opinion by Marcia L. Fudge
Published 6:07 AM EST, Thu January 19, 2023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Startseite
Videos & Audios
Inland
Ausland
Wirtschaft
Wahlen
Wetter
Ihre Meinung
Mehr
Startseite
Inland
Bezahlbares Wohnen: Merkel und Seehofer betonen Bedeutung
Suche Wohnung
Biete Belohnung
3 oder 4 Zimmer
mind. 85 qm
sonnig, mit Balkon
gerne 4.OG oder DG
max. 950 €
500 €
Belohnung
Bei erfolgreicher Vermittlung
Vor Gipfel im Kanzleramt
Wird Wohnen "das Allerwichtigste"?

Motivation

- Residential inequality with respect to various domains and indicators:
  - Homeownership (vs. renting) (Cohen Raviv/Hinz 2022; Kolb 2013; Mulder et al. 2015).
  - Housing conditions (Galster/Wessel 2019; Holm et al. 2021).
  - Environmental burdens (Meyer 2011; Diekmann et al. 2022).
  - Segregation, gentrification (Aldén et al. 2015; Freeman 2005; Hochstenbach 2018; Hwang/Sampson 2014; Rüttenauer 2022).
  - Subjective residential satisfaction (Amole 2009; Elsinga/Hoekstra 2005).
  - …
- Matthew effect: accumulating inequalities (Filandri/Olagnero 2014; Hinz/Auspurg 2017; Kurz 2000, 2001).
- Rising inequality, globally (Burrows/Knowles 2019; Dewilde/De Decker 2016; Dorling et al. 2005; Helbig/Jähnen 2018; Wind et al. 2017).

Motivation: Main Research Gap

Motivation: Main Research Gap

- How should housing resources be allocated in society?
- How do people perceive residential inequality with respect to distributive justice principles?
- Main justice principles:
  - Merit/equity
  - Need
  - (Status) entitlement
  - Equality

Motivation: Main Research Gap

- Extensive literature on justice evaluations on various topics:
  - Most prominent: fairness of earnings / gender pay gap (e.g., Alves/Rossi 1978; Auspurg et al. 2017; Brüggemann/Hinz 2023; Jann et al. 2021; Lang/Groß 2020).
  - Other topics:
    - Fairness of inheritance tax (Gross et al. 2017).
    - Fairness of energy transition measures (e.g., NIMB research for wind turbines) (Liebe/Dobers 2020).
    - Welfare distribution (Reeskens/van Oorschot 2013).
    - Fairness of childcare fees (Busemeyer/Goerres 2020).
    - Income tax (Liebig/Mau 2005).
    - …
- Methodological state-of-the-art: factorial survey (FS) / vignette experiments (Auspurg/Hinz 2015; Liebig et al. 2015).
- I could not find any single existing study investigating fairness of housing evaluations.

Research Questions

- How do people evaluate merit-, need, and (status) entitlement criteria with respect to housing inequality and fairness of housing?
- Is there evidence for „double standards“ regarding gender and occupational status, i.e. do people attribute different importance to the above mentioned criteria dependent on group membership?
- Is it possible to apply the established methods (FS experiments) of empirical justice research for other inequality dimensions, notably fairness of earnings, to fairness of housing evaluations? Methodological insights?

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Empirical Justice Research

- Topic- and context-dependency of importance of justice principles.
- Fairness of earnings:
  - Merit/equity more important than other principles.
  - Status entitlement effects w/ respect to occupation: a medical doctor is entitled more than a factory worker.
  - „Just gender pay gap“, but mixed evidence on this.
- Reeskens/van Oorschot (2013):
  - Self-inflicted, predictable risks: merit/equity dominant.
    vs.
  - Exogenous, unpredictable risks: need and equality dominant.
- Fairness of housing:
  - Individual responsibility, hence merit/equity?
  - „Housing as a basic right“, hence need and equality?

Status Entitlement and Double Standards

- Rooted in expectation states theory, status characteristics theory, rewards expectation theory (Berger et al. 2014, Berger/Fişek 2006, Correll, Ridgeway 2003, Fişek/Hysom 2008).

- Beliefs emerge that relate status characteristics to performance expectations, and in turn to norms on reward expectations.

- Double standards (Foschi 1996, 2000):
  - Different importance of justice principles in dependence of status characteristics or group membership.
  - Main hypothesis: Stricter standards for disadvantaged groups.
  - This study: gender and occupation: Are merit- and need-related criteria applied differently for men and women and for different occupations?

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Study Design

- Konstanzer Bürgerbefragung, fall 2022.
  - City of Konstanz, South Germany, population = 87,000.
  - Tight housing market, high rents and house prices.
- Full-population (age 16+) online survey, stratified offline recruited random sample; N = 1,154.
- All analyses use post-stratification weights (gender, age, city borough, nationality).
- Response rate = 55% (see Spanner et al. 2023 for details).

FS Experiment: Example Vignette

A woman in her early 40s works as a nurse and makes rather little effort professionally.

She lives with her partner and without children for rent in a 80 m² apartment in an average residential area.

The monthly housing costs (excluding running costs) are 500 euros.

Is this household's housing situation fair, or do you think the housing situation is unfairly too bad or unfairly too good?

(−5) unfairly too bad… …(0) fair… …(+5) unfairly too good

FS Experiment: Example Vignette

A woman in her early 40s works as a nurse and makes rather little effort professionally.

She lives with her partner and without children for rent in a 80 m² apartment in an average residential area.

The monthly h

Fixed by design:
- „Germans“ only
- Rental market only
- Apartments only (i.e., no detached houses etc.)
- Age

Is this household … unfairly too bad or unfairly too good?

(−5) unfairly too bad… …(0) fair… …(+5) unfairly too good

FS Experiment: Vignette Universe

Dimension	Levels
Gender	Woman / man
Occupation	Physician Nursing staff Factory worker Manager Currently unemployed
Job performance	Low High Empty (no information)
Living partner	Single, no partner With partner
Children	No children / two children
Living space	50 m^2 / 80 m^2 / 110 m^2 / 140 m^2
Location	Average / very good
Monthly costs	500 € / 800 € / 1100 € / 1400 €

FS Experiment: Vignette Universe

Dimension	Levels	
Gender	Woman / man	
Occupation	Physician Nursing staff Factory worker Manager Currently unemployed	Status entitlement
Job performance	Low High Empty (no information)	Merit
Living partner	Single, no partner With partner	Need
Children	No children / two children	
Living space	50 m^2 / 80 m^2 / 110 m^2 / 140 m^2	
Location	Average / very good	Inequality
Monthly costs	500 € / 800 € / 1100 € / 1400 €	

