The Gender Gap in Meaningful Work: Explanations and Implications*

Vanessa Burbano
Olle Folke
Stephan Meier
Johanna Rickne

June 13, 2022

Abstract

An understanding of (gender) differences in non-monetary work conditions is fundamental for a complete characterization of individuals' well-being at work, that is, to fully characterize gender inequalities in the labor market. We examine one such condition—meaningful work—using nationally representative survey data linked with worker and employer administrative data. We document a large and expanding gender gap in meaningful work, wherein women experience their jobs as more meaningful than men do. We find little support for explanations based in labor market decisions related to first parenthood or to women's under-representation in leadership jobs. Instead, the gap appears to be largely driven by sorting of more women into jobs with a high level of beneficence—the sense of having a prosocial impact. While both women and men experience such jobs as more meaningful, women do so by a larger margin, that may result from an alignment between beneficence and the stereotypical female role. Turning to implications, we explore how much a female advantage in meaningful work compensates for the female wage disadvantage. While the gender gap in meaningful work compensates for about one-third of the gender wage gap in the lower half of the wage distribution, it is insignificant in the upper half, where the gender wage gap is most pronounced. We also uncover suggestive evidence linking men's lower experience of meaning at work to the political trend of grievance-based mobilization for the populist radical right, pointing to political implications of gender differences in meaningful work.

Keywords: Gender inequality, meaningful work, occupational segregation, work conditions

JEL codes: J16, J31, J32, J24.

* We thank participants at multiple seminars and especially Mabel Abraham, Maria Cotofan, Robert Dur, and Anya Samek for very helpful comments.

1. Introduction

The labor market is a site of many gender differences. Most research examining gender differences in the labor market has focused on differences in monetary compensation, though more recent studies have pivoted to recognize that non-monetary work conditions such as flexibility, autonomy, and incidence of sexual harassment are crucial for shaping people's total well-being from work (Eriksson and Kristensen 2014, Mas and Pallais 2017, Wiswall and Zafar 2017, Cassar et al. 2016, Samek 2019, Maestas et al. 2018, Folke and Rickne 2020). Thus, understanding gender differences in non-monetary work conditions is imperative for a comprehensive understanding of gender differences in well-being in the labor market more broadly.

We analyze the gender gap in one non-monetary work characteristic whose relevance to individual well-being has received increasing attention in recent years: meaningful work. Meaningful work refers to the sense of impact or purpose derived from, and what is believed to be achieved as a result of, a person's work (Cassar and Meier 2018, Wrzesniewski and Dutton 2001, Brief and Nord 1990, Rosso et al. 2010, Ariely et al. 2008). On an individual level, meaning at work is crucial to people's identity and psychological well-being (e.g., Wrzesniewski 2003; see Karlsson et al. 2004, Cassar and Meier 2018, and Nikolova and Cnossen 2020 for a discussion of the literature from an economics perspective). Meaning at work contributes to individuals' positive affective well-being (Arnold et al. 2007), experience of life as meaningful (Steger and Dik 2009), and satisfaction with life (Steger et al. 2012, Duffy et al. 2013).[1] Karlsson et al. (2004) summarize Victor Frankl's (1962) insight popularized in his book *Man's Search for Meaning* thus: "it is people's innate will to find meaning, and not their striving for pleasure, power, or wealth, that is the strongest motivation of living" (p. 62). Thus, while several work conditions undoubtedly influence individuals' overall utility at work, the experience of meaning at work is one that is particularly important.[2]

[1] There is a substantial literature in organizational psychology and sociology on the meaning of work and its importance to individual well-being (Caza and Wrzesniewski 2013, Wrzesniewski and Dutton 2001, Brief and Nord 1990, Rosso et al. 2010).

[2] Employees' sense of meaning at work has also been linked to organizational outcomes that benefit firms, including increased employee motivation (Gartenberg, Prat and Serafeim 2019, Rosso et al. 2010), less absenteeism (Steger et al. 2012), and reduced turnover intentions (Scroggins 2008, Arnoux-Nicolas et al. 2016).

