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# Work Meaning and Fair Wages*

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**Abstract**

Work meaning can be an important driver of labor supply. Since, by definition, work meaning is associated with benefits for others, it also has an important fairness dimension. In a theoretical model, we show that workers' willingness to pay for work meaning can be positive or negative, depending on the relative strength of fairness concerns and meaning preferences. To examine the importance of these behavioral motives for labor supply, we conduct a survey experiment with representative samples from the Netherlands and Germany in which we vary within-subject the benefits that a job creates for others. We find that only a minority of workers are actually willing to sacrifice wage for work meaning. The average willingness to pay for work meaning is positive, but substantially lower than the willingness to pay for job flexibility. There is a strong negative relationship between fairness concerns and willingness to pay for work meaning. Thus, individuals who prioritize fairness are less likely to accept lower wages for meaningful work.

**Keywords:** Work Meaning, Labor Supply, Fairness Preferences

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# 1 Introduction

To attract consumers and talented workers, large companies often spend substantial resources on their mission statements or the development of corporate social responsibility programs. These investments are motivated by the insight that workers may value being employed in a job that generates benefits for others, in particular, for needy individuals or for the environment (Cassar and Meier, 2018). To investigate the link between the social mission of companies and labor markets, researchers from various disciplines examine to what extent *work meaning* or *job mission* – the significance of a job for others or for society – impacts labor supply.[1]

So far, the evidence is mixed. On the one hand, survey respondents typically indicate that they care about having a job in which they can contribute to society (Dur and van Lent, 2019, Kesternich et al., 2021, Burbano et al., 2024), and several studies show that making a job more meaningful increases labor supply (Burbano, 2016, Hu and Hirsh, 2017, Hedblom et al., 2019, Non et al., 2022) as well as workplace performance.[2] Further, a number of papers find in administrative data that *some* workers are willing to accept lower wages in order to work in organizations with a reputation for socially responsible behavior (Nyborg and Zhang, 2013), in green jobs (Krueger et al., 2023), or in industries that are not perceived as immoral (Schneider et al., 2024). On the other hand, there are also results from representative samples which suggest that work meaning has, on average, only a small or zero effect on labor supply. Maestas et al. (2023) show in a study on the valuation of working conditions that – relative to other job attributes like schedule autonomy, work arrangements, and paid time off – workers are only willing to give up a small share of their wage to obtain a more meaningful job.

How can one reconcile these observations? One potential explanation is that there is both a large share of individuals who value work meaning and who are willing to sacrifice wage for more meaning in their job, as well as individuals who exhibit a negative willingness to pay for work meaning. Kesternich et al. (2021) find both responses in an incentivized online experiment with a representative sample of the German population: Employed individuals who indicate that work meaning is very important to them significantly increase labor supply when

[1] In this paper, we use a narrow definition of *work meaning* derived from job mission, thus the benefits that a job creates for others and for society. In the psychological and economic literature, work meaning often also comprises aspects of job design, e.g., autonomy, relatedness, and competence; see, for example, Rosso et al. (2010), Steger et al. (2012), Cassar and Meier (2018), or Nikolova and Cnossen (2020). Burbano et al. (2024) explicitly distinguish between *meaning derived from social impact at work* and *meaning derived from non-social impact at work*. In this paper, we are only interested in the former. De Schouwer et al. (2025) show that social impact at work explains the bulk of the variation of work meaning measures.

[2] Positive effects of work meaning on performance in experimental settings are found in Ariely et al. (2008), Grant (2008), Chandler and Kapelner (2013), Chadi et al. (2017), Kosfeld et al. (2017), and Bäker and Mechtel (2018). Relatedly, a number of studies demonstrate that the "mission" of a project or a firm matter for workplace performance; see Tonin and Vlassopoulos (2010), Tonin and Vlassopoulos (2015), Imas (2014), Fehrler and Kosfeld (2014), Gerhards (2015), Carpenter and Gong (2016), and Cassar (2019).

their job becomes more meaningful. However, another subgroup of respondents – unemployed individuals – actually reduces labor supply if a job generates more benefits for others. The average effect of work meaning on labor supply in their full sample is slightly positive, but not significantly different from zero, similar to the findings in Maestas et al. (2023).

At first glance, it may appear odd that some individuals reduce labor supply when their job becomes more meaningful for society. There is a crucial factor that is often overlooked, but that may explain such a reaction. By definition, work meaning is associated with benefits for others and thus has an important fairness dimension. If a worker's job creates significant benefits for others, this may generate demands for more, not less compensation. Indeed, starting with Akerlof (1982), and Akerlof and Yellen (1990), a large literature in economics has established that workers care about whether their wage is fair given their contribution, and that they are willing to reduce their efforts if they perceive their treatment as unfair. Akerlof's fair wage hypothesis has been examined in many lab and field experiments; see, for example, Fehr et al. (1993), Gneezy and List (2006), and Cohn et al. (2015). If compensation schemes or the employer's treatment of workers are perceived as unfair, this reduces workplace performance (Kube et al., 2013, Cohn et al., 2014, Breza et al., 2018, Heinz et al., 2020) and can have negative long-term consequences for labor supply (Krueger and Friebel, 2022). Therefore, if workers sufficiently care about fairness, they may demand higher – not lower – wages if a job becomes more beneficial for society.[3]

In this paper, we evaluate how work meaning affects labor supply and to what extent responses to work meaning are driven by fairness concerns. To this end, we conduct a survey experiment with two representative samples of the working-age population, one from the Netherlands and one from Germany. The core feature of our study is that we directly elicit reservation wages for jobs with varying job attributes. The job variation takes place within-subject. Hence, we identify for each worker how she responds to a change in work meaning. In particular, we can distinguish between workers with a positive willingness to pay for work meaning and workers who demand higher wages if their job becomes more beneficial for society. Further, we investigate the association between respondents' reaction to work meaning and their fairness concerns, and we contrast (through a between-subject treatment variation) the respondents' willingness to pay for work meaning to their willingness to pay for job flexibility and employer profits.

Our research design is different from that employed in the recent literature that elicits workers' willingness to pay for non-wage job amenities. This literature relies on hypothetical choice

[3]This argument is also frequently made in public debates. For example, during the Covid-19 crisis, it became apparent that nurses, supermarket cashiers, truck drivers, and child care workers do jobs that are essential for society. The general reaction was to demand higher wages for these workers, especially since they often earn relatively little compared to workers in other occupations.

experiments, e.g., Eriksson and Kristensen (2014), Mas and Pallais (2017), Non et al. (2022), De Schouwer and Kesternich (2024), and Maestas et al. (2023). In a hypothetical choice experiment, respondents make several binary choices between two jobs that exhibit varying wages and non-wage attributes. Typically, respondents only choose between non-dominated options. Thus, hypothetical choice experiments imply that the estimates for respondents' willingness to pay for non-monetary job amenities are (weakly) positive. The advantage of hypothetical choice experiments over open questions is that the binary option design greatly reduces the noise in respondents' answers since extreme answers are not feasible. Their disadvantage is that they are unable to generate individual-level estimates of willingness to pay (except, if one would force every respondent to make a large number of choices). Thus, hypothetical choice experiments are not well-suited to study the distribution of willingness to pay for job attributes.

By directly eliciting reservation wages, we obtain unrestricted individual-level estimates of respondents' willingness to pay for job amenities. Reservation wage measures are used, for example, to study how unemployment benefits affect labor supply (DellaVigna and Paserman, 2005, Le Barbanchon et al., 2019) or how non-wage job attributes vary between jobs (Hall and Mueller, 2018). Hypothetical reservation wage measures have been shown to correlate with actual job acceptance decisions (Krueger and Mueller, 2016, Kesternich et al., 2022). Respondents may state exaggerated values for reservation wages. We manage this challenge through attention checks and standard data cleaning procedures. Additionally, we conduct a pre-test with open questions to check whether respondents understand the reservation wage elicitation procedure.

We find that respondents on average are willing to sacrifice wage for work meaning: The average willingness to pay is 5.4 percent of the reservation wage in the Dutch sample and 3.0 percent in the German sample. Both averages are significantly different from zero. The effect sizes are similar to those found in previous studies that examine representative samples, such as Maestas et al. (2023). For the German sample, we can compare the respondents' reaction to work meaning with their labor supply response to flexibility and employer profits. The willingness to pay for flexibility is on average 11.0 percent of the reservation wage and the willingness to pay for employer profits is -6.5 percent (i.e., respondents demand a wage increase). Thus, the effect of work meaning on labor supply is in between that of a flexibility enhancement and that of a profit increase for the employer.

In both samples, the average effect of work meaning on labor supply is driven by a minority of respondents. Roughly around 40 percent of respondents indicate that they are willing to reduce their reservation wage when their job becomes more beneficial for society. A similar share of respondents reports a willingness to pay for work meaning of zero, and a substantial fraction – around 22 percent – state higher reservation wages when their job generates

additional benefits for others. Thus, the majority of respondents does not exhibit a positive willingness to pay for work meaning.

Our main result is that fairness concerns predict the respondents' willingness to pay for work meaning. We elicit fairness concerns through a (hypothetical) ultimatum game in the survey experiment. Respondents who are willing to accept a higher (lower) share of unfair offers are less (more) concerned with fairness. In both samples, we find that respondents with low fairness concerns (according to the median split) exhibit a significantly higher willingness to pay for work meaning than respondents with high fairness concerns. The effect size is around 7 percentage points. Respondents with low fairness concerns have a willingness to pay for work meaning that equals around two-thirds of the average willingness to pay for flexibility. In contrast, respondents with high fairness concerns on average exhibit no willingness to pay for work meaning. These effects hold in a regression framework where we control for demographic variables, income, as well as the level of work meaning in the current job. Therefore, fairness concerns matter considerably for how employees adjust their labor supply in response to a variation in work meaning. Individuals to whom fairness is important are on average less willing to sacrifice wage for meaningful work.