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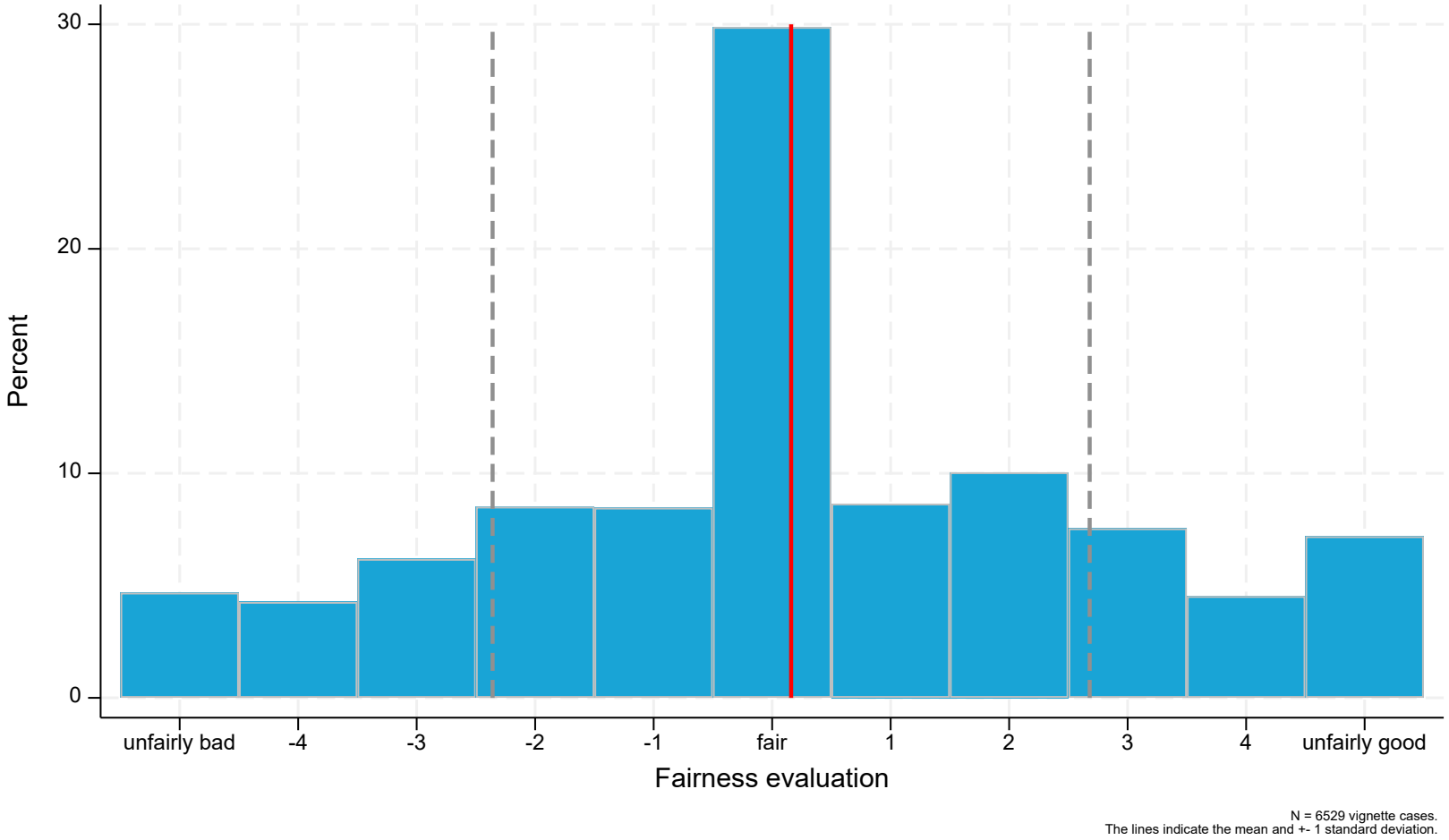
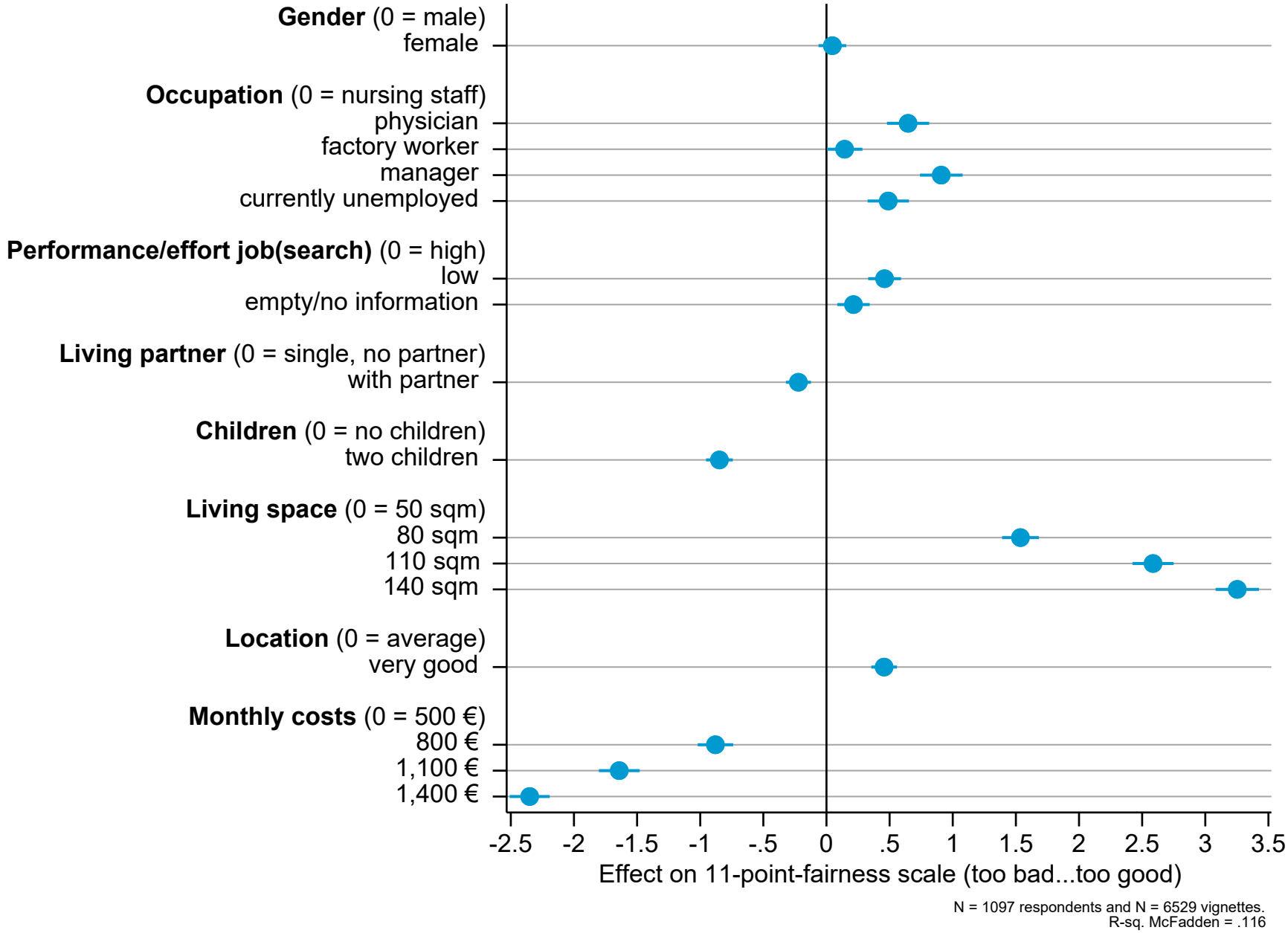
4. **Results: Fairness of Housing Evaluations**
   a) **Main Effects of Vignette Dimensions**
   b) **Illustrative Excursus: What are „Fair“ Housing Conditions?**
   c) **Double Standards**