Our analysis begins by characterizing the gender gap in meaningful work using nationally representative Swedish survey data. We document a large and growing gap to women's advantage, thus replicating recent findings in the context of the U.S. labor market (Maestas et al. 2018, Kaplan and Schulhofer-Wohl 2018). We further establish the practical importance of the concept of meaning at work by illustrating that the experience of meaning at work is highly correlated with greater job satisfaction and lower levels of self-reported intentions toward, and actual, job departures. Interestingly, these correlations suggest that men and women appear to value meaning at work similarly. We then proceed to study two questions: What helps explain the gender gap in meaningful work? And what are its consequences?

We reject two potential explanations for the gender gap in meaningful work and find support for a third. First, given the relevance of life events such as first parenthood in explaining numerous gender differences in the labor market (Waldfogel 1997, Budig and England 2001, Angelov et al. 2016), we explore whether first parenthood helps explain the gender gap in meaningful work. Interestingly, we find no evidence that the life event of first parenthood triggers sorting of women into more meaningful jobs, or men into less meaningful ones. Second, we explore the potential role of sorting into different hierarchical positions in explaining gender difference in meaning at work, finding little evidence that this explains the gap. Our data is consistent with the argument that people who occupy higher positions in organizational hierarchies generally find their work to be more meaningful (Bowie 1998, Martela and Riekki 2018). Given that men, instead of women, tend to occupy higher positions at work, we thus find evidence that the gender gap in meaningful work exists despite, not because of, vertical gender segregation.

We find that a key explanation for the gender gap in meaningful work is gender-based sorting into occupations with different traits. We analyze this pattern by categorizing occupations based on a four-factor model of psychological pathways to work meaningfulness: autonomy, competence, relatedness, and beneficence (Martela and Riekki 2018). We find that women are more likely than men to work in occupations with high beneficence, defined as a high level of prosociality (and measured in our data by expert ratings from the O*NET database). Both women and men experience these jobs as more meaningful, which creates a mechanical relationship between women's over-

representation in occupations with high beneficence and their aggregate advantage in meaningful work. In addition, women derive more meaning than men as the level of beneficence at work increases. We discuss several factors that could give rise to these patterns, focusing on gender norms and stereotypes, preferences, and skills.

After examining explanations for the gender gap in meaningful work, we examine two potentially important implications of the gap. First, we assess how incorporating the gender gap in meaningfulness into the wage gap affects a broader interpretation of gender well-being in the labor market. To do this, we quantify the monetary valuation of meaningful work with the method proposed by Bell (2020) and add this valuation to estimates of the gender wage gap. Notably, the gender gap in meaningful work exists mainly in the lower half of the wage distribution, which is where the gender wage gap is relatively small. We find that in this part of the wage distribution, meaningfulness compensates women for about one-third of the wage gap. At higher wage levels, the wage gap is substantially larger, whereas the gender gap in meaningful work is small. Thus, while the gender gap in meaningful work closes a substantial part of the work remuneration gap in lower-paid jobs, it does little to close the remuneration gap in higher-paid jobs where the gender wage gap is largest (e.g., Blau and Kahn 2017).

Second, we consider the potential role of the gender gap in meaningful work in helping to explain a practically important political phenomenon that has received recent interest in the economics literature: the increased prevalence and political mobilization of (mainly men in) the populist radical right (e.g., Rydgren 2018, Margalit 2019, Guriev and Papaioannou 2020). We observe that the socio-demographic traits of men with particularly low levels of meaningful work coincide with the traits that typically characterize members of radical-right movements across the world (namely, lower education levels and working-class jobs) (e.g., Rydgren 2012, 2018). To explore this relationship further, we match individual-level data on politicians to our data. We find that politicians from Sweden's radical-right party, the Sweden Democrats, are both over-represented among individuals with jobs having low levels of meaningfulness and are under-represented in the most meaningful jobs. This correlation suggests that grievances based on a lack of meaningful work might be an important, yet previously underexplored, component of this political development.