For the German sample, we further examine how the combination of fairness concerns and altruism is associated to respondents' willingness to pay for work meaning. As one may expect, altruism has a strong positive effect on subjects' willingness to sacrifice wage for work meaning. We find that respondents with low fairness concerns and high altruism are on average willing to sacrifice 11.7 percent of their reservation wage for work meaning, while respondents with high fairness concerns and low altruism exhibit a negative willingness to pay for work meaning (- 7.4 percent).

Importantly, the finding of negative willingness to pay for work meaning is not specific to our elicitation method. Kesternich et al. (2021) already documented in an incentivized experiment that certain groups of the population ask for higher wages when their job becomes more important for others. Our current design allows us to explicitly study the role of fairness preferences for heterogeneity in willingness to pay for work meaning. In a robustness check, we also show that the link between fairness preferences and willingness to pay for work meaning also obtains when we use a hypothetical choice experiment as alternative elicitation method.

The paper contributes to a growing literature that studies workers' willingness to pay for having a job that generates societal contributions, either by directly eliciting preferences (Burbano, 2016, Kesternich et al., 2021, Maestas et al., 2023) or by studying the market prices for work meaning (Leete, 2001, Nyborg and Zhang, 2013, Krueger et al., 2023). Our contribution to this literature is two-fold: First, through the elicitation of reservation wages, we can detect both positive and negative willingness to pay for work meaning in representative samples

of the population. This allows us to establish that only a minority of workers is willing to sacrifice wage for work meaning, and that a significant fraction of workers actually request a higher wage when their job becomes more beneficial for society. As a consequence, the average willingness to pay for work meaning is smaller than the willingness to pay for job amenities like flexibility. Second, we show that fairness concerns and social preferences are important predictors of workers' willingness to pay for work meaning.

Further, the paper also offers a general perspective on labor supply in the context of other-regarding preferences. So far, the literature mostly separated between workers' willingness to pay for work meaning and their reaction to employer behavior, which may be shaped by reciprocity and fairness concerns; see, for example, Fehr et al. (1993), Bewley (1999), Cohn et al. (2015), and Heinz et al. (2020). Notable exceptions are Gerhards (2015), Cassar (2019), Cassar and Meier (2021), and Armouti-Hansen et al. (2024) who experimentally evaluate the workers' reaction to both the mission of a project and the employer's behavior. Our results indicate that these two domains are linked to each other: Fairness concerns are negatively correlated with willingness to sacrifice wage for work meaning. This association is an important determinant of the heterogeneity in workers' reaction to work meaning.

The rest of the paper is organized as follows. In Section 2, we study a simple labor supply model that captures both meaning preferences and fairness concerns. In Section 3, we outline our experimental design and procedures, and we use the theoretical model to derive our empirical hypotheses. In Section 4, we examine our empirical results, in particular, the determinants of the respondents' willingness to pay for work meaning. Section 5 concludes. The online appendix contains further analyses and robustness checks.

## 2 Theoretical Framework

We consider a labor supply model that relates reservation wages to meaning and fairness concerns. The model is based on Kesternich et al. (2021), and captures both the meaning preference framework from Cassar and Meier (2018) and the fairness ideal framework from Cappelen et al. (2007). First, we introduce the basic model and identify the key comparative statics that will guide our empirical analysis. Next, we establish a link between fairness concerns and behavior in ultimatum bargaining, which we exploit in our experimental design.

We examine the labor supply of a worker who is concerned both with the meaning of her job and fairness. Suppose she receives a job offer that specifies a fixed wage $w \geq 0$. If the worker rejects the offer, her payoff equals her reservation value $\bar{U} \geq 0$. If she accepts it, her payoff equals

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

The variable $x$ captures benefits for others that are created through the worker's job. A raise in $x$ increases both the surplus $\pi$ of stakeholders or clients of the organization as well as work meaning $m$. The fair wage $\pi^f$ strictly increases in surplus $\pi$, which we capture by assuming that $\pi^f$ also strictly increases in $x$. In Appendix A.1, we provide a micro-foundation for this assumption and explicitly model the association between surplus $\pi$ and fair wage $\pi^f$ based on the fairness ideals from Cappelen et al. (2007).

Work meaning $m$ is the utility that the worker derives from providing benefits for others or for society. It takes on weakly positive values and strictly increases in the benefit parameter $x$. Both functions, $m$ and $\pi^f$, are continuously differentiable. Any difference between the actual wage $w$ and the fair wage $\pi^f$ reduces the worker's payoff from accepting the job offer. The utility weights $\theta$ and $\alpha$ characterize the worker's preferences: $\theta \geq 0$ captures how much weight the worker places on work meaning and $\alpha \geq 0$ represents her degree of fairness concerns. Finally, parameter $c \geq 0$ represents the costs of doing the job.

The worker accepts the job if $U(w, x) \geq \bar{U}$ and otherwise rejects it. We define by $w^*$ her reservation wage, that is, the smallest wage $w$ that satisfies the equality

$$U(w, x) = \bar{U}. \tag{2}$$

This indifference condition allows us to examine how a variation in the benefits for others $x$ affects the worker's reservation wage. Assuming an interior solution and using implicit differentiation, we get

$$\frac{dw^*}{dx} = -\frac{\theta m_x(x) - 2\alpha(\pi^f(x) - w^*)\pi^f_x(x)}{1 + 2\alpha(\pi^f(x) - w^*)}, \tag{3}$$

where $m_x$ and $\pi^f_x$ are the first derivatives with respect to $x$ of the corresponding function. Whether the variation in the worker's job increases or decreases the reservation wage, depends on the relative strength of meaning and fairness concerns as well as on how the variation impacts work meaning and the fair wage. If there is a wage $w \in [0, \pi^f(x)]$ that satisfies equality (2), we have

$$\pi^f(x) - w^* \geq 0. \tag{4}$$

This is the case when the fair wage is larger than the worker's outside option value plus the costs of doing the job, $\pi^f(x) > \bar{U} + c$, and the weight on work meaning $\theta$ is not too large.[4] Provided inequality (4) is satisfied, the variation in the worker's job reduces the reservation

[4] We need that $\theta$ is small enough so that the worker would not accept the job if the wage $w$ were negative.

wage if

$$\frac{\theta}{\alpha} \times \frac{m_x(x)}{\pi_x^f(x)} > 2(\pi^f(x) - w^*). \tag{5}$$

From this inequality, we can observe two regularities: A marginal increase in the benefit parameter $x$ reduces the reservation wage if, all else equal, fairness concerns are sufficiently small relative to meaning preferences; or if, all else equal, the associated increase in work meaning is sufficiently large relative to the corresponding increase in the fair wage.

Next, we consider a change in the costs of doing the job $c$. Such a change represents anything that makes it easier or harder for the worker to do the job, e.g., a change in job flexibility. We again assume that inequality (4) holds. From equation (2), we then obtain that

$$\frac{dw^*}{dc} = \frac{1}{1 + 2\alpha(\pi^f(x) - w^*)}. \tag{6}$$

Provided that the fair wage is weakly larger than the reservation wage, we get that the reservation wage increases in costs. We summarize our results.

**Proposition 1.** *Suppose the fair wage weakly exceeds the reservation wage, $\pi^f(x) \geq w^*$. The following statements then hold.*

*(i) A variation in the worker's job that raises work meaning can increase or decrease the reservation wage, depending on the relative strength of meaning preferences and fairness concerns. Specifically, there is a threshold value $\xi^*$ so that an increase in the benefit parameter decreases [increases] $w^*$ if all else equal we have $\frac{\theta}{\alpha} > \xi^*$ [$\frac{\theta}{\alpha} < \xi^*$].*

*(ii) A variation in the worker's job that raises work meaning can increase or decrease the reservation wage, depending on how it changes the ratio between work meaning and the fair wage. Specifically, there is a threshold value $\phi^*$ so that an increase in the benefit parameter decreases [increases] $w^*$ if all else equal we have $\frac{m_x(x)}{\pi_x^f(x)} > \phi^*$ [$\frac{m_x(x)}{\pi_x^f(x)} < \phi^*$].*

*(iii) A variation in the worker's job that reduces costs c reduces the reservation wage $w^*$.*

This result highlights that a worker's degree of fairness concerns $\alpha$ shapes her response to a meaning variation. To identify fairness concerns, we will include an ultimatum game (UG) in our survey experiment. We characterize formally how choices in the ultimatum game are related to fairness concerns, using our framework and terminology. In the ultimatum game, a dictator chooses the split of a fixed endowment $\bar{\pi}$ between the worker and himself. Let $w_{UG}$ be the offer to the worker. Upon observing the offer, the worker decides between accepting or rejecting this offer. If she accepts it, she earns $w_{UG}$, while the dictator receives $\bar{\pi} - w_{UG}$. If she rejects it, both earn zero. Let $w_{UG}^*$ be the smallest offer that the worker is willing to accept. In

our framework, this value is defined by equation (2). We normalize work meaning, costs, and reservation utility to zero. Equation (2) then becomes

$$w_{UG} - \alpha(\pi^f - w_{UG})^2 = 0, \tag{7}$$

where $\pi^f$ is the offer that the worker would consider as fair. For example, a common fairness norm for the ultimatum game is the egalitarian fairness principle, which would imply $\pi^f = \frac{\bar{\pi}}{2}$. We obtain the relationship between fairness concerns and the UG-reservation wage through implicit differentiation and get

$$\frac{dw^*_{UG}}{d\alpha} = \frac{(\pi^f - w^*_{UG})^2}{1 + 2\alpha(\pi^f - w^*_{UG})}. \tag{8}$$

We again assume that the fair wage is weakly larger than the UG-reservation wage, $\pi^f \geq w^*_{UG}$. The right-hand side of equation (8) is then strictly positive, that is, the smallest wage offer the worker is willing to accept increases in the degree of fairness concerns.