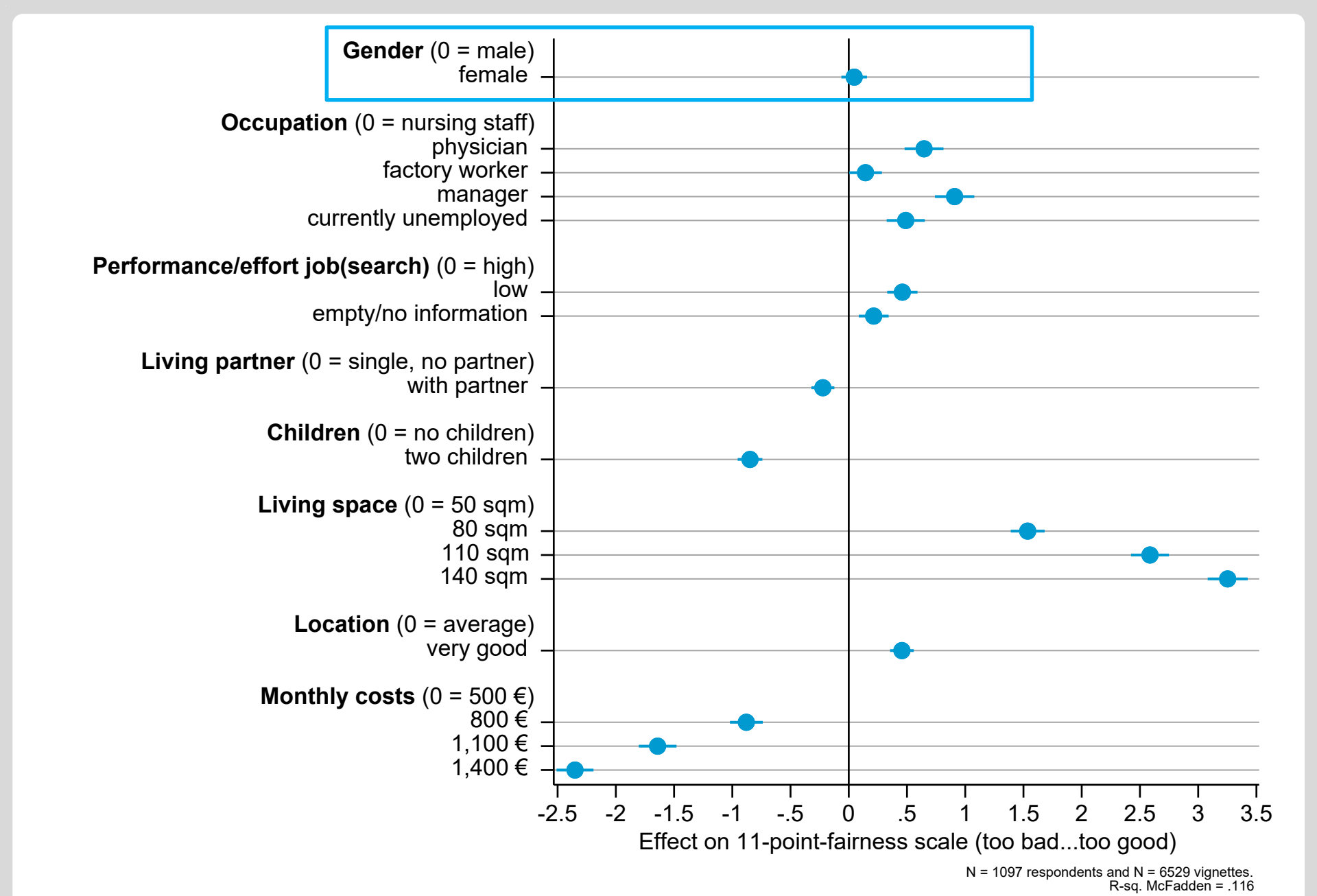
5. Discussion

Results: Dependent Variable



Results: Main Effects of Vignette Dimensions


Gender (0 = male)
female
Occupation (0 = nursing staff)
physician
factory worker
manager
currently unemployed
Performance/effort job(search) (0 = high)
low
empty/no information
Living partner (0 = single, no partner)
with partner
Children (0 = no children)
two children
Living space (0 = 50 sqm)
80 sqm
110 sqm
140 sqm
Location (0 = average)
very good
Monthly costs (0 = 500 €)
800 €
1,100 €
1,400 €
-2.5 -2 -1.5 -1 -.5 0 .5 1 1.5 2 2.5 3 3.5
Effect on 11-point-fairness scale (too bad...too good)
N = 1097 respondents and N = 6529 vignettes.
R-sq. McFadden = .116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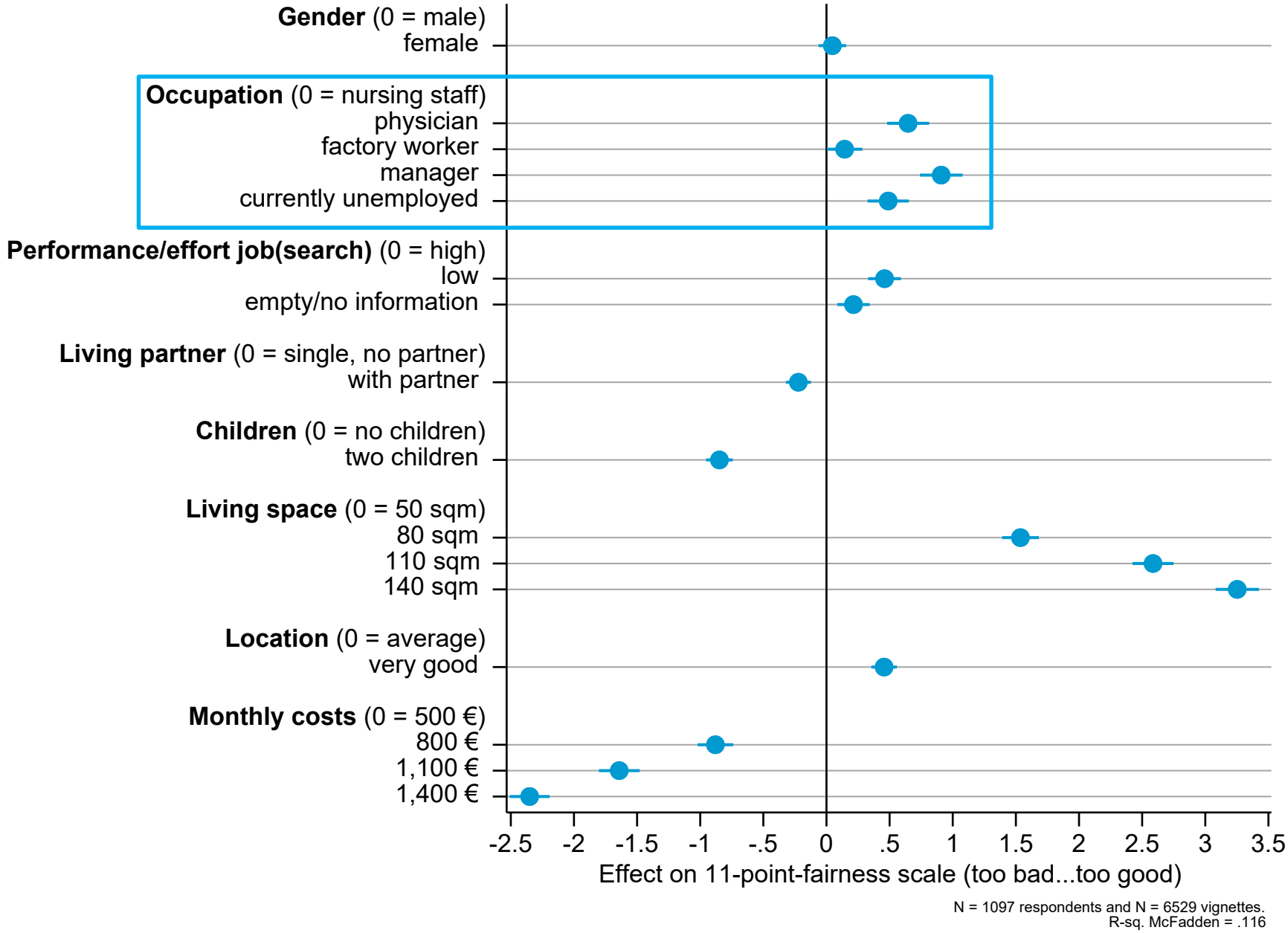
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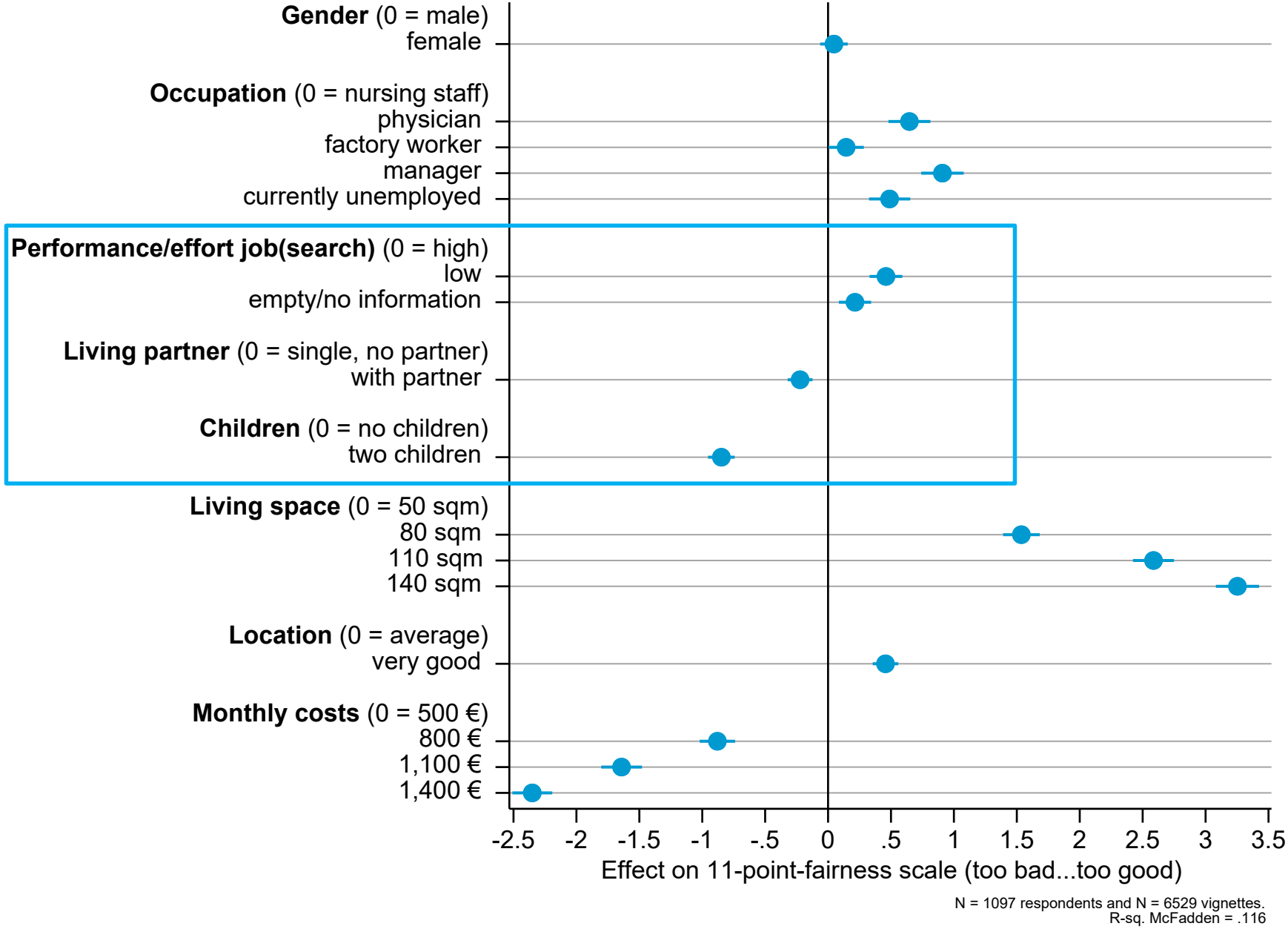
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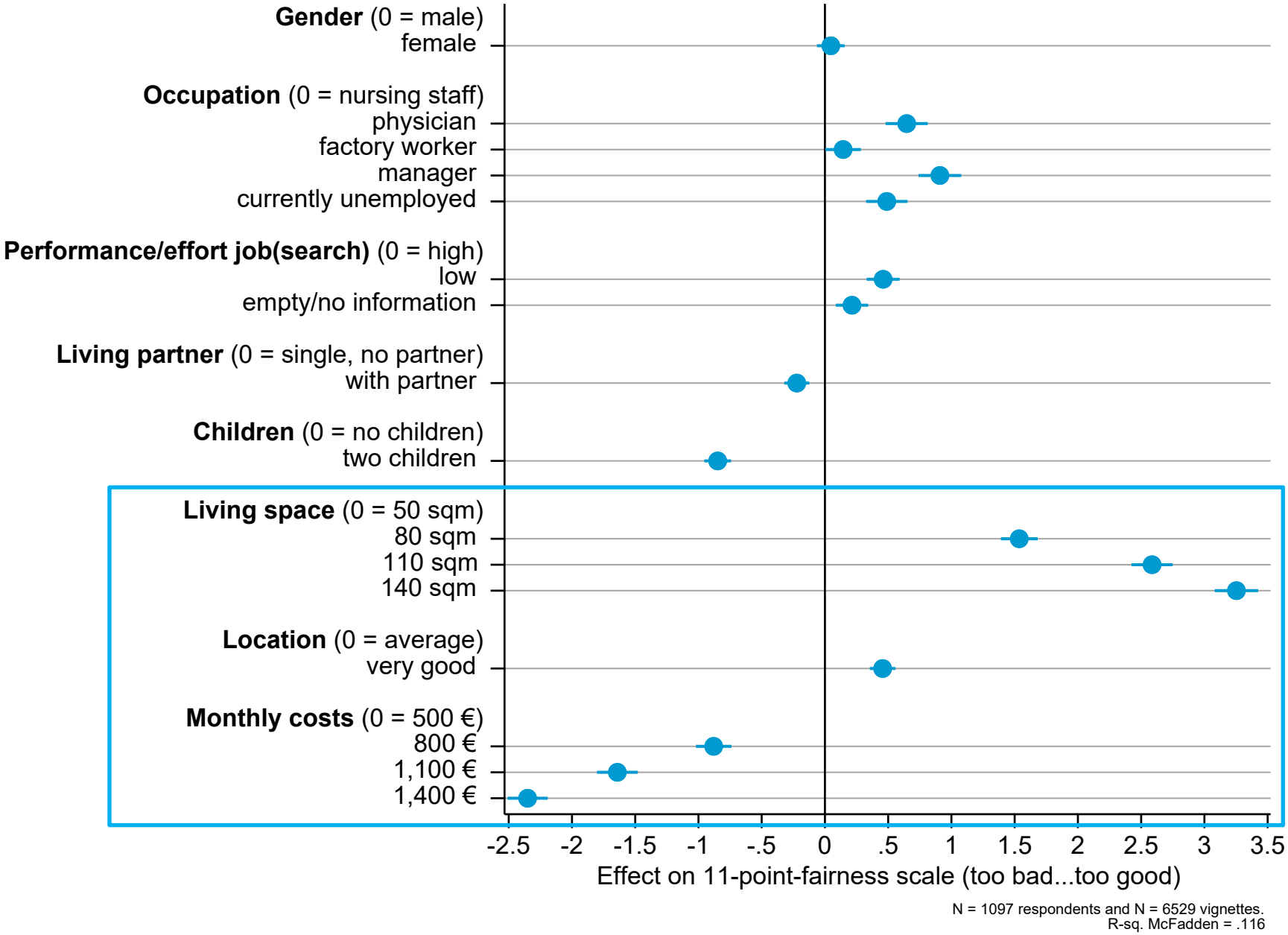
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Effect on 11-point-fairness scale (too bad...too good)
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Results: ICC and Respondent-Level Effects

- Intra-class correlation (ICC) = zero (ICC = 0.01).
- Further checks:
  - (virtually) no respondent-level effects on fairness ratings found.
  - (virtually) no random slopes for vignette variable effects found.
  - Robust when excluding all cases with „0“ answer (middle category) on DV, or straightliners.
- This would mean that all respondents agree with regard to their fairness evaluations and the importance they accord to the vignette dimensions.