Our paper makes several contributions. First, we contribute to an understanding of the importance and implications of non-monetary attributes of work. Economists are increasingly recognizing the role of work conditions in characterizing gender differences in the labor market. This strand of research has focused on time-space flexibility (e.g., Mas and Pallais 2017, Wiswall and Zafar 2017, Adams-Prassl 2020), commuting distance (Petrongolo and Ronchi 2020, Le Barbanchon et al. 2021), competitiveness (Niederle and Vesterlund 2007, Buser et al. 2014, Reuben et al. 2019, Flory et al. 2015, Samek 2019), sexual harassment (Folke and Rickne 2020), and workplace safety (Lavetti and Schmutte 2021, Morchio and Moser 2021). We focus on a work attribute that has been relatively underexamined despite its importance to individuals' overall well-being (Karlsson et al. 2004, Cassar and Meier 2018, Nikolova and Cnossen 2020) and its implications for organizational productivity (Gartenberg et al. 2019). While extant research shows that gender differences in preferences for this work attribute differ (Burbano et al. 2020), we consider how men and women differ in their actual experience of meaning at work. We document a sizable and growing advantage of women's experience of this job trait, consider explanations for this gap, and discuss its potential implications.

We broaden the characterization of gender differences in the workplace, emphasizing that for a comprehensive understanding of gender differences in well-being or utility in the workplace, it is important to consider the interaction between gender differences in non-monetary and monetary work characteristics. This is particularly relevant against the backdrop of recent research ascribing parts of the gender wage gap to differences in working conditions (e.g., Bertrand et al. 2010, Goldin 2014, Reuben et al. 2019, Le Barbanchon et al. 2021). Our findings suggest that the gender difference in an aggregate conceptualization of work utility that includes remuneration of both wages and experience of meaning is less unequal than what the wage gap alone would indicate at lower ends of the wage distribution, though it does not affect inequality at the upper end of the distribution, where the gender wage gap is most pronounced.

Our paper also contributes to an understanding of the role of gender stereotypes in helping explain occupational sorting by gender. It has been established that women are less likely to pursue jobs in stereotypically male fields (Fernandez and Sosa 2005, Fernandez and Friedrich 2011) because

they anticipate discrimination, question their ability to succeed, and identify less strongly with those jobs (Correll 2001, Correll and Benard 2006, Cech et al. 2011, Barbulescu and Bidwell 2013, Delfino 2021). Our results suggest another explanation potentially based in gender differences in experiences of meaning at work. We find that women are more likely to sort into jobs with high beneficence, from which they derive more meaning than men. Our data are consistent with an argument that the female stereotype associated with high-beneficence jobs may reduce men's experience of meaning in these jobs, in turn reducing the likelihood that men sort into these occupations. Our findings thus provide further support of the notion that congruence between prosocial job characteristics (in our context, beneficence at work) and the female stereotype (Lee and Huang 2018) affect the sorting of men and women into different occupations (Abraham and Burbano 2021).

Last, we make a small contribution to nascent work in political economics that has begun to examine the drivers of radical-right populism. Explanations for this phenomenon have centered on cultural grievances related to immigration and on economic grievances in the labor market (e.g., Rydgren 2018, Margalit 2019, Guriev and Papaioannou 2020). We identify men's experience of work as lacking in meaning as a potentially important, yet previously unexplored, contributor to grievances in the labor market that may in turn help to explain this phenomenon.

In what follows, we (1) describe our data and measurements, including a validation of our measurement of meaningful work; (2) document and characterize gender differences in meaningful work; (3) examine potential explanations for the gender gap in meaningful work, and (4) consider implications of this gap.

2. Data, Measurements, and Summary Statistics

We link detailed employer and employee administrative data with survey-based self-reports of individuals' experience with work as meaningful.

Our main data source is the Swedish Work Environment Survey, the Swedish government's biannual survey that maps the development of work conditions in the labor market, conducted by Statistics Sweden. The survey asks about 100+ work environment traits; and its stratification by age, sex at birth, occupation, industry, and social class ensures representativeness for the full employed

population. The survey is thus nationally representative and gives a highly accurate picture of the labor market. It is entirely anonymous, and Statistics Sweden does not inform employers that their workers have been sampled. This makes it unlikely that workers feel pressure to self-report a certain way, reducing the likelihood of social desirability bias in responses. We pool 12 biannual surveys between 1991 and 2015 for a total of 112,636 observations, of which 52% of respondents are women.

We match each respondent to an annual population-wide panel of administrative records via a (mandatory) personal ID code. This panel includes every permanent citizen of the country (1979–2015). Variables come from government agencies and provide measurements that are not self-reported and have very few missing observations. Data from the tax agency include labor income and sector of employment (public or private) for the largest source of labor income in each year. Information on the ages of all children from birth records enables a comparison of work conditions in periods surrounding first parenthood. Data from the Swedish electoral agency give a complete list of all elected local politicians.