**Proposition 2.** *Consider the ultimatum game version of our framework and suppose the fair offer is weakly larger than the UG-reservation wage $\pi^f \geq w^*_{UG}$. An increase in the level of fairness concerns $\alpha$ then increases the reservation wage $w^*_{UG}$.*

# 3 Experimental Design, Procedures, and Hypotheses

The main goal of our experiment is to examine the heterogeneity in workers' willingness to pay for work meaning and whether it is related to fairness concerns. We describe the survey experiment in Subsection 3.1 and explain its procedures in Subsection 3.2. Finally, in Subsection 3.3, we derive our research hypotheses using the framework from Section 2.

## 3.1 Experimental Design

In the survey experiment, we elicit reservation wages for jobs of varying characteristics. We implement three types of treatments: meaning, profit, and flexibility treatments. The meaning treatments are our main treatments. The other two types are control treatments that allow us to evaluate the extent to which work meaning is a job amenity or a motivation to increase the reservation wage. In the following, we explain the design of each type of treatment.

*Reservation Wage Elicitation in the Meaning Treatments.* At the beginning of the survey experiment, we offer a list of three job flexibility amenities (shorter commute, more optional home office, more optional unpaid days off). Respondents then choose their preferred option. The question is as follows:

[Item 0 – Preferred Type of Flexibility] *In the following, you see a list of three possible changes to your job. Please, select the one you like best.* [Respondent can choose between "20 minutes less commute daily (round trip)" and "one more optional day where I can work from home per week" and "one more optional unpaid day off per month"]

The survey experiment then continues with the elicitation of a reservation wage. It follows a standard routine and proceeds in two steps.[5] In the first step, respondents are asked to state their expectations about the wage they could get when searching for a new job. The question reads as follows.

[Item 1 – Expected Wage] *We are interested in what you think would be a realistic net monthly salary. Suppose you had to search for a full-time job next month. What do you think would be a realistic net monthly wage for a 38 hour work week, considering your qualifications and your experience?* [Answer is an amount in Euro]

The intention behind this question is to make respondents think about the wage offers they could get if they were searching for a job. It is often easier for them to think about expected wages than about reservation wages. In the next question, we elicit the reservation wage.

[Item 2 – Reservation Wage] *How much would the monthly net wage have to be as a minimum, in order for you to be willing to take the job?* [Answer is amount $w^*$ in Euro]

Next, we alter the job that respondents have in their mind. We highlight additional benefits that the job generates for needy individuals, while emphasizing that the contents of the job remain the same (so it does not require learning new skills). Depending on the treatment, we quantify the size of these additional benefits. We are interested in whether the reservation wage for this new job increases or decreases relative to the reservation wage $w^*$ elicited in Item 2.

[Item 3 – Labor Supply Response to Work Meaning] *You stated that for a 38 hour work week the minimum net monthly salary you would want to earn is $w^*$ Euro. Now imagine that the job you are considering directly or indirectly helps needy (sick or elderly or poor) people,*

[5] A similar routine is applied in the "Panel Study of Labour Market and Social Security" (PASS), which has been used in Kesternich et al. (2021), Kesternich et al. (2022), and in the "IZA Evaluation Dataset" used by Caliendo et al. (2017). The Dutch and German version of the reservation wage elicitation routine can be found in Appendix A.2 and Appendix A.3, respectively.

*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 Euro per month. Can you imagine taking this job even if your salary would be less than $w^*$ Euro?* [Respondent chooses between "Yes" and "No"]

The benefit $X$ varies between treatments (details follow below). To find the new reservation wage, we distinguish between respondents who are willing to sacrifice wage for work meaning and those who are not. If a respondent chooses "Yes" in Item 3, we ask the following question.

[Item 4, if "Yes" in Item 3 – Change in Reservation Wage] *How much less than $w^*$ Euro 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 is $\Delta_l$ Euro]

In contrast, if a respondent chooses "No" in Item 3, we elicit the new reservation wage through the following two questions.

[Item 4, if "No" in Item 3] *Please indicate which of the following applies to you.* [Respondent chooses between "I would take this job at a salary of $w^*$ Euro" and "I would take this job only if the salary was higher than $w^*$ Euro"]

[Item 4a, if "No" in Item 3 and "...higher..." in Item 4 – Change in Reservation Wage] *How much more than $w^*$ Euro 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 is $\Delta_h$ Euro]

Through Item 4 and Item 4a we elicit the reservation wage in an indirect manner. To make sure that respondents concur with our conclusion, we ask them to reaffirm their choice.

[Item 5 – Updated Reservation Wage Control Question] *You indicated that you would require at least a salary of $w^* - \Delta_l$ / $w^*$ / $w^* + \Delta_h$ to accept a job with which you directly or indirectly help needy (sick or elderly or poor) people, children or the environment. Is that correct?* [Respondent chooses between "Yes" and "No, I want to change my reply"]

If a respondent confirms her choice, her updated reservation wage for the job with benefits for needy individuals $w^{**}$ is set to $w^* - \Delta_l$ or $w^*$ or $w^* + \Delta_h$, depending on her choices in Item 3, Item 4, and Item 4a. Otherwise, the elicitation routine starts anew at Item 3. By comparing the reservation wage $w^*$ and the updated reservation wage $w^{**}$, we identify a respondent's willingness to pay for the increase in work meaning.

The order of questions implies that it is slightly easier to indicate a reduction in the reservation wage than an increase in the reservation wage. We deliberately chose this survey design so that we obtain a lower bound on the share of respondents who state a negative willingness to pay for work meaning. The benefit $X$ varies between treatments and takes on the values of 100 Euro, 1,000 Euro, 10,000 Euro, and 100,000 Euro, depending on the subject pool. Additionally, we implement a "neutral" meaning treatment in which we do not mention any monetary amount for the receivers' benefits. The corresponding sentence (*Suppose these additional benefits...*) is then dropped from Item 3. The advantage of mentioning a monetary amount is that it fixes the respondents' belief about how much others benefit from their work. It also allows us to test whether the respondents' reaction to work meaning depends on the magnitude of additional benefits for others. A potential disadvantage is that mentioning a monetary amount makes pecuniary benefits salient and may change the respondents' perception of the job's meaning. In particular, it may reduce their willingness to sacrifice wage for work meaning and lead to bias in our estimates of respondents' WTP. Thus, we implement both treatments in which we quantify the benefits for others and a treatment in which we do not specify them.

*Profit and Flexibility Treatment.* In one subsample, we run two alternative types of treatments. The first alternative treatment is the profit treatment. It proceeds like the meaning treatment, but the job variation is an increase in the employer's profit. Item 3 then reads as follows (the wording of Item 4, Item 4a, and Item 5 is adjusted accordingly).

[Item 3, Profit Treatment] *You stated that for a 38 hour work week the minimum net monthly salary you would want to earn is $w^*$ Euro. Now imagine that the job you are considering directly or indirectly increases your employer's profit. This job is the same as your previous one, but through your work you now create additional profits that go to the owners of the organization or other interested parties (e.g. stakeholders, investors). Suppose these additional profits are equivalent to X Euro per month. Can you imagine taking this job even if your salary would be less than $w^*$ Euro?*

The second control treatment is the flexibility treatment. It proceeds like the meaning treatment, but the job variation is a change in job flexibility according to the respondent's preferences as stated in Item 0. Item 3 now reads as follows (the wording of Item 4, Item 4a, and Item 5 is adjusted accordingly).

[Item 3, Flexibility Treatment] *You stated that for a 38 hour work week the minimum net monthly salary you would want to earn is $w^*$ Euro. 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)]. Can you imagine taking this job even if your salary would be less than $w^*$ Euro?*

In the experiment, we also elicit information on age, gender, marital status, number of children, education, household income, household size, place of residence, current employment status, sector of employment, net monthly wage (in case of employment), and some further job characteristics (occupation, size of employer, contact with clients, job contents). Additionally, we ask respondents about the societal contributions in their current job. The precise question is: *My job allows me to help others or contribute to society on a regular basis.* The answer is provided on a scale between 0 (do not agree at all) to 10 (fully agree). To quantify respondents' degree of fairness concerns, we implement the following hypothetical ultimatum game:

*We would like you to imagine the following hypothetical situation: We give another person 20 Euro to share with you. You can accept or reject the division that the other person proposes. If you reject the division, no one will get the money. For example, the other person proposes to give 4 Euro to you while keeping 16 Euro. If you accept this division, you would earn 4 Euro and the other person 16 Euro. If you reject this division, no one will get any money.*

Respondents choose whether to accept or reject a division if the other person offers 0, 2, 4, 6, 8, or 10 Euro, respectively. In one subsample, we also elicit social preferences – altruism, positive reciprocity, negative reciprocity, and trust – for each respondent by implementing the items from the Global Preference Survey (Falk et al., 2018); see Appendix A.4 for details.