Results: Illustrative Excursus

- How do the vignette variables interrelate to each other in terms of concrete figures on fair housing conditions?
  - E.g., fair living space for two children vs. no children?
  - E.g., what rent price per square meter is considered fair?
- This is analoguous to:
  - Calculating willingness to pay (WTP) estimates in other FS applications.
  - Calculating „just gender pay ratios“ in fairness of earnings studies.
- For instance:

$$JLSR = \frac{\beta_{children}}{-\beta_{livingspace}}$$

where JLSR = „just living space ratio“

$ß_{children}$ = coefficient for „children in household“
$ß_{livingspace}$ = coefficient for „living space“

For derivations of formulae, see Auspurg et al. (2017; online supplement). Variables „living space“ and „monthly costs“ entered as metric variables into the model.

Fair Housing Conditions for Example Constellations

	Absolute estimate	Relative estimate (%)
Fair monthly costs (€) per m^2 living surface	13.97	1.63

Fair Housing Conditions for Example Constellations

	Absolute estimate	Relative estimate (%)
Fair monthly costs (€) per m^2 living surface	13.97	1.63
Fair monthly cost change (€) for two children vs. no children	−325.04	−31.27
Fair monthly cost change (€) for a physician (medical doctor) vs. nurse	+252.24	+33.07
Fair monthly cost change (€) for a manager vs. factory worker	+300.53	+42.12
Fair living space change (m^2) for two children vs. no children	+23.27	+30.42
Fair living space change (m^2) for high job performance vs. low performance	+12.70	+14.98

Double Standards: Gender × Job Performance

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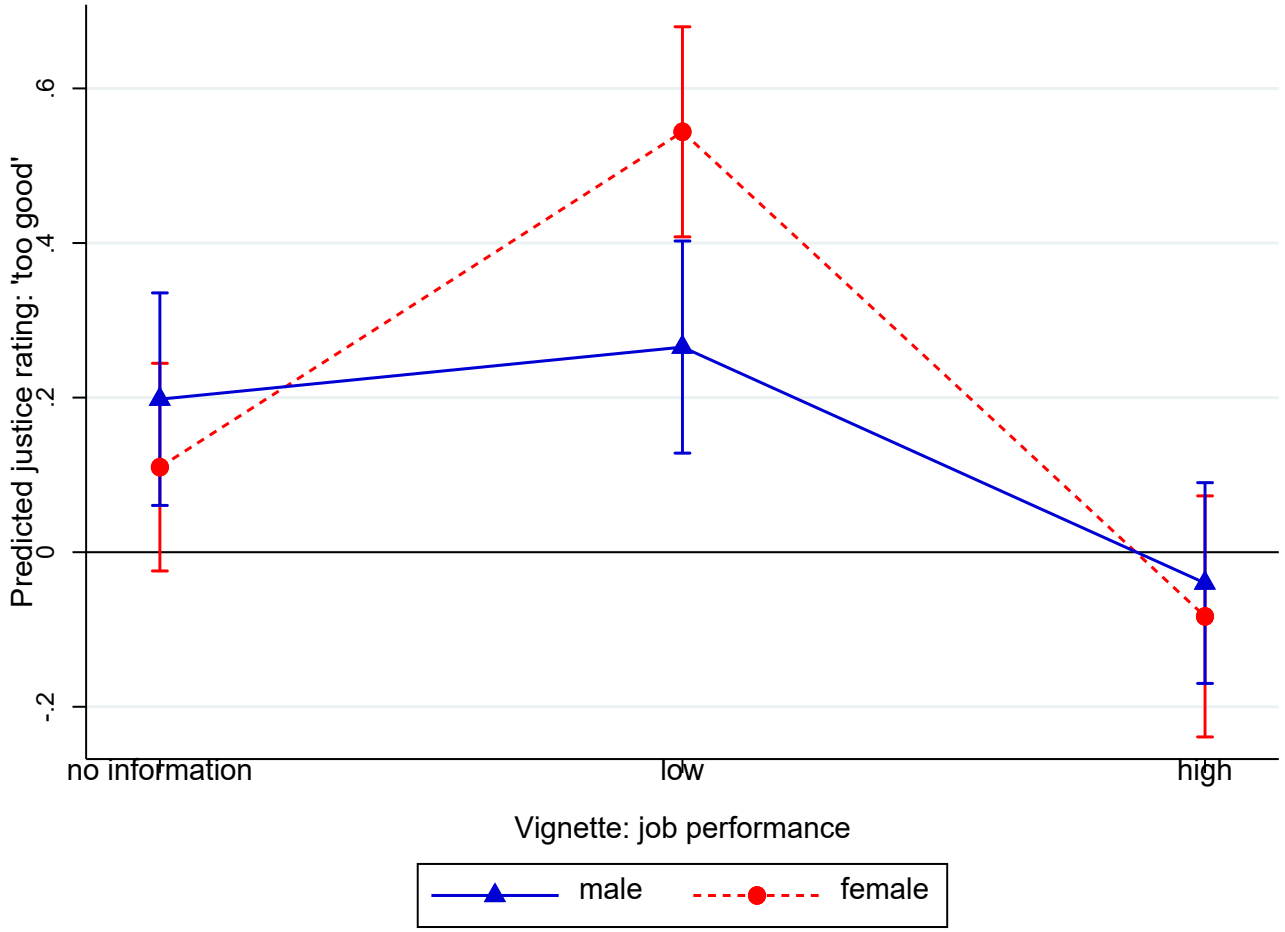
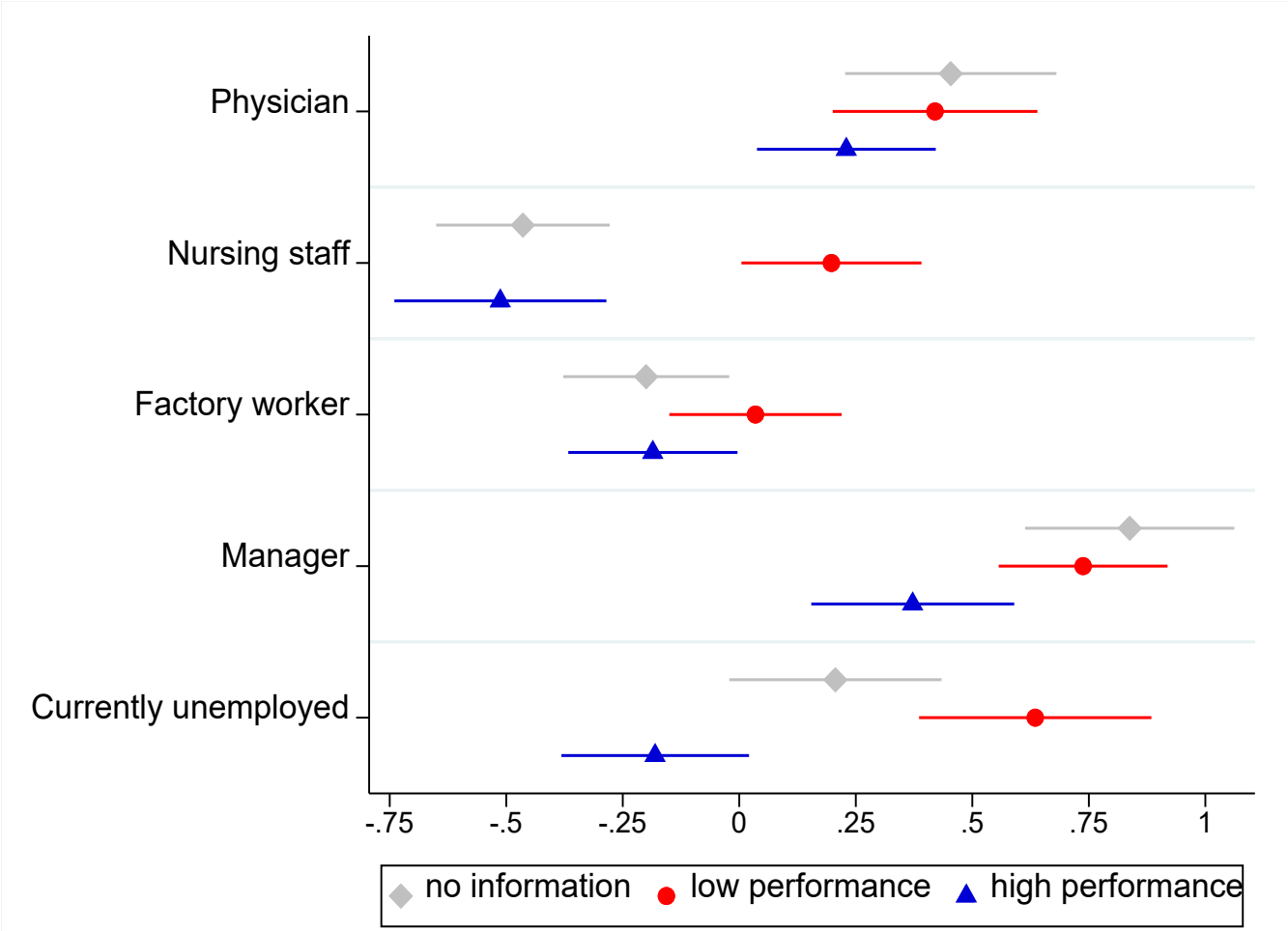


