

Work Meaning and Fair Wages

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1 Outline

1 Motivation and Contribution

- 2 Theoretical Model
- **3** Survey Experiment
- 4 Results
- **6** Conclusion





1 Labour Supply

The willingness to work is falling

- Barnichon and Figura (2016) LT trends (intensive margin)
 - General trend: fewer people want a job
 - Particularly: low-income and non-single households (with children)
- Faberman et al. (2022) persistent effect of the pandemic decreasing desired hours of work (extensive margin)

What motivates people to take up a job?

- Job search model: accept job offer if wage > reservation wage
 - Reservation wage: lowest wage of an acceptable job offer
 - The key concept that summarizes search strategy
 - Large literature: McCall (1970), Lancaster and Chesher (1983), Le Barbanchon et al. (2019)



1 Work Meaning

- Money is not the only determinant of labour supply
- Work meaning the significance of a job for others or for society – as an alternative motivation
 - 1 Surveys show that many workers care about meaning
 - Maestas et al. (forthcoming) and Dur and van Lent (2019)
 - 2 Meaning can increase performance
 - Kosfeld et al. (2017) and Chandler and Kapelner (2013)
 - 3 Meaning can decrease reservation wages
 - Burbano (2016) and Kesternich et al. (2021)

There is more to the relation between meaning and labour supply





1 Work Meaning and Fairness

Important fairness dimension to meaning Kesternich et al. (2021)

- Creating benefits for others can increase compensation demands
 - Individuals request a share of what they produce
 - Think also of public debates on wages of 'essential workers'
- Creating benefits for other can decrease compensation demand
 - Meaning as a traditional amenity (telecommuting, flexibility, ...)
- > Demand depends on worker's philosophical fairness ideals
 - In which there is a lot of heterogeneity Cappelen et al. (2007)



1 Contribution

We study how work meaning affects labour supply

- Construct a simple theoretical model to analyse the relation between meaning and labour supply
- Collect data on within-subject variation in work meaning
 - Samples from The Netherlands, Germany, and the US
- Identify the share of workers that increase or decrease their compensation demands and by how much
 - Study how this relates to fairness concerns
 - Compare the effects of meaning on reservation wages to those of **regular amenities** and **productivity increases**



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Survey Experiment Experimental Design Research Hypotheses

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5 Conclusion



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2 Labour Supply Model

A worker receives a **job offer** that can be accepted or rejected

- Reject \implies payoff is $\overline{U} > 0$
- Accept \implies earn a wage w and exert effort e > 0

Workers' utility after accepting a job is:

$$U(w, e, x) = w + \theta m(e, x) - \alpha (\pi^{f}(e, e^{o}, x) - w)^{2} - c(e)$$
 (1)

- x is a productivity parameter
- $m(\cdot)$ the generated amount of meaning
- $\pi_f(\cdot)$ the wage the worker considers fair
- c(e) > 0 the effort cost of doing the job
- $e_0 > 0$ the effort of others



- 2 Labour Supply Model: Reservation Wage
 - Workers **accept** the job if $U(w, e, x) \ge \overline{U}$
 - So the reservation wage w^* is the smallest w that satisfies

$$U(w, e, x) = \bar{U}$$

This indifference condition allows us to study how changes in a worker's job affect her reservation wage



2 Reservation Wage and Productivity

Consider first a change in productivity *x*

$$\frac{dw^*}{dx} = -\frac{\theta m_x(e, x) - 2\alpha (\pi^f(e, e^o, x) - w^*) \pi^f_x(e, e^o, x)}{1 + 2\alpha (\pi^f(e, e^o, x) - w^*)}$$
(2)

- Assuming the fair wage exceeds the reservation wage, we find that reservation wages can **increase** or **decrease** depending on:
 - Relative strength of the meaning and fairness concerns
 - Relative impact of productivity changes on meaning and the fair wage



2 Reservation Wage and Effort Cost

• Consider now a reduction in effort costs c(e)

$$\frac{dw^*}{dc(e)} = \frac{1}{1 + 2\alpha(\pi^f(e, e^o, x) - w^*)}$$
(3)

• Assuming the fair wage exceeds the reservation wage, this reduces the reservation wage w^*



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2 Reservation Wage and Fairness Concerns

Context switch: consider an ultimatum bargaining game

- A dictator chooses the **split** of a fixed **endowment** $\bar{\pi}$
- Let w be the offer to the worker
- The worker decides between accepting or rejecting this offer
 - Accept \implies worker gets w and dictator gets $ar{\pi}-w$
 - Reject \implies both earn zero



2 Reservation Wage and Fairness Concerns

Consider now the effect of fairness concerns α in an ultimatum bargaining concept:

$$\frac{dw^*}{d\alpha} = \frac{(\pi^f - w^*)^2}{1 + 2\alpha(\pi^f - w^*)}$$
(4)