## 3.2 Procedures and Data Cleaning

We conduct the survey experiment with representative samples of workers from the Netherlands and Germany. The sample from the Netherlands originates from the *Longitudinal Internet Studies of the Social Sciences* (LISS) panel. LISS is a longitudinal survey hosted and operated by CentERdata at Tilburg University. Its sample is based upon a true probability sample of households drawn from the Dutch population registry and includes about 5,000 households. Panel members complete questionnaires on a monthly basis and are paid for each completed survey. Our survey experiment was fielded in May 2022. All members of the panel between 18 and 65 years of age were invited to participate. A total of 3,430 individuals completed our survey experiment.

For Germany, we use an online sample of the German population provided by the professional survey company *Bilendi*. This company has a pre-recruited sample of participants. It invites panel members to take part in surveys via email, providing information about compensation and expected completion time, but without disclosing the survey topic. Respondents

receive flat fees as compensation, usually paid in vouchers or award points. The sample is quasi-representative of age, income, and gender. The data collection took place in February 2023, with 5,541 respondents. Before starting the data collection, each sample was registered on aspredicted.org (registry number #93793 for the LISS survey and #119218 for the Bilendi survey) and we obtained IRB approval from the Board for Ethical Questions in Science of the University of Innsbruck.[6]

To check whether participants understand the reservation wage elicitation procedure, we ran a pre-test prior to the actual survey experiment; see Appendix A.5 for details. In this pre-test, we also examine the participants' conception of work meaning. We recognize that open-ended questions, such as those used to elicit reservation wages, are prone to outliers as respondents are not forced to respond in categories. Therefore, we take several measures to ensure the accuracy and reliability of our data. First, we exclude "inattentive" participants. These are participants in the top 5 percent of completion speed for each country and, in the case of Germany, those who fail our attention-check question.[7] Next, we remove outliers in the distribution of reservation wages and the distribution of willingness to pay for the job variation. Specifically, we drop the 5 percent percentile on both ends of the distribution of either variable. This approach allows us to exclude both zero values for reservation wages and very high reservation wages, which may not reflect genuine responses. In total, we keep 84.9 percent of the original sample in the LISS survey and 65.4 percent of the original sample in the Bilendi survey.

Table 1 provides an overview of the treatments that we run in each survey, the number of observations in each treatment (after data cleaning), as well as the main demographic variables and whether there are significant differences in these variables between treatments. In the LISS survey, we only conduct meaning treatments. The parameter $X$ takes on the values 100, 1k, 10k, and 100k. Additionally, we have a "neutral" meaning treatment that does not explicitly mention a monetary value for the additional benefits created through the job. In the Bilendi survey, we conduct all three types of treatments. The additional benefits $X$ in the meaning and profit treatments take on the values 1k and 10k, and there are neutral treatments.

To classify respondents' educational achievements, we apply a sample split in the Dutch and the German sample. Since the educational systems differ between the two countries, the shares of individuals that are classified as highly educated vary between the Netherlands and Germany; see Appendix A.6 for details. There are no significant differences in the demo-

[6] In the pre-registration, we also mention a US sample that we collect through Bilendi. Unfortunately, this dataset is of low quality and not representative of the US population. We therefore decided not to present it in the main text. Nevertheless, our main results also obtain in the US sample; see Appendix B for details.

[7] Overall, 23.99 percent of participants in our survey experiment in Germany fail the attention check, which asked respondents to indicate their preferred color as 'brown'. There was no attention check question in the LISS survey.

graphic variables between the different treatments, so we consider them to be balanced.

Table 1: Overview of Treatments and Main Demographic Variables

| *Country (Survey)* Treatment | *N* | Share Females | Age (sd) | Share High Education | Reservation Wage in *k* Euro (sd) |
|---|---|---|---|---|---|
| *The Netherlands (LISS)* | | | | | |
| Meaning-Neutral | 472 | 0.553 | 46.22 (12.76) | 0.464 | 2.551 (0.624) |
| Meaning-100 | 429 | 0.578 | 45.97 (12.60) | 0.429 | 2.569 (0.603) |
| Meaning-1k | 479 | 0.557 | 46.82 (13.01) | 0.418 | 2.602 (0.625) |
| Meaning-10k | 455 | 0.556 | 47.03 (12.74) | 0.455 | 2.607 (0.583) |
| Meaning-100k | 488 | 0.547 | 46.43 (13.35) | 0.465 | 2.590 (0.590) |
| diff. *p*-value | | 0.911 | 0.729 | 0.468 | 0.580 |
| *Germany (Bilendi)* | | | | | |
| Meaning-Neutral | 448 | 0.518 | 42.17 (13.77) | 0.321 | 2.438 (0.714) |
| Meaning-1k | 413 | 0.530 | 43.35 (13.20) | 0.322 | 2.446 (0.681) |
| Meaning-10k | 438 | 0.537 | 43.02 (13.71) | 0.342 | 2.445 (0.686) |
| Profit-Neutral | 422 | 0.528 | 41.50 (13.60) | 0.341 | 2.465 (0.671) |
| Profit-1k | 425 | 0.553 | 42.37 (12.78) | 0.318 | 2.504 (0.738) |
| Profit-10k | 427 | 0.595 | 42.53 (13.29) | 0.344 | 2.470 (0.690) |
| Flexibility | 443 | 0.549 | 41.53 (13.17) | 0.330 | 2.366 (0.674) |
| diff. *p*-value | | 0.352 | 0.328 | 0.961 | 0.136 |

## 3.3 Research Hypotheses

We derive the research hypotheses for our survey experiment from the theoretical framework in Section 2. In each treatment $t$, we measure for each respondent the reservation wage $w^*$ as well as the updated reservation wage $w_t^{**}$. Our main outcome variable is a respondent's willingness to pay for the job variation in treatment $t$ relative to the reservation wage:

$$\text{WTP}_t = \frac{w^* - w_t^{**}}{w^*}. \tag{9}$$

The $\text{WTP}_t$ indicates which fraction of her reservation wage a respondent is willing to give up in order to obtain the job variation in treatment $t$. Our first research hypothesis is that there is both a share of respondents with a positive and a share of respondents with a negative willingness to pay for work meaning. From previous research we know that there is substantial heterogeneity in fairness concerns (Andreoni and Miller, 2002, Fisman et al., 2007, Schumacher et al., 2017) and heterogeneity in concerns for work meaning (Kesternich et al., 2021). According to Proposition 1(i) and Proposition 1(ii), the reservation wage can increase for some respondents

and decrease for others if the variation in these variables is sufficiently large. The relative size of these two groups is then an empirical question.

[Hypothesis 1] *In each meaning treatment, there is a share of respondents with a positive willingness to pay for work meaning as well as a share of respondents with a negative willingness to pay for work meaning.*

Next, we hypothesize that the effect of the job variation on reservation wages differs between treatments. Each job variation potentially has effects on both work meaning and the fair wage. We expect that increasing the benefits for needy individuals produces more additional work meaning than increasing the benefits for the employer; and that the corresponding raise in the fair wage is muted when the job variation implies benefits for needy individuals instead of benefits for the employer. Proposition 1(ii) then implies that respondents are more willing to pay for the job variation in the meaning-$X$ treatment than in the profit-$X$ treatment. Again, the size of this difference is an empirical question. Further, according to Proposition 1(iii), a reduction in costs (through more flexibility) strictly reduces the reservation wage.

[Hypothesis 2] *For any given value* $X \in \{neutral, 1k, 10k\}$*, the following ordering holds for the willingness to pay for the job variation:* $WTP_{meaning\text{-}X} > WTP_{profit\text{-}X}$ *and* $WTP_{flexibility} > 0$.

The model does not make a prediction about how a respondent's willingness to pay for the job variation varies in the benefit parameter $X$. Her reaction to an increase in $X$ depends on how this change affects the amount of work meaning relative to the fair wage, see equation (5). It is positive if the increase in work meaning is sufficiently large relative to the increase in the fair wage and negative otherwise. Thus, whether the respondents' willingness to pay for work meaning and employer benefits increases or decreases in $X$ is an empirical question.

Finally, we expect that fairness concerns matter for how respondents react to changes in work meaning. Proposition 1(i) and Proposition 2 imply that, all else equal, those respondents who have a relatively high UG-reservation wage are less willing to reduce their reservation wage in response to an increase in work meaning than respondents with a relatively low UG-reservation wage. Our last research hypothesis is therefore as follows:

[Hypothesis 3] *In any given meaning-X treatment, respondents with high fairness concerns (high UG-reservation wage) exhibit on average a lower willingness to pay for work meaning than respondents with low fairness concerns (low UG-reservation wage).*

# 4 Results

We present our results in five steps. In Subsection 4.1, we provide an overview of the respondents' willingness to pay for the job variations. In Subsection 4.2, we examine the association between the respondents' willingness to pay for the job variations and their fairness concerns. In Subsection 4.3, we study which factors explain the heterogeneity in the respondents' reaction to work meaning by comparing the willingness to pay for work meaning between subgroups. In Subsection 4.4, we complement this analysis with a regression framework in which we take all potential explanatory variables into account. In Subsection 4.5, we consider a number of alternative specifications and robustness checks.

## 4.1 Overview of Changes in Reservation Wages

Table 2 summarizes how the job variations in the different treatments affect the respondents' reservation wages. Column (1) shows the average reservation wage and Column (2) the willingness to pay for the job variation in each treatment. In Columns (3), (4), and (5), we report the share of respondents who exhibit a positive, zero, and negative, respectively, willingness to pay for the job variation.