Data on gender, occupations, and monthly wages come from a mandatory employer survey, the Swedish Salary Statistics Survey, conducted annually by Statistics Sweden. It covers all public organizations, all large private employers, and a stratified random sample of about 50% of medium and small firms in the private sector. Organizations must report the wage and occupation for each employee who worked at least one hour during the sampling week. These data become available in 1995, and the coverage expands gradually over time. For the occupation code, the 3-digit level becomes available in 1995, and the 4-digit level reaches full coverage in 2003. Note that whenever we analyze wages or occupations, our sample size drops somewhat because of these data restrictions.

2.1. Representativeness of the Survey Data

Table 1 compares socio-demographic and labor market traits in the survey sample (Column 1) with those of the employed Swedish population (Column 2), using the same age interval of 19–64 years. The proportion of individuals by gender, age category, education level, and birth region, as well as the

proportion of public-sector workers, average annual labor earnings, average monthly wage,[3] and the distribution of people across 1-digit occupation codes, are highly similar.

Table 1. Summary Statistics for the Survey Sample and the Employed Population

	Survey Sample (1)	Population (2)
Female	0.52	0.48
Age		
19–35	0.29	0.34
36–50	0.40	0.38
51+	0.31	0.27
Education Level		
Below High School	0.16	0.15
High School	0.49	0.50
Tertiary Education or Ph.D.	0.35	0.34
Birth Region		
Born in Sweden = 1	0.92	0.89
Born in Europe, excluding Sweden = 1	0.06	0.07
Born outside of Europe = 1	0.02	0.04
Public Sector = 1	0.43	0. 43
Log Labor Earnings	7.57	7.99
Log Wage	9.97	10.21
1-Digit Occupations (ISCO-88)		
0 Armed Forces	0.004	0.004
1 Legislators, senior officials and managers	0.06	0.06
2 Professionals	0.21	0.19
3 Technicians and associate professionals	0.21	0.19
4 Clerks	0.09	0.09
5 Service workers and shop and market sales workers	0.19	0.21
6 Skilled agricultural and fishery workers	0.01	0.01
7 Craft and related trade workers	0.08	0.09
8 Plant and machine operators and assemblers	0.09	0.09
9 Elementary occupations	0.05	0.07
Number of observations	112,636	52,780,979

Notes: Columns 1 and 2 compare demographic and labor market traits in two datasets. Column 1 uses pooled, biannual cross-sections of the Swedish Work Environment Survey (1991–2015 for all variables except for wages and occupations, where the data are 1997–2015; N(Wages)=40,122; N(Occupations)=61,590). Column 2 uses data for all employed permanent residents in the same age range (19–65) and the same years. The population data are restricted to the employed, using an annual income threshold of one Swedish Price Base Amount (≈5,500 USD).

2.2. Operationalization of Key Variables

Gender. Binary sex at birth is coded by Statistics Sweden directly from the mandatory personal identification code.

[3] In this table and all other analysis, we deflate labor earnings and wages to constant prices.

Meaningful work. In the Swedish Work Environment Survey, respondents answer the question "Do you experience your work as mostly meaningless or meaningful?"[4] by choosing between five responses ranging from 1 (*Very meaningless*) to 5 (*Very meaningful*). The average score is 3.98 and the standard deviation is approximately one scale step (0.98). Over one-third (36%) experience their work as *Very meaningful,* and another third (35%) chose the second highest category. One-fifth (22%) chose the third, middle-of-the-road category; and 7% chose the two lowest categories of meaningless work (5% and 2%, respectively). The proportion of our sample indicating the lowest categories of meaning at work (7%) is very similar to the 8% statistic in other work that, using cross-country evidence, captures the proportion who indicate their job to be "socially useless" (Dur and van Lent 2019).