Double Standards: Occupation × Job Performance



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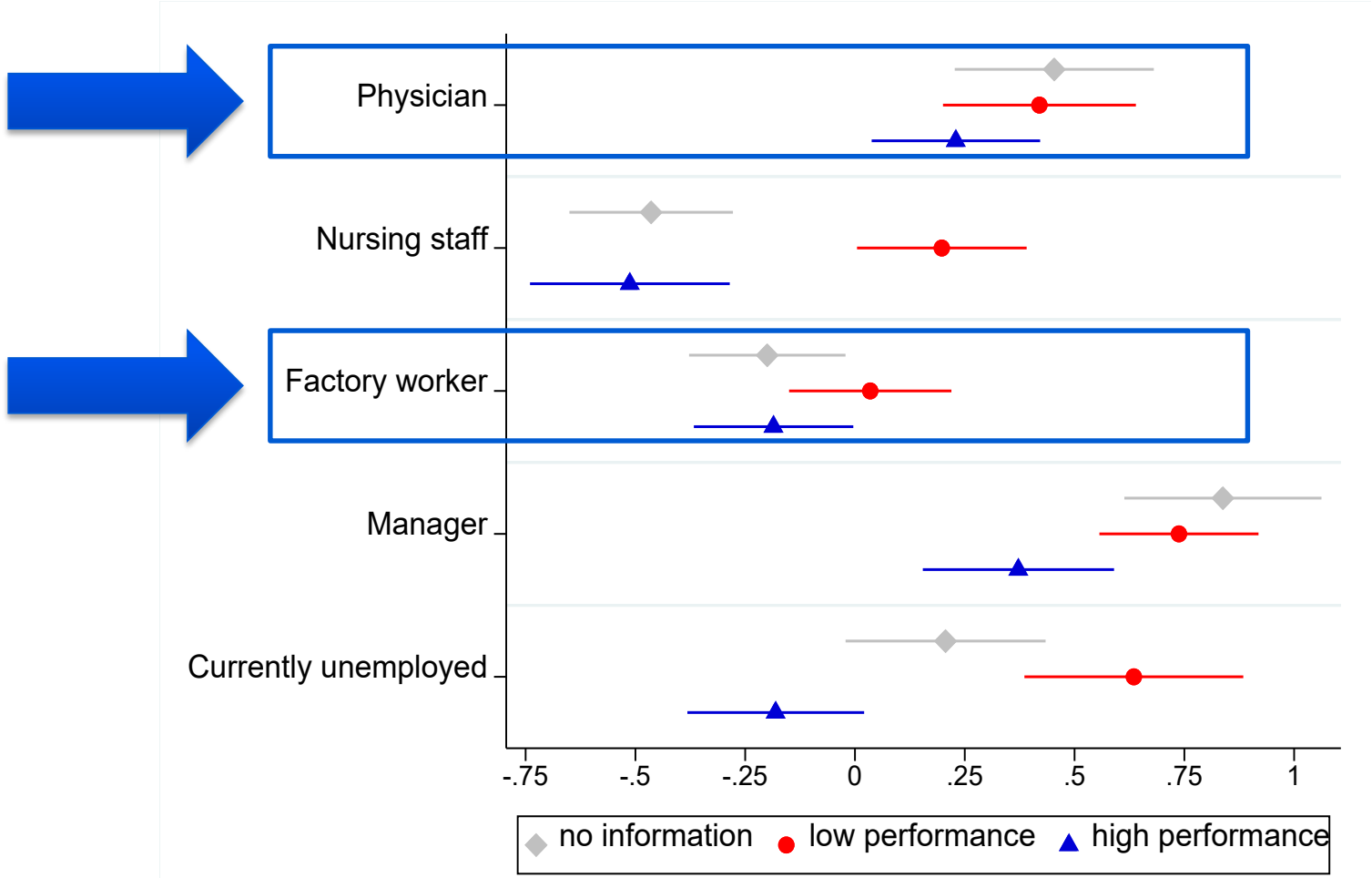

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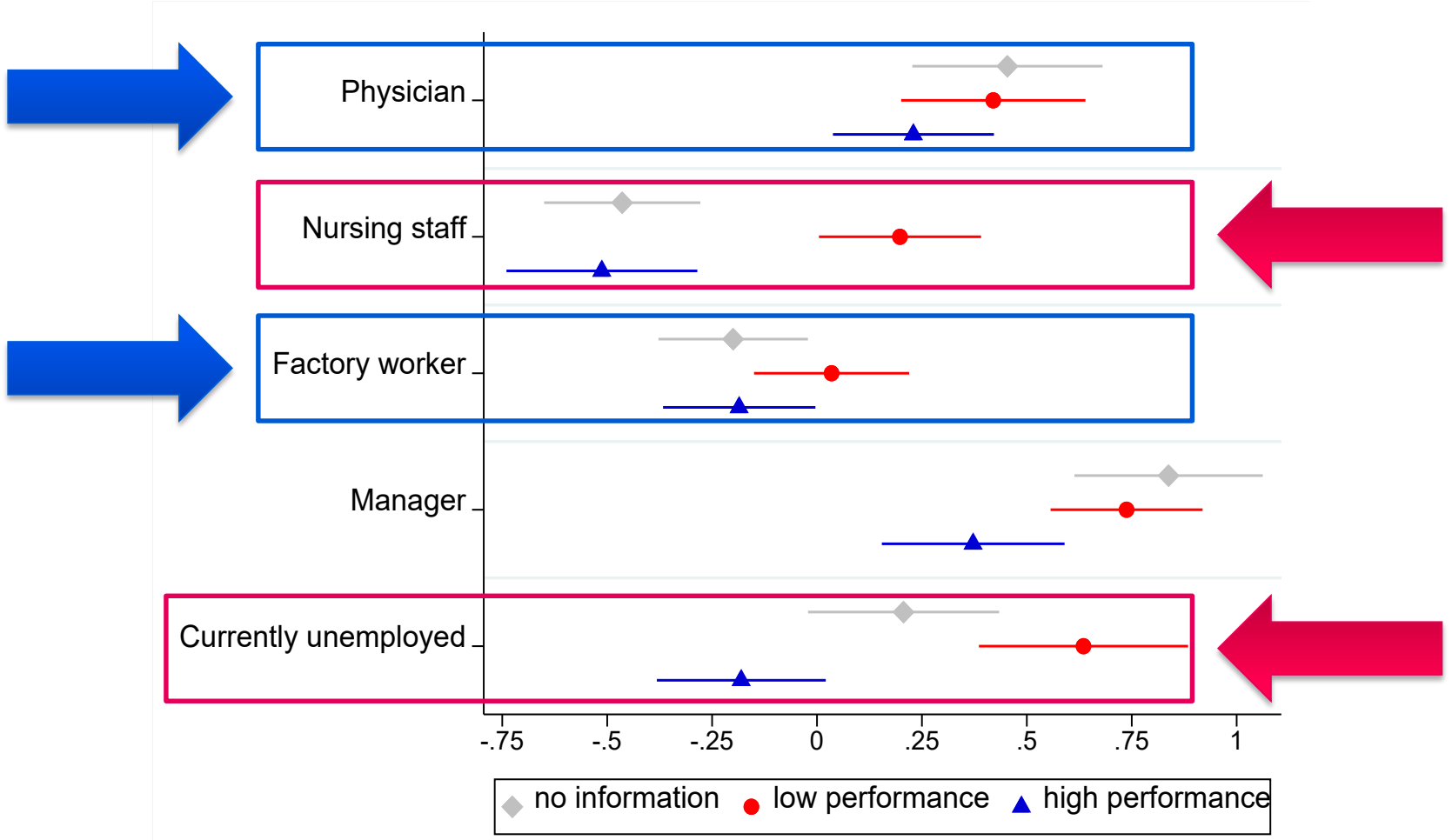