- The reservation offer w^* the smallest offer a worker would accept
- More concerned with fairness means the **smallest offer** you accept **increases**
- Or: an increase in the level of fairness concerns increases the reservation offer w^{\ast}
- Different functions π_f represent different fairness ideals
 - e.g. a *libertarian view* proposes that:

$$\pi_f(e, e_0, x) = \pi(e, e_0, x) - \pi(0, e_0, x).$$

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3 Survey Experiment: Overview

- Want to examine whether changes in work meaning have a positive or negative effect on reservation wages
- We elicit reservation wages through standard procedure
 - See e.g. Kesternich et al. (2021; 2022) or Caliendo et al. (2017)
- We introduce an exogenous variation in work meaning
 - We also consider differences in other amenities and productivity
 - The variation and elicitation procedure is same as for meaning



1 Expected wage

"We are interested in what you expect to be a realistic net monthly salary. Thus, we mean the salary you would expect from an employer net of all deductions and taxes/levies. Suppose you had to search for a full-time job next month.

What do you think would be a realistic net monthly salary for 40 hours of work per week, considering your qualifications and your experience?"

2 Reservation wage

"How much would the monthly net wage have to be as a minimum, for you to be willing to take the job?"





3 Reservation wage: with meaning

"You stated that for a 38 hour work week the minimum net monthly salary you would want to earn is w^* USD. Now imagine that the job you are considering directly or indirectly helps needy (sick or elderly or poor) people, children or the environment. This job is the same as your previous one, but through your work you now provide direct or indirect help to others or the environment (e.g. in terms of education, health, or environmental protection). Suppose these additional benefits (to sick, poor or elderly people, children or the environment) are equivalent to X USD per month. Can you imagine taking this job even if your salary would be less than w^* USD?"

[Answer: 'Yes' / 'No']



4.1 Decrease wage demand. if 'yes' to question 3

"How much less than w^* USD could your net monthly wage be in order for you to take this job with direct or indirect benefits for needy (sick or elderly or poor) people, children or the environment?"

[Answer: Δ_l USD]



4.1 Don't decrease wage demand. if 'no' to question 3

"Please indicate which of the following applies to you."

[Answer: 'I would take this job at a salary of $w^*~{\rm USD'}$ or 'I would take this job only if the salary was higher than $w^*~{\rm USD'}]$

4.2 Increase wage demand. if ...higher...' to question 4.1

"How much more than w^* USD must your net monthly wage be in order for you to take this job with direct or indirect benefits for needy (sick or elderly or poor) people, children or the environment?"

[Answer: Δ_h USD]



5 Confirmation.

"You indicated that you would require at least a salary of $w^* - \Delta_l / w^* / w^* + \Delta_h$ to accept a job where you directly or indirectly help needy (sick or elderly or poor) people, children or the environment.

Is that correct?"

[Answer: 'Yes' or 'No, I want to change my reply']



3 Survey Experiment: Additional Information

- The values for X are $\{1.000, 10.000, no amount\}$
- Similar procedure for profits and amenities
 - "Now imagine that the job you are considering directly or indirectly **increases your employer's profits** [...] by X USD"
 - "Now imagine that the job you are considering offers":
 - 20 minutes less commute daily (round trip)
 - one more optional paid day on working from home (per week)
 - one more optional unpaid day off (per month)
 - We randomly assign respondents to one of these treatments
- Fairness concerns are elicited through an ultimatum game
- Collected additional information (demographics and social preferences from Global Preference Survey of Falk et al. (2018))



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3 Survey Experiment: Ultimatum Game

Next, we would like you to imagine the following hypothetical situation:

We give a person \$20 to share with you. You can accept or reject the share that the other person proposes. If you reject the share, no one will get any money.

For example, the other person proposes to give you \$4 and keeps \$16 for themself. If you accept this share, you will get \$4 and the other person \$16. If you reject the share, no one will get any money.

Please decide whether to accept or reject the following shares:

	Accept	Reject
The other person gets \$20, you get \$0	0	0
The other person gets \$18, you get \$2	0	0
The other person gets \$16, you get \$4	0	0
The other person gets \$14, you get \$6	0	0
The other person gets \$12, you get \$8	0	0
The other person gets \$10, you get \$10	0	0



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3 Hypotheses

Testable hypotheses are derived from the theoretical framework:

- 1 For some subjects the meaning variation **decreases** the reservation wage, and for some it **increases** the reservation wage
- 2 Subjects with higher fairness concerns are on average less likely to lower their reservation wages than those with lower fairness concerns
 - meaning/profit
- 3 The **increase** in the average reservation wage in X is **larger in the profit treatments** than in the meaning treatments
- 4 The following **ordering** holds for the **share** of subjects for whom the job variation **weakly reduces the reservation wage**:

 $\alpha^{amenity} \approx 1$ and $\alpha^{amenity} > \alpha^{meaning} > \alpha^{profit}$.