Pathways to meaningful work. Previous research has largely converged on a four-factor model of the psychological underpinnings of meaningful work (e.g., Martela and Riekki 2018, Cassar and Meier 2018). Three factors—autonomy, competence, and relatedness—are derived from self-determination theory, which focuses on predicting meaning in life more broadly (Deci and Ryan 1985, 2000, Ryan and Deci 2000, Weinstein et al. 2012). A fourth derives from research on beneficence, that is, work that has a prosocial impact. We follow this literature in our operationalization of each pathway:

Autonomy refers to a "sense of volition and internal perceived locus of causality in one's undertakings. The person feels that the actions emanate from the self and reflect who one really is, instead of being the result of external pressures" (Martela and Riekki 2018, p. 2). In a work setting, it describes a worker's sense of independence in determining the parameters of her work situation (Cassar and Meier 2018). We create a composite variable for autonomy by combining responses to four questions.[5] We standardize each of these ordinal variables to have a mean of 0 and standard

[4] In Swedish: Upplever du att mycket av ditt arbete är meningslöst eller meningsfullt?
[5] (1) Can you, in general, determine your own work hours within certain boundaries?, (2) Can you decide on your own pace of work?, (3) Do you feel that your job is non-autonomous and unfree or autonomous and free?, (4) Does it happen that you partake in decisions on the structure of your work (for example what will be done, how it will be done, or which people will do the work together with you)?

deviation of 1, take the average of the four standardized variables, and standardize this average. Web Appendix Table W1 lists these survey questions and their response categories in full.

Competence is defined as a "sense of mastery and efficiency in one's activities. One feels that one is capable at what one does and is able to accomplish projects and achieve one's goals" (Martela and Riekki 2018, p. 2). People feel that their jobs are meaningful if they perceive themselves to be competent at performing them, that is, when they are aptly able to apply their talents, skills, and/or knowledge on the job. If they perceive their job as too difficult, and thus that they lack the competence to accomplish its goals, or if they perceive their job to be too easy, such that it does not effectively utilize their talents, skills, and/or knowledge, individuals' sense of meaning at work is diminished. We standardize a single survey question to capture this job aspect: "Do you feel that the tasks involved in your job are too difficult, or too easy, for you?" Before the standardization, we recode the question into three categories: (1) far too easy or far too hard, (2) too easy or too hard, and (3) just right.

Relatedness captures the positivity of individuals' social relationships with others in the workplace. We use the average of four standardized survey questions that ask about relationships with managers and colleagues at work to capture this work characteristic. Two questions ask about the perception of appreciation and support from either colleagues or supervisors. The other two ask about the extent of conflicts (reverse-coded). Again, we standardize each variable, take the average, and standardize a second time. Web Appendix Table W1 lists the full questions and response categories.[6]

Beneficence refers to the sense of making a positive contribution to society, that is, doing something that benefits other people. In the workplace, jobs high in beneficence put the worker's actions into a bigger social context and fulfill a need for sense-making (Meier and Stutzer 2008, Grant 2008, Aknin et al. 2013). We follow previous research that has used downloadable data from the O*NET database to measure occupational traits and work conditions.[7] We select four variables to

[6] (1) Does it happen that your manager shows appreciation for something that you did?, (2) Does it happen that other people show appreciation for something that you did? (e.g., colleagues, patients, customers, clients)? (3) Are you involved in any form of conflict or quarrel with supervisors/managers at work?, (4) Are you involved in any form of conflict or quarrel with colleagues at work?

[7] The O*NET database (http://www.O*NETonline.org/) collects data on the task content of jobs from stratified random samplings of workers. These data are frequently used in economics research of job traits. Prominent

capture beneficence: (i) Concern for others, (ii) Social perceptiveness, (iii) Assisting and caring for others, and (iv) Service orientation. Appendix Table W2 lists the detailed descriptions of these traits. We link them to our data by a cross-walk between occupation codes at the 4-digit level. After standardizing the four variables to a mean of 0 and a standard deviation of 1, we take the average to get an aggregate index value for each occupation and then standardize this average.

Hierarchical position. One question in the Swedish Work Environment Survey asks about being a supervisor: respondents answer "yes" or "no" to whether the job involves "leading or delegating the work of others." Those who answer "yes" are asked another question about the number of subordinates. We use these two questions to code a six-category variable for hierarchical position: no subordinates, 1–5 subordinates, 6–10 subordinates, 11–25 subordinates, 26–50 subordinates, and 51 subordinates or more.