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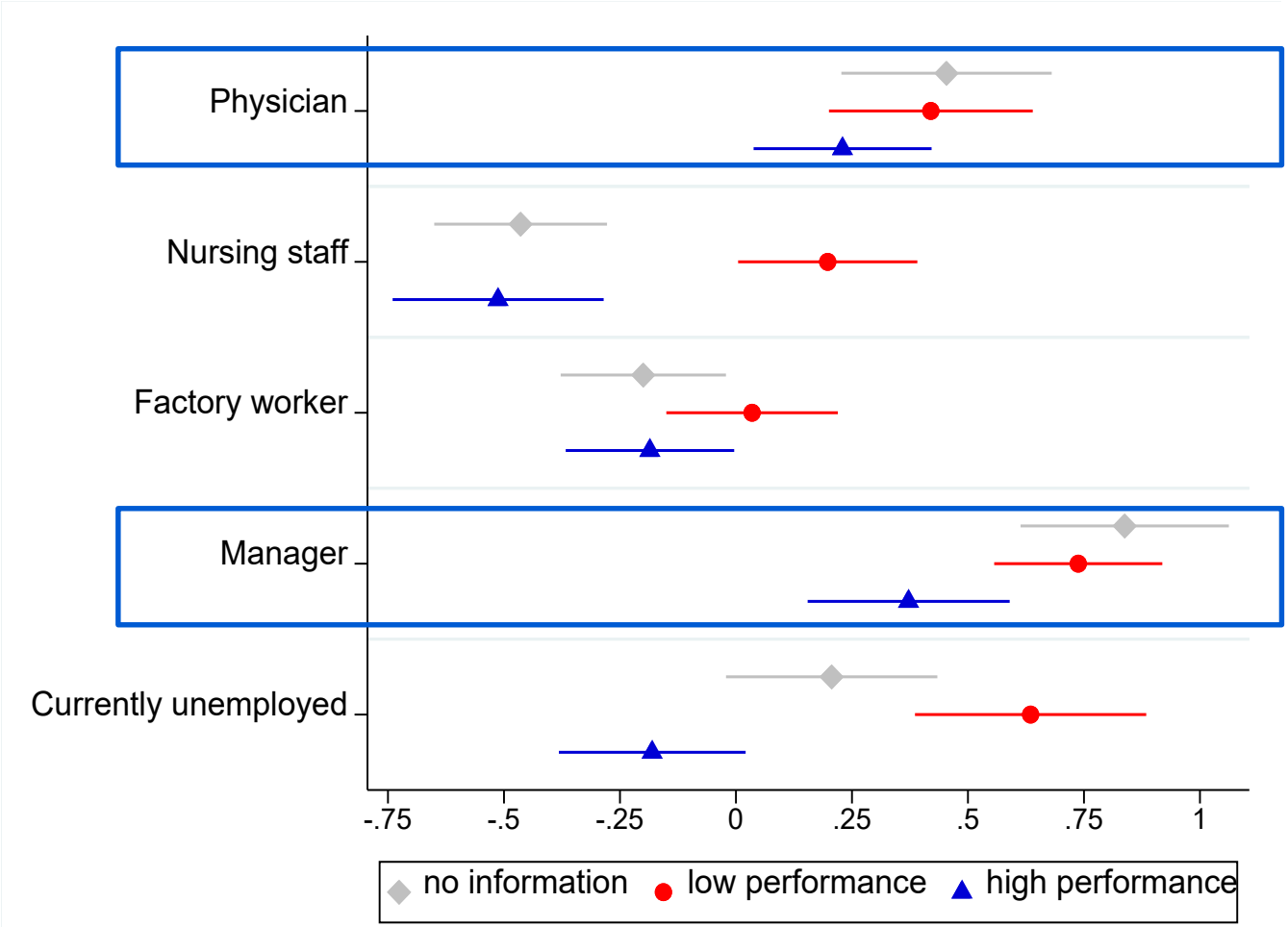

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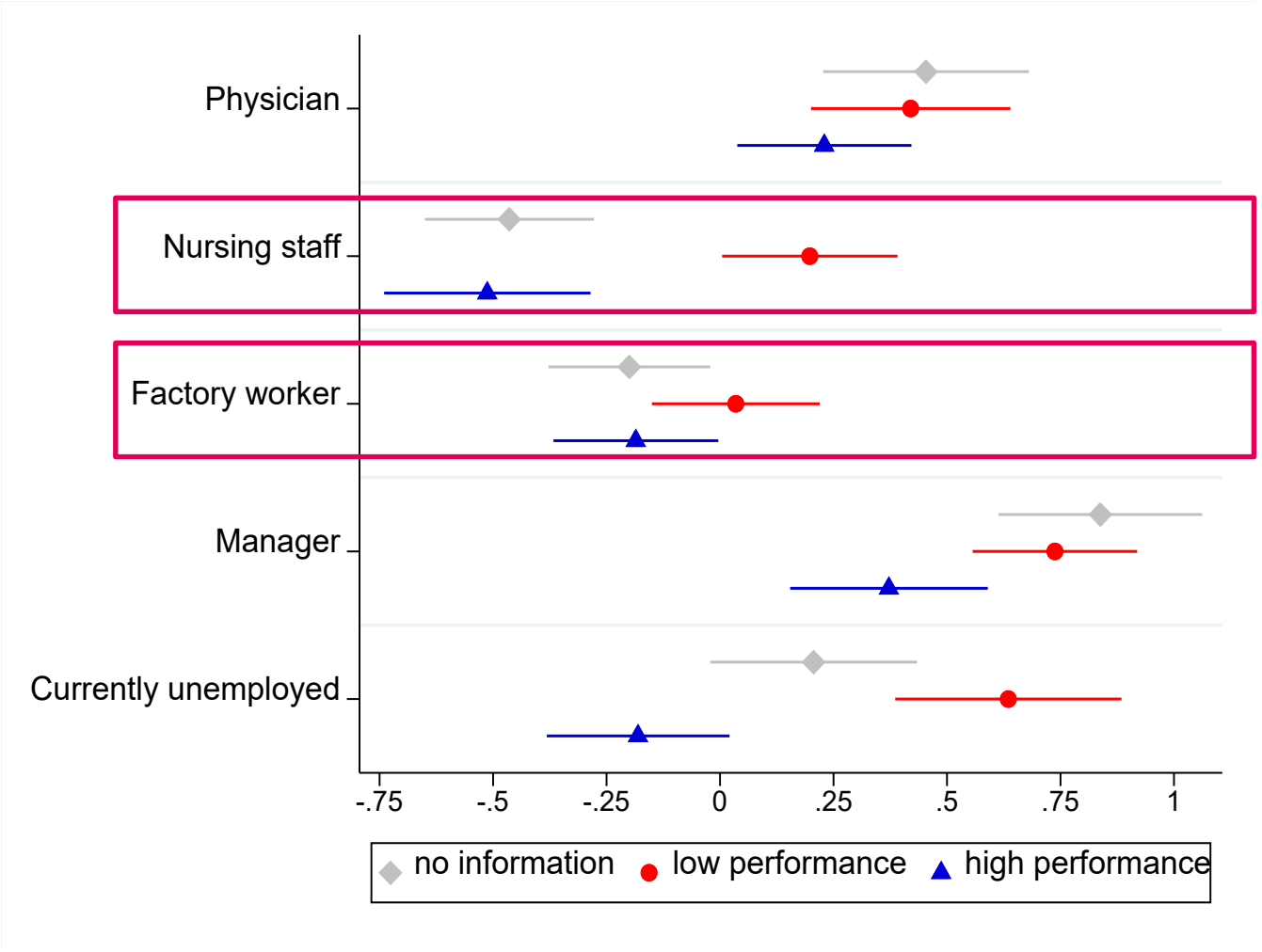

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Discussion

- Generally, it seems feasible to apply the (FS) methods of empirical justice research on other topics (such as fairness of earnings) to housing inequality or fairness of housing evaluations.

- Findings in a nutshell:
  - All distributive justice principles (merit, need, entitlement) are applied.
  - …but their impact is comparatively low as compared to the effects of living space and costs.
  - Need (having children) dominates merit.
  - Status entitlement:
    - No gender main effect.
    - Higher occupational status are entitled less favorable housing conditions.
  - Some evidence for double standards: gender, occupational status.

Discussion

- To be discussed:
  - ICC = zero? If no artifact, then of utmost interest.
  - Occupational status effects biased because no information on income was given?
  - Very high square meter price (14 € / m^2) regarded as fair: framing effect?

- Limitations:
  - Restricted FS setup regarding the number of vignette dimensions included.
  - No direct test of equality principle.
  - Local context: generalizability?
  - Rental market only.

Discussion

- Future work:
  - Replications and extensions!
  - Discrimination? Especially regarding ethnic origin.
  - Local or geographically larger (nationwide) contexts better suited for studying fairness of housing?
  - Housholds or individual persons?
  - Respondent effects? E.g.:
    - Differential norms (Auspurg et al. 2017)
    - Haves versus Have-Nots (Reeskens/ van Oorschot 2013)
    - Left- vs. right-wing
    - Etc.

Thank you very much!

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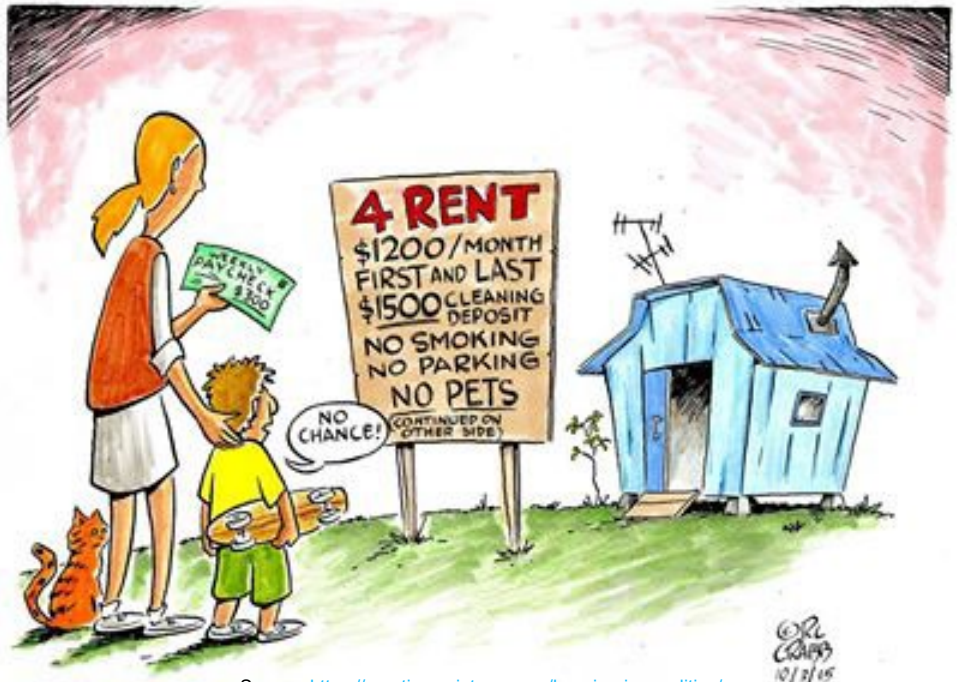