We find that both in the Netherlands and in Germany respondents on average are willing to give up wage for work meaning. In the meaning-neutral treatments – where we do not specify a monetary amount for the benefits – respondents are willing to pay 4.9 percent of their reservation wage in the Netherlands, and 5.1 percent in Germany. Over the whole set of meaning treatments, respondents on average sacrifice 5.4 percent of their reservation wage in the Netherlands, and 3.0 percent in Germany (the difference between countries is due to the differential composition of meaning treatments). These changes in reservation wages are significantly different from zero with a $p$-value of 0.05 or lower.

In both countries and all meaning treatments, we find substantial heterogeneity in respondents' willingness to pay for work meaning, in line with Hypothesis 1. While on average respondents are willing to give up wage for work meaning, less than 50 percent are actually willing to do so. Importantly, a substantial share of respondents – around 22 percent – requests a higher wage if their job generates additional benefits for others or society. A large fraction of respondents do not change their reservation wage in response to the meaning job variation.

Table 2: Willingness to Pay for Job Variations

| *Country (Survey)* Treatment | (1) $w_t^*$ in $k$ Euro | (2) $WTP_t$ | (3) share $WTP_t > 0$ | (4) share $WTP_t = 0$ | (5) share $WTP_t < 0$ |
|---|---|---|---|---|---|
| *The Netherlands (LISS)* | | | | | |
| Meaning-Neutral | 2.551 | 0.049** | 0.428 | 0.339 | 0.223 |
| | (0.029) | (0.019) | | | |
| Meaning-100 | 2.569 | 0.070*** | 0.469 | 0.297 | 0.235 |
| | (0.029) | (0.022) | | | |
| Meaning-1k | 2.602 | 0.025 | 0.355 | 0.428 | 0.217 |
| | (0.029) | (0.017) | | | |
| Meaning-10k | 2.607 | 0.025 | 0.437 | 0.308 | 0.254 |
| | (0.027) | (0.025) | | | |
| Meaning-100k | 2.590 | 0.101*** | 0.467 | 0.352 | 0.180 |
| | (0.027) | (0.019) | | | |
| Meaning (all) | 2.584 | 0.054*** | 0.430 | 0.347 | 0.223 |
| | (0.013) | (0.009) | | | |
| *Germany (Bilendi)* | | | | | |
| Meaning-Neutral | 2.438 | 0.051** | 0.422 | 0.362 | 0.217 |
| | (0.034) | (0.021) | | | |
| Meaning-1k | 2.446 | 0.002 | 0.341 | 0.470 | 0.189 |
| | (0.033) | (0.018) | | | |
| Meaning-10k | 2.445 | 0.035 | 0.406 | 0.356 | 0.237 |
| | (0.033) | (0.022) | | | |
| Meaning (all) | 2.443 | 0.030** | 0.391 | 0.394 | 0.215 |
| | (0.019) | (0.012) | | | |
| Profit-Neutral | 2.465 | -0.067*** | 0.270 | 0.332 | 0.398 |
| | (0.033) | (0.022) | | | |
| Profit-1k | 2.504 | -0.043** | 0.261 | 0.416 | 0.322 |
| | (0.036) | (0.022) | | | |
| Profit-10k | 2.470 | -0.086*** | 0.241 | 0.370 | 0.389 |
| | (0.033) | (0.023) | | | |
| Profit (all) | 2.480 | -0.065*** | 0.257 | 0.373 | 0.370 |
| | (0.020) | (0.013) | | | |
| Flexibility | 2.366 | 0.110*** | 0.437 | 0.353 | 0.210 |
| | (0.032) | (0.020) | | | |

Notes: Standard errors in brackets. Column (1) shows the average reservation wage. Column (2) shows the willingness to pay for the job variation as defined in equation (9); two-sided t-tests of $WTP_t$ being mean zero. Significance at * $p < 0.10$, ** $p < 0.05$, and *** $p < 0.01$. Columns (3), (4), and (5) show the share of respondents who exhibit a positive, zero, and negative, respectively, willingness to pay for the job variation.

Next, in all profit treatments, respondents on average have a negative willingness to pay for the job variation, i.e., they increase their reservation wage if their job generates additional gains for the owners of the organization or other interested parties. In the profit-neutral treatment, the average raise in the reservation wage is 6.7 percent, and over the whole set of profit treatments it is on average 6.5 percent. Both changes in reservation wages are significant at the 1-percent level. Thus, in line with Hypothesis 2, the average willingness to pay for work meaning is larger than the willingness to pay for employer profits (one-sided t-test, $p$-value $< 0.001$).

There is again substantial heterogeneity in the respondents' reaction to the job variation in the profit treatments. Only around 37 percent of respondents actually increase their reservation wage. A quarter of respondents even indicate that they are willing to work for a lower wage if their employer earns a higher profit. Thus, a substantial minority of respondents treat employer profits as a job amenity. A potential explanation for this is that they associate job security or prestige with employer profits.

The respondents' willingness to pay for the job variation is highest in the flexibility treatment, in line with Hypothesis 2. Respondents reduce their reservation wage on average by 11.0 percent to obtain more flexibility[8] and 40.6 percent of respondents actually exhibit a positive willingness to pay for flexibility. This share is larger than in the meaning treatments, but the differences are not significant (t-test, $p$-value = 0.230). We also find that 21.3 percent of respondents exhibit a negative willingness to pay for job flexibility. One explanation for this is that some individuals treat flexibility and monetary compensation as complements. In cross-sectional data, there is usually a positive correlation between job amenities and wages.[9] Therefore, respondents may associate more flexible jobs with higher pay and hence state a higher reservation wage. Alternatively, more flexibility may imply higher costs and commitments at home (need for an additional room to work, heating, coffee, etc.), which could lead to higher reservation wages.

Before we examine different sources of heterogeneity, we briefly compare our results to those obtained in the previous literature. The labor supply reaction to work meaning in our setting is fairly close to what is found in those studies that examine the willingness to pay for job amenities using representative samples of the population. Maestas et al. (2023) estimate for a US sample that having a job that offers "frequent opportunities to impact the community/society" instead of only "occasional opportunities" is worth on average 3.6 percent of the wage. Kesternich et al. (2021) find in an online experiment with a representative sample of

[8]The distribution over the three options is as follows: 27.1 percent choose the option "20 minutes less commute daily (round trip)", 36.1 percent "one more optional day where I can work from home per week", and 36.8 percent "one more optional unpaid day off per month"; the corresponding reductions in the reservation wage are 16.1 percent (se = 0.046), 10.2 percent (se = 0.026), and 7.8 percent (se = 0.036), respectively.

[9]See, for example, the discussion of the literature on compensating wage differentials in Bell (2025).

the employed population in Germany that respondents reduce their reservation wage by 3.0 percent when their job becomes more meaningful (this value is not significantly different from zero though). In our case, the average reduction of the reservation wage in the meaning treatments is 5.4 percent in the Netherlands and 3.0 percent in Germany. Thus, our results confirm that, on average, there is a small, but significant willingness to pay for work meaning.

There is a large literature on workers' willingness to pay for flexibility and work from home. The option to work from home is worth on average 8.0 percent of the wage according to Mas and Pallais (2017) and 4.2 percent according to Maestas et al. (2023). Similarly, Aksoy et al. (2022) find that the option to work two to three days per week from home is worth on average 5.7 percent of the wage in the US and 3.7 percent in Germany. Our flexibility option is valued substantially higher by our respondents – 11.0 percent – arguably because of the respondent-specific adjustment. Among those who choose one more optional day of work from home per week as the preferred option in Item 0, the average willingness to pay for it is 10.2 percent; this number is 16.1 percent for the 20 minutes reduction in commuting time, and 7.8 percent for the additional optional unpaid day off per month. Interestingly, Aksoy et al. (2022) also find that 16 percent of respondents request a higher wage when they obtain the option to work from home. We conclude that the respondents' reactions to the job variations in our experiment are in line with those found in previous studies.

## 4.2 Fairness Concerns and Changes in Reservation Wages

In this subsection, we first provide an overview of the respondents' fairness concerns and then examine the extent to which they are associated with willingness to pay for the job variations. We measure fairness concerns in the hypothetical ultimatum game where respondents indicate for each received amount whether they would accept or reject the offer. Specifically, we define the degree of fairness concerns of a respondent by the number of offers she rejects. This number reflects the UG-reservation wage $w^*_{UG}$ provided that the respondent is consistent (in the sense that if she accepts a certain offer, then she also accepts all offers that are more generous than that; 92.7 percent of our respondents are consistent according to this definition).

Table 3 shows the distribution of the number of rejected offers and the implied UG-reservation wage. We find that our respondents exhibit varying degrees of fairness concerns. On the one hand, a substantial share of respondents apparently does not care about fairness at all and indicates to accept all offers. This share is 30.1 percent in the Netherlands and 18.7 percent in Germany. On the other hand, a large fraction of respondents are very concerned with fairness and would reject almost all offers. These are 30.4 percent in the Netherlands and 34.9 percent in Germany. The behavioral patterns in our hypothetical ultimatum game are roughly consistent with those in experimental studies: The majority of very unfair offers are

rejected, while the majority of almost fair offers are accepted. The 50:50 split is almost always accepted.[10]

Table 3: Distribution of Fairness Concerns

| Ultimatum Game Behavioral Response | implied UG-reservation wage | *The Netherlands (LISS)* | *Germany (Bilendi)* |
|---|---|---|---|
| Accept all offers | 0 Euro | 0.301 | 0.187 |
| Reject one offer | 2 Euro | 0.069 | 0.098 |
| Reject two offers | 4 Euro | 0.038 | 0.063 |
| Reject three offers | 6 Euro | 0.099 | 0.117 |
| Reject four offers | 8 Euro | 0.183 | 0.174 |
| Reject five offers | 10 Euro | 0.304 | 0.349 |
| Reject all offers | > 10 Euro | 0.007 | 0.012 |

Our third hypothesis was that, all else equal, respondents with high fairness concerns are less willing to pay for work meaning than respondents with low fairness concerns. Indeed, we find this effect in both the Dutch and the German sample, see Figure 1 where we compare the willingness to pay for work meaning between respondents with high and low fairness concerns (according to the median split), taking all meaning treatments together.