Female–male stereotype index. To generate this index, we combine publicly available data from three research papers that quantify gender stereotypes of jobs (Shinar 1975, Liben and Bigler 2002, Kay et al. 2015).[8] Each paper's index variable is matched to the Swedish occupation codes by job title. This matching results in at least one index value for nearly two-thirds (62%) of our observations. We standardize each index to a mean of 0 and a standard deviation of 1, after which we take the average of any available values in each occupation. Higher values on our resulting female–

examples include research on job flexibility and gender (Goldin 2014). Cortes and Pan (2018) study occupational gender segregation and measure occupations' *Social Contribution* using three of the four variables in our index.

[8] Shinar (1975) asked college students to quantify their perceptions of 129 occupational titles along a 7-point scale from masculine (1) to neutral (4) to feminine (7). Liben and Bigler (2002) asked adults to score 80 occupations' gender-type on a 7-point scale between (1) for males only, (2) much more likely for males, (3) somewhat more likely for males, (4) equally likely for males and females, (5) somewhat more likely for females, (6) much more likely for females, (7) for females only. Kay et al. (2015) quantify stereotypes based on the top 100 Google Image search results. A first list of 96 occupations taken from the Bureau of Labor Statistics was restricted to those with searchable terms in the job titles. For these, three MTurkers labeled the gender of each individual in each image. Images where at least two coders agreed that all portrayed individuals were either women or men were kept, and occupations with fewer than 80 remaining images were excluded. The gender index is the share of images portraying all women among these remaining 80+ images. Of the 96 job titles, 45 could be coded using this method. Most of the occupations in the three indices can be matched to our data: 90/129 for Shinar (1975), 65/80 for Liben and Bigler (2002), and 40/45 for Kay et al. (2015). Unmatched occupations are too narrow to fit even 4-digit occupation codes, like "President of the United States," "FBI agent," "Supreme court judge," "perfume salesperson," "announcer," or "football broadcaster." Some have also aged out of the labor market, like "elevator operator" and "telephone operator."

male stereotype index indicate a more female-stereotyped job, and lower values, a more male-stereotyped one.

Demographic traits. The demographic traits used as control variables throughout the paper are the categories of age, education level, and birth region listed in the top portion of Table 1.

2.3. Validating Our Measurement of Meaningful Work

To validate our measurement of meaningful work, we first test whether this variable has statistical relationships in the expected directions with the four pathway variables from the meaning literature. Table 2 shows these correlations, first in a bivariate, and then in a multivariate, regression including basic demographic controls and year fixed effects.[9] All correlations are directionally consistent with what we would expect, highly statistically significant, and meaningful in size. These results support the measurement's validity, despite the variable being self-reported and the possibility that survey fatigue could result in noisy responses.

Table 2. Validating the Measurement of Meaningful Work

DV: Meaningful work (Std)	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Autonomy	0.26***				0.25***	0.23***	0.22***
	(0.00)				(0.00)	(0.01)	(0.01)
Competence		0.17***			0.13***	0.11***	0.11***
		(0.00)			(0.00)	(0.01)	(0.01)
Relatedness			0.18***		0.13***	0.13***	0.14***
			(0.00)		(0.00)	(0.01)	(0.01)
Beneficence				0.26***	0.30***	0.33***	0.30***
				(0.00)	(0.00)	(0.01)	(0.01)
Log(Wage)						0.22***	0.23***
						(0.02)	(0.02)
Demographic controls							x
Year FE							x
Observations	87,828	112,236	85,513	51,257	48,898	28,550	28,549

Notes: The table shows estimates from regressing meaning at work in standard deviations on four pathway variables, also in standard deviations, and controls. Demographic controls are education level (3 dummies), age (3 dummies), and region of birth (2 dummies). Standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1.

[9] We allow sample sizes to vary depending on availability of the variables and show in Appendix Table W3 that the results are not sensitive to using only observations with non-missing data on all variables in the table.

A second validation test shows that self-reported meaningful work is correlated in the expected ways with job satisfaction, leave considerations, and turnover. Figure 1 reports point estimates from regressing these three outcomes (measurement details in the figure note) on the meaningful work variable. Black dots show estimates from bivariate regressions, dark gray dots from specifications that include demographics controls plus year fixed effects, and light gray dots from specifications with only fixed effects for workplaces.