Source: https://creativeresistance.org/housing-inequalities/

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Appendix Slides

Motivation

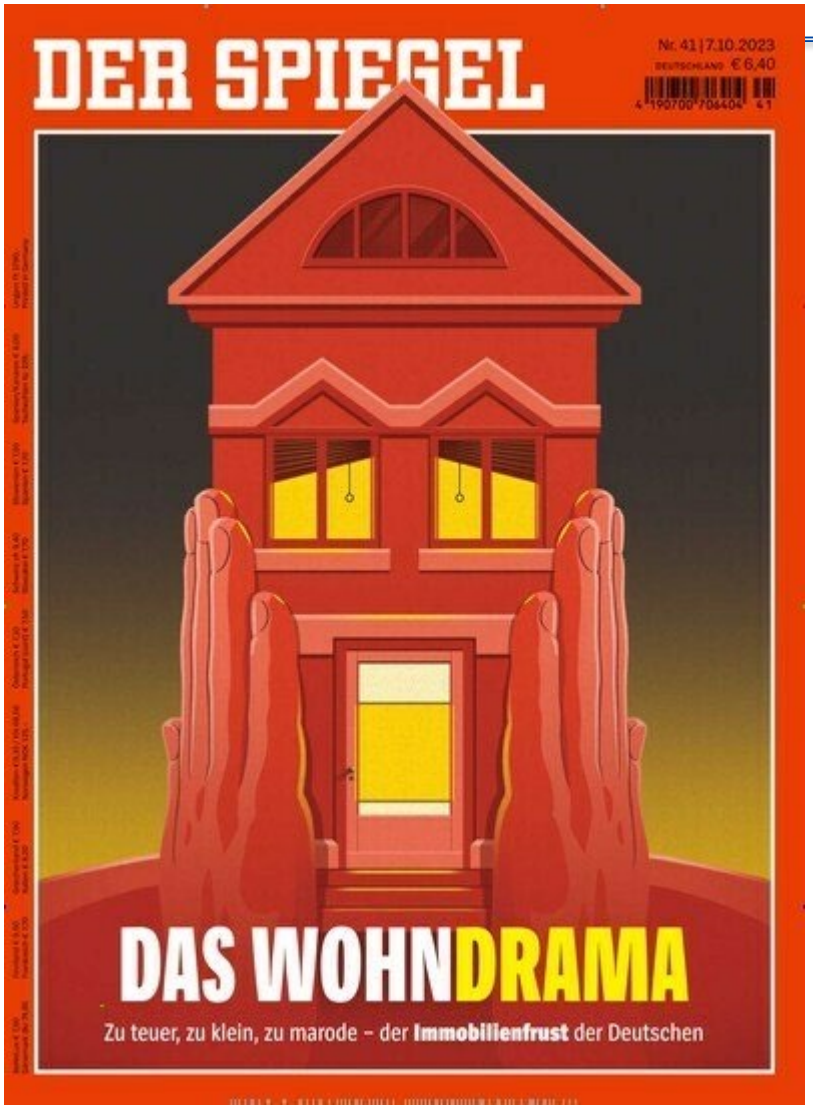

DER SPIEGEL
Nr. 41 | 7.10.2023
DEUTSCHLAND € 6,40
DAS WOHNDRAMA
Zu teuer, zu klein, zu marode – der Immobilienfrust der Deutschen


Bild
MEDIATHEK
Bild+
44,7 qm für junge Menschen
68,5 qm für Senioren
Bild+
Ist Wohnen ungerecht?

Research Strategy: General Thoughts

- Strategy: FS experiment, building on empirical justice research, esp. fairness of earnings studies.

- FS setup requires to include not just one (e.g., wage, amount of wealth tax etc.), but many inequality/allocation dimensions (costs, living space, ownership status, neighborhood characteristics etc.).

  …plus vignette dimensions for merit, need etc.

- ➔ Compromises necessary w/ respect to what is feasible within one FS setup.

Study Design: FS Experiment

- $2^4 \times 3^1 \times 4^2 \times 5^1$ design, universe = 3,840 vignettes.
- D-efficient vignette sample:
  - 244 vignettes blocked into 44 decks.
  - D = 96.2.
  - All 2^{nd}-order interactions (quasi) orthogonalized.
  - 6 vignettes per respondent.
- No exclusion of potentially implausible vignette combinations.
- Ranges of dimensions living space (m^2) and monthly costs (€) mirror the actual distributions for rental market in Konstanz.

FS Experiment: Vignettes Introduction

"In the following, we will look at which **housing conditions** in Constance are perceived as **fair** by the residents.

For this purpose, we present 6 different **fictitious persons and their housing conditions** with randomly compiled characteristics.

Please assume that all sample persons are German and live for rent in an apartment in Constance. The housing situation is in each case a combination of living space, location, and housing costs (cold, without utilities).

We are interested in how **fair** you think the housing situation presented is for the respective person: Is the housing situation **fair** or **unfairly bad** or **unfairly good**?

Please indicate your answers on the scale from −5...0...+5."

FS Experiment: Example Vignette

Eine Frau Anfang 40 arbeitet als Managerin.

Sie lebt ohne Lebenspartner/in und ohne Kinder zur Miete in einer 110 qm großen Wohnung in durchschnittlicher Wohnlage.

Die monatlichen Wohnkosten (ohne Nebenkosten) betragen 500 Euro.

Ist die Wohnsituation dieses Haushalts **gerecht** oder ist die Wohnsituation Ihrer Meinung nach **ungerecht zu schlecht**, oder **ungerecht zu gut**?

-5	-4	-3	-2	-1	0	+1	+2	+3	+4	+5
Ungerecht: zu schlecht					Gerecht					Ungerecht: zu gut
○	○	○	○	○	○	○	○	○	○	○

FS Experiment: Design

[2] The data source for this was the 2020 wave of the Konstanz Citizen Survey in which a module on housing was implemented (cf. Spanner et al. 2021). According to these data and after excluding homeowners and shared flats (the latter ones mostly used by students), the 50 m^2 to 140 m^2 range for living space in the vignette setup represents 78 percent of the actual distribution (18 percent live in less than 50 m^2, 4 percent in more than 140 m^2); the 500 € to 1,400 € range of monthly housing costs represents 82 percent of the actual distribution (7 percent pay less than 500 €, 11 percent more than 1,400 €). Hence, the vignette levels picture quite well the actual range of living surface and rental costs in Konstanz, all the more the 2020 sample, even after excluding flat-shares, still contains 7 percent students who presumably skew the distributions of the two variables to the left.

FS Experiment: Design

Table S3: Correlation Matrix of Vignette Dimensions: Design Matrix

#	1	2	3	4	5	6	7
1							
2	0.019						
3	−0.014	−0.003					
4	0.016	0.002	−0.005				
5	−0.015	0.019	0.005	−0.001			
6	−0.027	0.004	0.002	0.020	0.007		
7	0.015	0.008	0.014	−0.015	0.015	0.007	
8	0.014	0.023	0.010	−0.014	0.027	0.030	0.000

FS Experiment: Design

Table S4: Correlation Matrix of Vignette Dimensions: Sample

#	1	2	3	4	5	6	7
1							
2	0.050						
3	−0.026	−0.010					
4	0.013	0.019	−0.025				
5	−0.038	0.015	−0.010	−0.011			
6	−0.019	0.010	−0.025	0.007	0.026		
7	0.000	0.020	0.041	−0.009	0.003	0.000	
8	0.009	0.041	0.004	−0.024	0.016	0.034	−0.010

Descriptive Sample Characteristics

Variable		Mean	SD	N
Gender female		0.53		1,154
Age		48.31	17.63	1,154
Education:	max. Hauptschule	0.05		1,148
	Realschule (secondary school)	0.14		
	Abitur	0.2		
	Univ. diploma (incl. applied science)	0.59		
	Other	0.02		
Not born in Germany		0.16		1,148
Migration background		0.28		1,144
Marital status:	single	0.39		1,151
	married	0.54		
	divorced	0.06		
	widowed	0.02		
No children		0.48		1,148
Homeowner		0.39		1,125

Note: Migration background takes the value 1 if the respondent or at least one parent is not born in Germany.

Regression Results

	Estimates		
	b	*SE*	*p-value*
Gender (0 = male)			
Female	0.047	0.056	0.406
Occupation (0 = nursing staff)			
Physician	0.646	0.085	0.000
Factory worker	0.144	0.072	0.046
Manager	0.909	0.086	0.000
Currently unemployed	0.489	0.084	0.000
Performance/effort job (search) (0 = high)			
Low	0.460	0.066	0.000
Empty/no information	0.214	0.065	0.001
Living partner (0 = single, no partner)			
With partner	−0.222	0.051	0.000
Children (0 = no children)			
Two children	−0.848	0.054	0.000
Living space (0 = 50 m^2)			
80 m^2	1.536	0.074	0.000
110 m^2	2.586	0.083	0.000
140 m^2	3.253	0.088	0.000

Regression Results

Location (0 = average)			
Very good	0.456	0.052	0.000
Monthly costs (0 = 500 €)			
800 €	−0.879	0.072	0.000
1,100 €	−1.641	0.083	0.000
1,400 €	−2.351	0.081	0.000
Constant	−0.843	0.107	0.000
Var(Constant)	0.545	0.077	
Var(Residual)	3.289	0.106	
R^2 (McFadden)	0.116		

Note: Linear multilevel regression, dependent variable: justice evaluation of example (vignette) residential situation. Unstandardized regression coefficients and robust standard errors. Estimates correspond to Figure XX in the main article. Due to computational issues, the log-likelihood value from the random-intercept-only model was used as the baseline log-likelihood value for the calculation of McFadden R^2. N(respondents) = 1,097; N(vignettes) = 6,529.

Regression Results

	Estimates		
	b	*SE*	*p-value*
Gender (0 = male)			
Female	0.059	0.057	0.300
Occupation (0 = nursing staff)			
Physician	0.650	0.087	0.000
Factory worker	0.155	0.074	0.036
Manager	0.930	0.090	0.000
Currently unemployed	0.510	0.085	0.000
Performance/effort job (search) (0 = high)			
Low	0.471	0.068	0.000
Empty/no information	0.237	0.064	0.000
Living partner (0 = single, no partner)			
With partner	−0.206	0.051	0.000
Children (0 = no children)			
Two children	−0.838	0.055	0.000
Living space	0.036	0.001	0.000
Location (0 = average)			
Very good	0.446	0.052	0.000
Monthly costs	−0.003	0.000	0.000
Constant	−1.168	0.136	0.000
Var(Constant)	0.539	0.077	
Var(Residual)	3.346	0.105	

Note: Linear multilevel regression, dependent variable: justice evaluation of example (vignette) residential situation. Unstandardized regression coefficients and robust standard errors. N(respondents) = 1,097; N(vignettes) = 6,529.