In the Netherlands, respondents with high fairness concerns are willing to pay 2.0 percent of their reservation wage for more meaning, while respondents with low fairness concerns are willing to sacrifice 8.8 percent of their reservation wage. The difference of 6.8 percentage points is significant at the 1-percent level. Similarly, in Germany, respondents with high fairness concerns are willing to pay -0.4 percent of their reservation wage to obtain more meaning, while respondents with low fairness concerns would sacrifice on average 7.0 percent. Again, the difference of 7.4 percentage points is significant at the 1-percent level. The strength of these effects slightly varies between treatments – see Appendix A.7 – but the sign of the effect is the same in all meaning treatments. We conclude that Hypothesis 3 is confirmed by our data.

We also find differences in the willingness to pay for profits and flexibility between respondents with low and high fairness concerns. However, these are not statistically significant. In particular, respondents with low fairness concerns indicate a somewhat higher willingness to pay for flexibility than respondents with high fairness concerns (13.3 percent and 9.0 percent, respectively; $p$-value = 0.294).

[10] See Cooper and Dutcher (2011) for a meta-study of ultimatum game experiments, in particular, the overview of responder behavior (Chapter 4). Compared to participants in laboratory experiments, the respondents in our survey are slightly less responsive to changes in the offered amount.

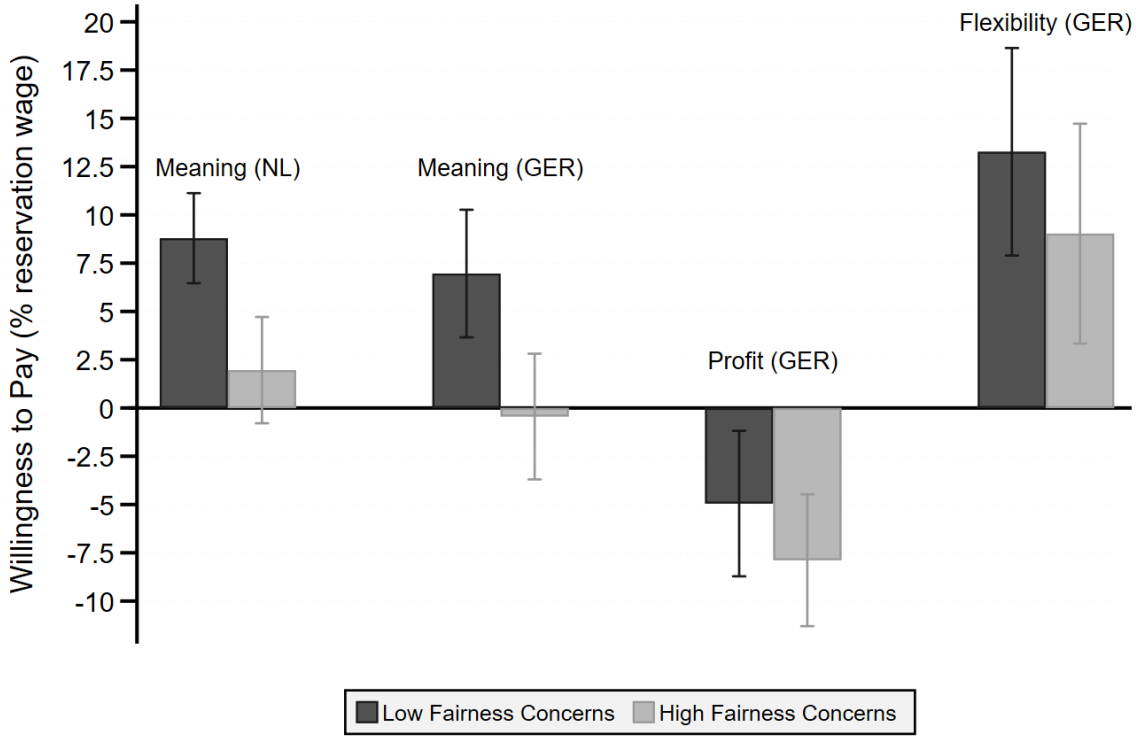


Figure 1: Willingness to Pay for Job Variations, by Fairness Concerns

## 4.3 Preference Heterogeneity

We examine on which dimensions (other than fairness concerns) respondents differ in their willingness to pay for work meaning.[11] To this end, we consider heterogeneity in preferences among two types of variables. First, demographic variables that are the main determinants of wages: gender, age, and education; second, job-related variables that may matter for one's willingness to trade work meaning for wages: a respondent's contributions to society in the current job and the reservation wage. For each characteristic (except gender), we define a binary outcome variable based on the median split. We then compare the willingness to pay for work meaning between subgroups with low and high values of this characteristic, respectively. Figure 2 provides an overview of the results. Each line indicates by how many percentage points the average willingness to pay for work meaning increases if the corresponding characteristic is high rather than low. The detailed results for each treatment are in Appendix A.7. For comparison, the figure also shows the results for fairness concerns.

[11] In this and the next subsection, we focus on work meaning. The corresponding analyses for the profit and flexibility treatments are in Appendix A.9.

*Demographic Variables.* Following Maestas et al. (2023), we first consider the main determinants of wages – gender, age, and education – as determinants of preference heterogeneity. With respect to gender, we find that women have a slightly higher willingness to pay for work meaning than men. The effect is 2.7 percentage points and 3.7 percentage points in the Netherlands and Germany, respectively. It is not statistically significant and also not consistent among all meaning treatments. However, as we show below, it is statistically significant in some regression specifications. In the previous literature, Maestas et al. (2023) do not find gender differences with respect to workers' willingness to pay for work meaning, while Burbano et al. (2024) and De Schouwer and Kesternich (2024) find gender differences in the same direction as we do.

Next, we find a positive effect of education on the respondents' willingness to pay for work meaning in the Netherlands. This effect is on average 3.3 percentage points, significant at the 10-percent level, and fairly consistent across the meaning treatments. We do not find the same effect in Germany though. With respect to age, we find mostly no statistically significant differences between young and old respondents. Thus, according to our data, it is not the case that work meaning is more important for young than for old individuals.

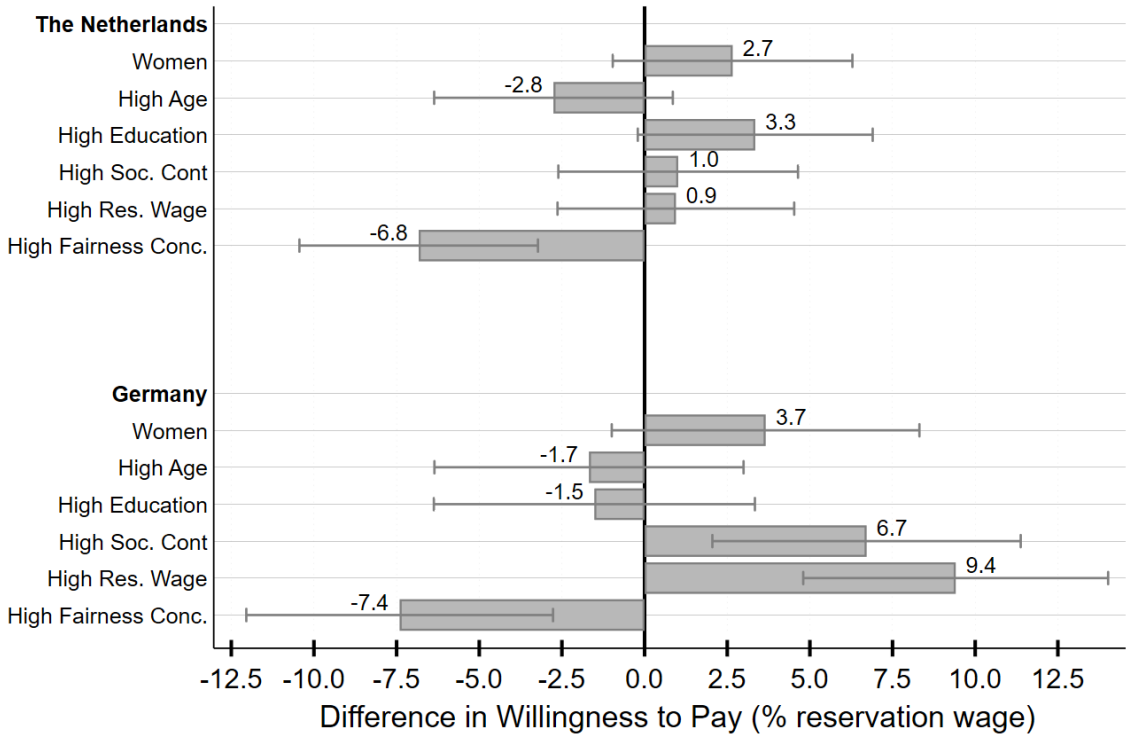


Figure 2: Heterogeneity in Willingness to Pay for Work Meaning

*Job Variables.* We consider two job variables that are potentially associated with the respondents' willingness to pay for work meaning: societal contributions in the current job and the reservation wage.[12] Regarding societal contributions, it could be the case that respondents who already contribute a lot may be less willing to pay for additional meaning than respondents who contribute only a little.[13] Alternatively, respondents who already contribute a lot may in general have a higher willingness to pay for additional work meaning than respondents who contribute only a little. Regarding reservation wages, one may expect that respondents who are going to earn more are willing to sacrifice a higher fraction of their reservation wage for work meaning than respondents who are going to earn less.