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4 The Sample

- Survey fielded in NL and GER
 - LISS panel in NL (2022)
 - Bilendi in GER (2023)
 - Professional survey company with pre-recruited sample

Cleaning procedure:

- Respondents failing an attention check: drops 15-30% of sample
- Drop speeders: 5% quickest (<3 minutes)
- Unreasonable RW: drop 1% on both ends of distribution
- Detached from the labour force: age not between 18 and 70

Resulting samples on next two slides



	Nr Observations
100€	532
1.000€	591
10.000€	564
100.000€	627
No amount	580

Table 1: The Netherlands (LISS, N = 2939)

Table 2: The United-States (Bilendi, N = 3490)

	Meaning	Profit	Amenity
No Amount	499	514	474
1.000€	514	489	0
10.000€	516	484	0





Table 3: The Netherlands (LISS)

	Share Women	Age	Share Married	Nr Children	Res Wage
100€	0.56	45.85	0.51	0.95	2664.95
1.000€	0.56	46.31	0.50	0.84	2653.61
10.000€	0.55	45.80	0.52	0.90	2670.14
100.000€	0.52	45.78	0.51	0.93	2688.70
No amount	0.54	45.81	0.47	0.91	2617.82

Table 4: The United-States (Bilendi)

	Share Women	Age	Share Married	Nr Children	Res Wage
No amount	0.68	48.72	0.49	0.59	5580.87
1.000€	0.66	48.84	0.47	0.57	5868.64
10.000€	0.66	48.49	0.49	0.55	5670.87



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4 Hypothesis 1: Shares

Hypothesis 1. There is a share of subjects for whom the **meaning** variation decreases the reservation wage and a share from whom it increases the reservation wage



4 Hypothesis 1: Shares (NL)

Figure 1: Shares changing reservation wages in NL, all amounts X





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4 Hypothesis 1: Shares (US)

Figure 2: Shares changing reservation wages in US, all amounts X





4 Hypothesis 2: Fairness

Hypothesis 2. Among those with relatively high fairness concerns the share of subjects who lower their reservation wage is smaller than among those with relatively low fairness concerns [meaning/profit]



4 Hypothesis 2: Shares Fairness (NL)

Figure 3: Shares changing reservation wages in NL, all amounts X, meaning treatment, by fairness concerns



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4 Hypothesis 2: Shares Fairness (US)

Figure 4: Shares changing reservation wages in US, all amounts X, meaning treatment, by fairness concerns





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4 Hypothesis 2: Shares Fairness (US)

Figure 5: Shares changing reservation wages in US, all amounts X, profit treatment, by fairness concerns



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4 Hypothesis 3: Amounts

Hypothesis 3. The **increase** in the average reservation wage in X is **larger in the profit treatments** than in the meaning treatments



4 Hypothesis 3: Amounts by Treatment (US)

	€ Sacrificed	€ Demanded
Profit	981.0	-258.7
	(662.8)	(418.9)
Amenity	1021.3	-311.6
	(1012.5)	(958.9)
Fairness	73.92	-112.3
	(145.2)	(98.35)
Unemployed	15.56	-1223.6**
	(1015.4)	(527.3)
Woman	456.6	87.77
	(612.0)	(427.7)
Demographic Controls	Yes	Yes
Observations	1133	1283

Table 5: Linear Regression Coefficients

Standard errors in parentheses

* p < 0.10,** p < 0.05,*** p < 0.01

- Meaning treatment is omitted
- Further 5% of outliers removed on both ends





4 Hypothesis 4: Shares by Treatment

Hypothesis 4. The following **ordering** holds for the **share** of subjects for whom the job variation **weakly reduces the reservation wage**:

 $\alpha^{amenity} \approx 1$ and $\alpha^{amenity} > \alpha^{meaning} > \alpha^{profit}$.



4 Hypotheses 4: Shares by Treatment

Figure 6: Shares changing reservation wages in US, all amounts X, amenity treatment





4 Hypotheses 4: Shares by Treatment

	Demands Increase
Profit	0.211***
	(0.0159)
Amenity	-0.0381
	(0.0243)
Fairness	0.0190***
	(0.00344)
Unemployed	-0.0774***
	(0.0292)
Woman	0.0591***
	(0.0156)
Demographics	Yes
Observations	4127

Table 6: Linear Regression Coefficients

Standard errors in parentheses

* p < 0.10, ** p < 0.05, *** p < 0.01





4 Some issues with the US

- Balance in US sample (women, reservation wages)
- US respondents have trouble indicating amounts:
 - About half of people who indicate an amount indicate more than half of their wages
 - Holds both positive and negative valuations
- Many US respondents demand higher wage and better amenity
- German sample looks better but still analysing



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5 Conclusion

We studied the relation between work meaning and labour supply

- Theoretically using a simple model
- Empirically using a survey experiment
- We find that varying meaning has an ambiguous effect on the reservation wage
 - Almost equal shares demand less/same/more compensation
 - Fairness concerns are an important driver of this demand
- This has important consequences for
- Our US sample has some issues but German sample seems more hopeful





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