Regression Results

	Estimates		
	b	*SE*	*p-value*
Gender (0 = male)			
Female	0.060	0.057	0.291
Occupation (0 = nursing staff)			
Physician	0.651	0.088	0.000
Factory worker	0.141	0.076	0.064
Manager	0.928	0.090	0.000
Currently unemployed	0.499	0.085	0.000
Performance/effort job (search) (0 = high)			
Low	0.482	0.068	0.000
Empty/no information	0.230	0.065	0.000
Living partner (0 = single, no partner)			
With partner	−0.212	0.051	0.000
Children (0 = no children)			
Two children	−0.840	0.055	0.000
Living space	0.036	0.001	0.000
Location (0 = average)			
Very good	0.453	0.053	0.000
ln(monthly costs)	−2.239	0.079	0.000
Constant	11.505	0.522	0.000
Var(Constant)	0.536	0.077	
Var(Residual)	3.352	0.105	

Note: Linear multilevel regression, dependent variable: justice evaluation of example (vignette) residential situation. Unstandardized regression coefficients and robust standard errors. N(respondents) = 1,097; N(vignettes) = 6,529.

Regression Results

	Estimates		
	b	*SE*	*p-value*
Gender (0 = male)			
Female	−0.088	0.099	0.373
Occupation (0 = nursing staff)			
Physician	0.650	0.086	0.000
Factory worker	0.140	0.072	0.051
Manager	0.908	0.086	0.000
Currently unemployed	0.487	0.084	0.000
Performance/effort job (search) (0 = no info)			
Low	0.067	0.087	0.438
High	−0.238	0.092	0.010
Living partner (0 = single, no partner)			
With partner	−0.220	0.050	0.000
Children (0 = no children)			
Two children	−0.842	0.054	0.000
Living space (0 = 50 m^2)			
80 m^2	1.544	0.074	0.000
110 m^2	2.592	0.083	0.000
140 m^2	3.255	0.088	0.000
Location (0 = average)			
Very good	0.462	0.052	0.000
Monthly costs (0 = 500 €)			
800 €	−0.881	0.072	0.000
1,100 €	−1.650	0.082	0.000
1,400 €	−2.353	0.081	0.000
Interaction effects			
Female × performance low	0.366	0.136	0.007
Female × performance high	0.045	0.136	0.742
Constant	−0.569	0.109	0.000

Fair Housing Conditions for Example Constellations

$$JLSR_{rel} = exp\left(\frac{\beta_{children}}{-\beta_{livingspace}}\right)$$

JLSR = „just living space ratio“
$ß_{children}$ = coefficient for „children in household“
$ß_{livingspace}$ = coefficient for „living space“

Fair Housing Conditions for Example Constellations

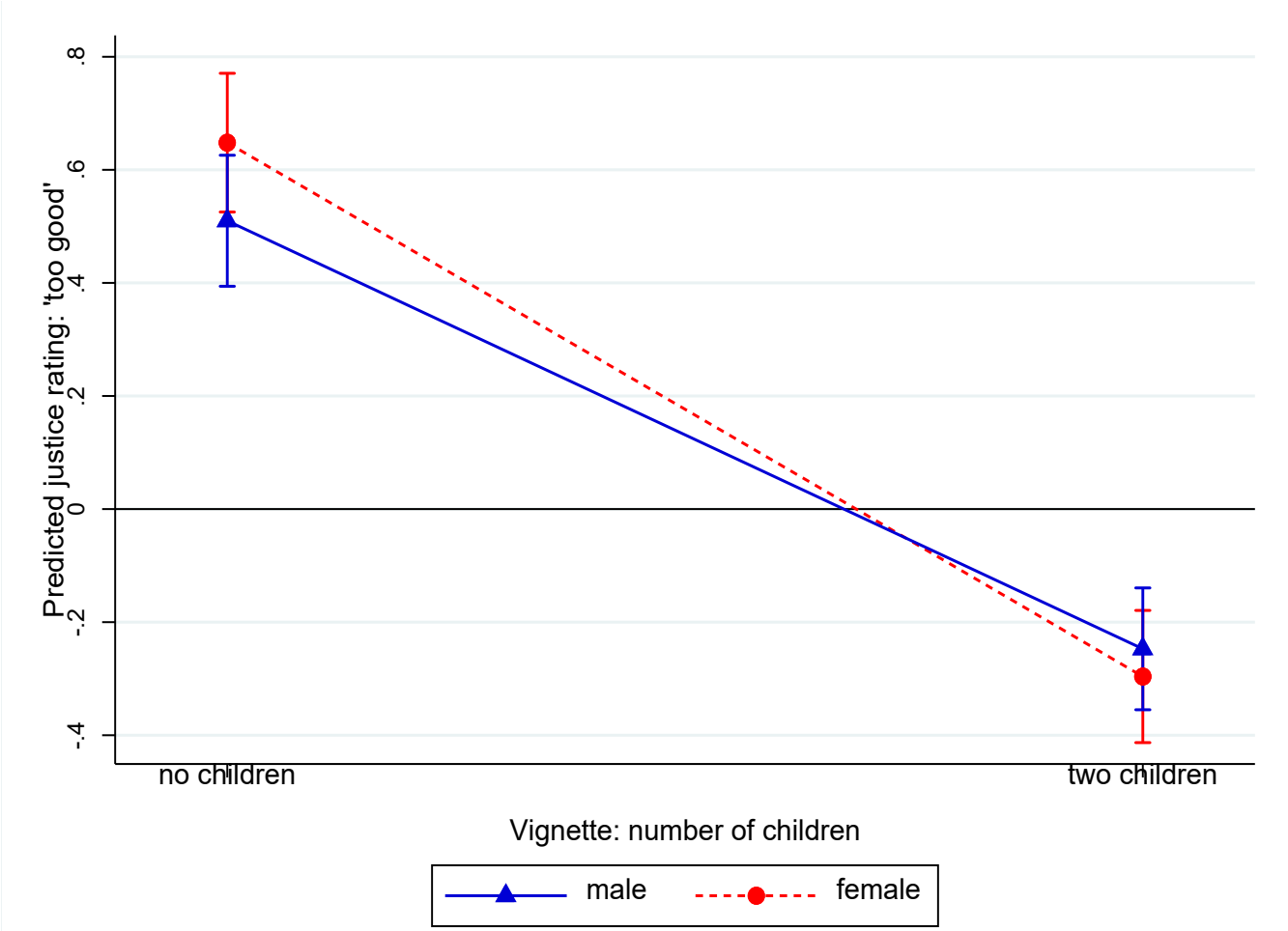
	Absolute estimate	Relative estimate (%)
Fair monthly costs (€) per m^2 living surface	13.97	1.63
Fair monthly cost change (€) for two children vs. no children	−325.04	−31.27
Fair monthly cost change (€) for good location vs. average location	+173.13	+22.45
Fair monthly cost change (€) for a physician (medical doctor) vs. nurse	+252.24	+33.07
Fair monthly cost change (€) for a manager vs. factory worker	+300.53	+42.12
Fair living space change (m^2) for two children vs. no children	+23.27	+30.42
Fair living space change (m^2) for an unemployed vs. nurse	−14.15	−14.44
Fair living space change (m^2) for high job performance vs. low performance	+12.70	+14.98

Fair Housing Conditions for Example Constellations

	Estimate *absolute (percent)*	**95 % CI**
Fair monthly costs (€) per m^2 living surface	13.97 (1.63)	12.94…15.0 (1.51…1.75)
Fair monthly cost change (€) for two children vs. no children	−325.04 (−31.27)	−372.45…−277.63 (−35.01…−27.52)
Fair monthly cost change (€) for good location vs. average location	+173.13 (+22.45)	215.64…130.63 (16.41…28.48)
Fair monthly cost change (€) for a physician (medical doctor) vs. nurse	+252.24 (+33.07)	186.83…317.65 (23.48…43.96)
Fair monthly cost change (€) for a manager vs. factory worker	+300.53 (+42.12)	239.06…362.00 (32.09…52.14)
Fair living space change (m^2) for two children vs. no children	+23.27 (+30.42)	20.39…26.15 (26.23…34.61)
Fair living space change (m^2) for an unemployed vs. nurse	−14.15 (−14.44)	−18.83…−9.47 (−18.92…−9.96)
Fair living space change (m^2) for high job performance vs. low performance	+12.70 (+14.98)	9.11…16.30 (10.38…19.58)

Note: Estimates were derived by applying formula 1 and 2 to the vignette main effects models documented in the online supplement in Tables S6–S8. The first estimate shows absolute changes, i.e., Euro or square meter units. The second estimate in brackets shows percent changes estimated from models in which the natural logarithms of the monthly costs and living space variables, respectively, were entered into the models.

Double Standards: Gender × Children



Double Standards

Table 4: Overview: Double Standards/Discrimination by Gender and Occupation

Interacted vignette variable	Gender	Occupation
Occupation	No	
Performance/Effort job (search)	Yes	Yes
Living partner	No[a]	No, except unemployed
Children	Yes (10 % level)	No
Living space	No	No
Location	No	No
Monthly costs	No	No (erratic)

Note: Effects marked with [a] have p-values lower than 0.1 and are substantially small. See the main text for more information. Full regression tables are reported in the online supplement in Tables S9–S21.

Outlook

- I conducted a second pilot study:
  - Germany nationwide (Respondi/Bildendi), N > 3.000.
  - Qualitative vignette dimensions only. But metric ones apparently work better.
  - Additional justice principles indicators and housing inequality dimensions.
  - Investigate effects by local housing market conditions on fairness ratings (geo-code data).