Overall, we find that respondents in jobs with (self-stated) high societal contributions are on average more willing to sacrifice wage for work meaning. In Germany, this effect is on average 6.7 percentage points; it is statistically significant and fairly consistent across all meaning treatments. In the Netherlands, this effect is on average only 1.0 percentage points, not statistically significant, and also not consistent across the meaning treatments. For reservation wages, we find that those with higher reservation wages are also more willing to pay for work meaning. Again, this effect is strong and significant in Germany (9.4 percentage points), but small and insignificant in the Netherlands (0.9 percentage points).

## 4.4 Regression Results

We study which characteristics predict the respondents' willingness to pay for work meaning in a linear regression framework. Table 4 shows the results for the Netherlands and Table 5 for Germany. In Column (1) of each table, we regress willingness to pay for work meaning on the demographic variables gender, age, and education. In Column (2), our main specification, we add fairness concerns. In Column (3), we add the job variables, contributions to society in the current job and reservation wage. All specifications also contain treatment dummies. To compare effect sizes, we include all independent variables (except gender) as dummy variables based on the median split; they are equal to one if the value is above the median, and zero otherwise.

[12] Recall that, in order to elicit societal contributions in current job, we ask in the survey about the extent to which a respondent's job allows her to help others or to contribute to society on a regular basis (on a scale between 0 and 10).

[13] A similar argument is made in Dur and van Lent (2018).

Table 4: Willingness to Pay for Work Meaning (The Netherlands)

| | (1) | (2) | (3) |
|---|---|---|---|
| *Demographic Variables* | | | |
| Gender | 0.025 | 0.023 | 0.024 |
| | (0.018) | (0.018) | (0.019) |
| High Age | -0.021 | -0.015 | -0.015 |
| | (0.019) | (0.019) | (0.019) |
| High Education | 0.028 | 0.021 | 0.019 |
| | (0.018) | (0.018) | (0.020) |
| *Job Variables* | | | |
| High Societal Contributions | | | 0.002 |
| | | | (0.019) |
| High Reservation Wage | | | 0.005 |
| | | | (0.020) |
| *Fairness Concerns* | | | |
| High Fairness Concerns | | -0.065*** | -0.064*** |
| | | (0.019) | (0.019) |
| *Treatments* | | | |
| Meaning-100 | 0.021 | 0.021 | 0.020 |
| | (0.030) | (0.030) | (0.030) |
| Meaning-1k | -0.023 | -0.023 | -0.023 |
| | (0.026) | (0.026) | (0.026) |
| Meaning-10k | -0.024 | -0.023 | -0.023 |
| | (0.031) | (0.031) | (0.031) |
| Meaning-100k | 0.052* | 0.055** | 0.055** |
| | (0.027) | (0.027) | (0.027) |
| Constant | 0.033 | 0.065** | 0.063** |
| | (0.026) | (0.027) | (0.029) |
| Observations | 2323 | 2323 | 2323 |
| $R^2$ | 0.007 | 0.012 | 0.012 |

Notes: Results from OLS regressions. The dependent variable in all specifications is the willingness to pay for a job variation $WTP_t$ in a meaning treatment. The gender dummy equals one if the respondent is a women and zero otherwise. All independent variables "High [...]" are dummy variables that equal one if the respondent's value in the corresponding category is above the median and zero otherwise. The Meaning-Neutral treatment is the reference category. Standard errors are in parentheses. Significance at * $p < 0.10$, ** $p < 0.05$, and *** $p < 0.01$.

Table 5: Willingness to Pay for Work Meaning (Germany)

| | (1) | (2) | (3) |
|---|---|---|---|
| *Demographic Variables* | | | |
| Gender | 0.035 | 0.033 | 0.045* |
| | (0.024) | (0.023) | (0.023) |
| High Age | -0.018 | -0.008 | -0.016 |
| | (0.025) | (0.026) | (0.025) |
| High Education | -0.020 | -0.024 | -0.050* |
| | (0.026) | (0.026) | (0.026) |
| *Job Variables* | | | |
| High Societal Contributions | | | 0.058** |
| | | | (0.024) |
| High Reservation Wage | | | 0.109*** |
| | | | (0.024) |
| *Fairness Concerns* | | | |
| High Fairness Concerns | | -0.076*** | -0.074*** |
| | | (0.024) | (0.024) |
| *Treatments* | | | |
| Meaning-1k | -0.049* | -0.053** | -0.056** |
| | (0.028) | (0.028) | (0.028) |
| Meaning-10k | -0.016 | -0.018 | -0.018 |
| | (0.030) | (0.030) | (0.030) |
| Constant | 0.049 | 0.088*** | 0.020 |
| | (0.030) | (0.032) | (0.034) |
| Observations | 1299 | 1299 | 1299 |
| $R^2$ | 0.005 | 0.012 | 0.033 |

Notes: Results from OLS regressions. The dependent variable in all specifications is the willingness to pay for a job variation $WTP_t$ in a meaning treatment. The gender dummy equals one if the respondent is a women and zero otherwise. All independent variables "High [...]" are dummy variables that equal one if the respondent's value in the corresponding category is above the median and zero otherwise. The Meaning-Neutral treatment is the reference category. Standard errors are in parentheses. Significance at * $p < 0.10$, ** $p < 0.05$, and *** $p < 0.01$.

*Results for the Netherlands.* The regression results for the Netherlands largely confirm our findings from the previous subsection. Gender still has no significant effect on the respondents' willingness to pay for work meaning. The point estimate in the second specification indicates that women are willing to sacrifice 2.3 percentage points more than men for work meaning. However, the coefficient is not significantly different from zero at the 10-percent level. The age effect is small and insignificant. High education has a positive effect on the respondents' willingness to pay for work meaning. In the second specification, the effect is 2.1 percentage points, albeit again not significant at the 10 percent level. Neither the level of societal contributions in the current job nor the reservation wage have a significant effect on the willingness to pay for work meaning.

Fairness concerns predict the willingness to pay for work meaning fairly well. Respondents with high fairness concerns have on average a 6.5 percentage points lower willingness to pay for work meaning than respondents with low fairness concerns. Thus, Hypothesis 3 is confirmed for the Netherlands in a regression framework.

The treatment dummies are not significantly different from each other, with the exception of the dummy for the meaning-100k treatment in the last specification. The difference between the meaning-100k and the meaning-neutral treatment is statistically significant at the 5-percent level. The meaning-100k treatment dummy is also significantly different from the meaning-1k treatment dummy. Thus, our respondents in the Netherlands are significantly more willing to give up wage for work meaning when the associated contribution to society is large and communicated to respondents.

*Results for Germany.* Next, we consider the results from the German sample in Table 5. The gender coefficient in Column (2) indicates that women's willingness to pay for work meaning is 3.3 percentage points higher than that of men. High education is associated with higher requested wages in response to an increase in work meaning. However, in specification (2) none of these demographic effects are different from zero at the 10-percent level. High reservation wages are associated with high willingness to pay for work meaning. Respondents in jobs with high societal contributions indicate a higher willingness to pay for work meaning than those in jobs with low social contributions.

Fairness concerns again predict the respondents' willingness to sacrifice wage for work meaning fairly well. For respondents with low fairness concerns the willingness to pay for work meaning is on average 7.6 percentage points larger than for respondents with high fairness concerns. This effect is significant at the 1-percent level. Thus, Hypothesis 3 is also confirmed for Germany in a regression framework.

Regarding our meaning treatments, we find that respondents are less willing to sacrifice wage for work meaning in the meaning-1k treatment. The effect is 5.3 percentage points and

fairly consistent across the different specifications. When the amount of benefits is large, the reaction to work meaning is not significantly different from when no amount is mentioned.

## 4.5 Robustness and Limitations

*Social Preferences.* For the German sample, we also obtained measures of social preferences – altruism, positive and negative reciprocity, trust – by implementing items from the Global Preference Survey (Falk et al., 2018). Appendix A.4 shows the distribution of social preferences in our sample. It also compares this distribution to the original one for Germany used in Falk et al. (2018). For each social preference, the two distributions are fairly similar to each other.

We include these measures in our linear regression framework, see Appendix A.8. We find that social preferences are strongly associated with the respondents' willingness to pay for work meaning. The effect is especially large for altruism. Respondents with high altruism exhibit a 10.5 percentage points higher willingness to pay for work meaning than respondents with low altruism; respondents with high trust have a 8.2 percentage points higher willingness to pay for work meaning than respondents with low trust. Importantly, both fairness concerns and social preferences have significant effects on the respondents' reaction to work meaning when both of them are taken into account. This implies that fairness concerns and social preferences have countervailing effects: fairness concerns reduce the respondents' willingness to pay for work meaning while social preferences (like altruism) have a positive effect.

To further illustrate the interaction between fairness concerns and social preferences, we consider the willingness to pay for work meaning of subgroups of subjects with varying degrees of fairness concerns and altruism. For both personal characteristics, we find the subgroups of subjects with low and high, respectively, values of this characteristic according to the median split. Then we identify the respondents with low fairness concerns and high altruism (25.4 percent), respondents with high fairness concerns and high altruism (23.3 percent), respondents with low fairness concerns and low altruism (21.7 percent), and respondents with high fairness concerns and low altruism (29.6 percent of subjects). Figure 3 shows the willingness to pay for work meaning for each of these subgroups. As expected, it is largest for respondents with low fairness concerns and high altruism (11.7 percent of the reservation wage) and smallest for for respondents with high fairness concerns and low altruism (- 7.4 percent). The difference is significant at the 1-percent level.