For both women and men, a one-standard-deviation increase in meaning is associated with about a 0.5-standard-deviation increase in self-reported job satisfaction. It is also associated with a 4- to 6-percentage-point lower likelihood of considering to leave the employer for health reasons, against baseline proportions of 19% for women and 20% for men. The correlations with actual job transitions are smaller but statistically significant at the 5% level across specifications; at about 1 to 2 percentage points against baseline proportions of 19% for women and 18% for men. Importantly, these correlations suggest that men and women appear to value meaning at work similarly.

Figure 1. Importance of Self-Reported Meaning at Work

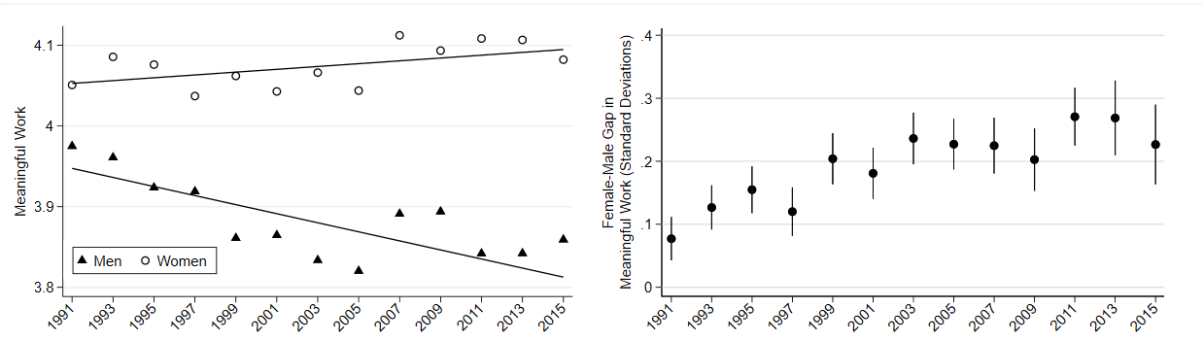
Notes: The figure shows point estimates from regressing three work outcomes on self-reported meaningful work in standard deviations from the Swedish Work Environment Survey. Job satisfaction is measured with the question "Do you feel very dissatisfied or very satisfied with your job?," answered on a 5-point scale ranging from "Very dissatisfied" to "Very satisfied," and transformed to standard deviations. Leave considerations is a dummy variable for responding "yes" to the question "Have you considered quitting your job for health reasons in the last 12 months?" Workplace transition is a dummy variable for transitioning to a new workplace within 3 years of taking the survey: 1 for switching and 0 for remaining. A workplace is the unique combination of the organization and establishment ID codes for a person's largest source of labor income in a particular year. This dummy is set to missing if the surveyed workplace ceases to exist in the 3-year window, and we also exclude respondents who reach the legal retirement age within this window (62 or older in the survey year). To focus on voluntary exits, it is also set to missing if the person transitions to non-employment, defined as a transition

where annual labor drops below 0.5 Swedish Price Base Amounts (2,750 USD) (following Hotz et al. 2018). Demographics controls are dummies for three age categories, three education categories, and three categories of birth region. Numerical estimates and sample sizes are reported in Appendix Table W4.

3. Documenting the Gender Gap in Meaningful Work

We examine the gender gap in meaningful work by plotting the average of self-reported meaning for women and men over time in each survey wave (left side of Figure 2). Consistent with recent research focused on the U.S. labor market (Maestas et al. 2018, Kaplan and Schulhofer-Wohl 2018), we observe that women in the Swedish labor market experience their jobs as more meaningful than men do. This gender gap is present from the start of our sample period and grows over time. The evidence suggests that, while meaningful work remained relatively constant for women, men are experiencing their job as less meaningful over time. The right side of the figure shows the female–male gap in each year in standard deviations (with vertical lines showing 95% confidence intervals). The gap was relatively small, at about 0.1 standard deviations, in 1991 and more than doubled to about 0.25 standard deviations 12 years later, in 2015.

Figure 2. Gender Gap in Meaningful Work over Time



Notes: The left side shows averages of the ordinal variable for self-reported meaningful work by sex at birth in each wave of the Swedish Work Environment Survey (1991–2015, N=112,636). The right side standardizes the variable for meaningful work and reports yearly female–male gaps in standard deviations along with 95% confidence intervals.