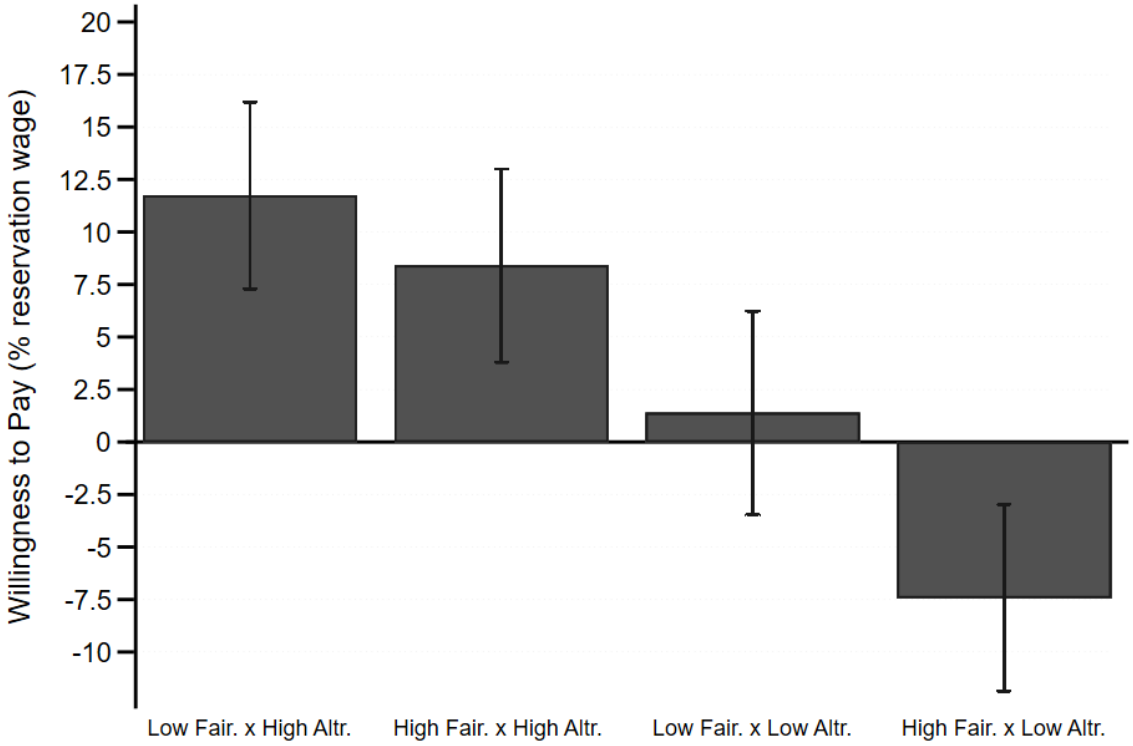


Figure 3: Willingness to Pay for Job Variations, by Fairness Concerns and Altruism

*Alternative Specifications.* We consider a number of alternative specifications for the regressions in Table 4 and Table 5; the detailed results can be found in Appendix A.8. First, we use for all variables (except education) the original measure instead of the dummy created by the sample split. The regressions indicate that for each additional offer rejected in the ultimatum game (our measure for fairness concerns), the respondents' willingness to pay for work meaning decreases by 1.7 percentage points in the Netherlands and by 1.9 percentage points in Germany.

Next, we examine which variables predict whether a respondent has a positive willingness to pay for work meaning. For this, we consider as dependent variable a dummy that equals one if a respondent reduces her reservation wage when her job offers more work meaning, and zero otherwise. Qualitatively, the results are similar to those obtained when we have binary variables. However, we now obtain a significant gender effect in the Netherlands. Women are around 5 percentage points more likely than men to indicate a positive willingness to pay for work meaning. This effect is significant in all specifications on the 5-percent level.

*Data Cleaning.* For our main analysis, we clean the data by dropping inattentive respondents (those who speed through the survey and, in the case of the German sample, those who fail the attention check) as well as outliers in the distributions of reservation wages and willingness to pay for the job variations. We examine to what extent our findings obtain without

this data cleaning procedure. Specifically, we consider our baseline regression if we do not remove any observations. Moreover, we rerun our baseline regression if we only remove inattentive respondents. We find that our main results hold up well and that the fairness effect remains statistically significant in most cases despite the noise that comes from the additional observations.

*WTP Elicitation through Discrete Choice Experiments.* The most commonly used method to elicit willingness to pay for job amenities is through hypothetical choice experiments. In Appendix A.10 we validate our elicitation method by comparing the willingness to pay estimates from the reservation wage questions to those obtained through discrete choice experiments. The LISS data contain a module with discrete choice experiments for work meaning, schedule adaptability, and telecommuting[14], which we link to our dataset. The discrete choice experiments do not allow for negative valuations of amenities. Nevertheless, we can check whether the estimates are comparable, and whether the willingness to pay for meaning differs by fairness concerns. The results confirm that the estimated willingness to pay is similar whether estimated with a discrete choice experiment or through the reservation wage questions. Importantly, respondents with high fairness concerns have a significantly lower willingness to pay for work meaning than respondents with low fairness concerns. This is not the case for workplace flexibility.

*Limitations.* We briefly discuss three limitations of our experimental design that could be addressed in future research. The first limitation is that we do not have full control over respondents' beliefs about the updated job if it generates additional benefits for others. In the instructions, we explicitly state that the updated job is the same as the previously imagined one. Nevertheless, some respondents may think that the contents and requirements of the job change if it generates additional benefits. This in turn may lead to biased estimates of the respondents' reservation wage adjustments. One may be able to tackle this problem through the instructions or through control questions. However, we think that this problem cannot be avoided completely as long as the respondents' choices are hypothetical.

The second limitation of our study comes from the fact that, in order to obtain a measure for fairness concerns, we use a hypothetical ultimatum game with strategy method. We classify respondents as having high fairness concerns if they indicate to reject relatively many unfair offers. However, there exist different behavioral motivations other than fairness concerns for the rejection of unfair offers in the ultimatum game, e.g., behindness aversion or spitefulness. For convenience, we subsumed these motivations in the term "fairness concerns." An alternative to the ultimatum game would be to elicit choices in dictator games with production and

[14] See De Schouwer and Kesternich (2024) for more information.

distribution phase as in Cappelen et al. (2007). Such games allow for a more precise elicitation of fairness ideals. This would help researchers to establish a more informed link between fairness concerns and willingness to pay for work meaning. However, dictator games with production and distribution phase are also more complex than the ultimatum game and potentially more difficult to administer in the context of an online survey experiment.

Finally, the third limitation of our study is that we have no explanation for the finding that there is a negative relationship between fairness concerns and willingness to pay for work meaning, but no (or only a very weak and statistically insignificant link) between fairness concerns and employer profits. From a theoretical perspective one would have expected that individuals with high fairness concerns are less willing to pay for employer profits than individuals with low fairness concerns. Again, eliciting different fairness ideals through dictator games with production and distribution phase may help to provide an explanation.

# 5 Conclusion

We examined survey experiments with representative samples of the working-age population from the Netherlands and Germany to study the extent to which workers are willing to pay for work meaning, that is, whether they increase or reduce their reservation wage for a job if this job "directly or indirectly helps needy (sick or elderly or poor) people, children or the environment" (formulation from our experiment). Workers may have preferences for having a job that creates societal benefits. Due to fairness concerns, they may also demand a wage raise if they create additional benefits for others. Therefore, the elicitation method in our experiment explicitly allowed respondents to indicate a higher or a lower reservation wage when their job becomes more beneficial for others or for society.

We find that respondents are on average willing to pay for work meaning, confirming previous results such as those in Maestas et al. (2023). However, only a minority of respondents are in fact willing to sacrifice for work meaning, and around 22 percent of them actually increase their reservation wage when their job generates additional societal benefits. The average willingness to pay for work meaning is less than half of the willingness to pay for job flexibility. It is important to note that the negative willingness to pay is not an artifact of the design of our study. Kesternich et al. (2021) obtain a similar same result based on an incentivized experiment with a random draw of the German population.

Importantly, we find that fairness concerns have a substantial impact on the respondents' willingness to pay for work meaning. As predicted, fairness concerns are negatively correlated with the respondents' willingness to sacrifice wage for work meaning. Respondents with relatively low fairness concerns (according to the median split) have on average a willingness to

pay at the order of two-thirds of the willingness to pay for job flexibility. In contrast, respondents with relatively low fairness concerns have on average no significant willingness to pay for work meaning. Therefore, employees are less willing to give up pay for meaningful work if they prioritize fairness.

What do these results imply for labor market policy? One implication is that increasing work meaning does not automatically generate more labor supply from all workers. While work meaning is an important job amenity (or a motivation to pick up a job) for a minority of employees, it is also a reason to request higher wages for a substantial fraction of workers. The proponents of a universal basic income often suggest that workers would provide labor for societal causes for free (or for a low wage) as long as a certain income was guaranteed. Our results show that this is true only for a selected sample of individuals. A further implication is that satisfying demand in growing industries with high levels of work meaning – such as education and healthcare – will require higher wages. According to our data, workers in these sectors indeed indicate that their job generates relatively high societal contributions. However, given the small average willingness to pay for work meaning, it is most likely necessary to pay higher – and fairer – wages in order to enlarge the pool of workers in these industries.

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