4. Explanations for the Gender Gap in Meaningful Work

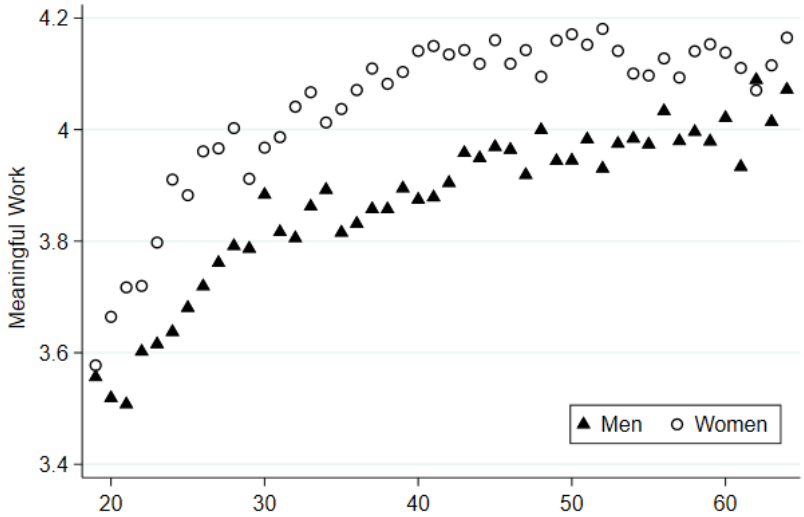
Having documented the existence of a gender gap in meaningful work, we now examine three potential explanations for this gap: (1) changes in work environments as women and men become parents, (2) over-representation of men at higher hierarchical positions in organizations, and (3) horizontal occupation segregation of women and men into jobs with different traits.

4.1. Labor Market Changes around Parenthood

A long-standing literature in sociology and a growing literature in economics emphasize the role of first parenthood as a trigger of increased gender inequality in the labor market (Waldfogel 1997, Budig and England 2001, Angelov et al. 2016). Parenthood triggers re-evaluations of labor market choices in ways influenced by gender norms for parental responsibilities and time investments (Hochschild 1989). Women may seek work arrangements with shorter work hours and commutes in order to facilitate their greater parental responsibilities in the household (e.g., Felfe 2012, Le Barbanchon et al. 2021), for example. A result of particular interest to our analysis is that of Pertold-Gebicka et al. (2016), who find using Danish administrative data that women, but not men, switch into the public sector when becoming parents. If parenthood leads women to switch into the public sector, this might simultaneously increase their experience of meaningful work (e.g., Besley and Ghatak 2005, Dur and Zoutenbier 2014).

We begin by inspecting the experience of meaningful work over the age distribution in Figure 3. For both men and women, self-reported meaning at work rises in their 20s and stabilizes around middle age. The gender gap is less apparent in the early 20s but becomes clear and appears to persist starting around the mid-20s. This could indicate that re-allocation of women across jobs at first parenthood is associated with the appearance of the gap. It could also reflect a situation in which the gender gap is based on occupations that require tertiary education, giving rise to the gender gap when people who attend college or university enter the labor market.

Figure 3. Meaningful Work, by Age



Notes: Data are pooled biannual cross-sections of the Swedish Work Environment Survey. N=112,636.

To examine the potential role of first parenthood in influencing the gap more directly, we select all survey respondents who became parents in the time window 1996–2010 and who were not full-time students in the 5-year period before this event (7,063 women and 7,080 men; no registered homosexual couples exist in this sample). This gives us a period of 15 years where we can observe the average trajectories of meaningful work in the pooled cross-sectional data, starting 5 years before a first child's birth and ending 10 years thereafter. As in previous work, we see that the gender gap expands at first parenthood, when looking at more traditional labor market outcomes: log wages, log labor income, and part-time work (see Appendix Figure W1). We explore whether a similar widening of the gap applies to the experience of meaningful work.

We plot binned averages of the meaningful work variable for each gender, in each year; before and after first parenthood (LHS of Figure 4). There are no apparent trend breaks at parenthood, which occurs at the dashed gray line (event time=0). The right side of the figure shows estimates for the female–male gap in each event time, following the regression specification of Pertold-Gebicka et al. (2016):

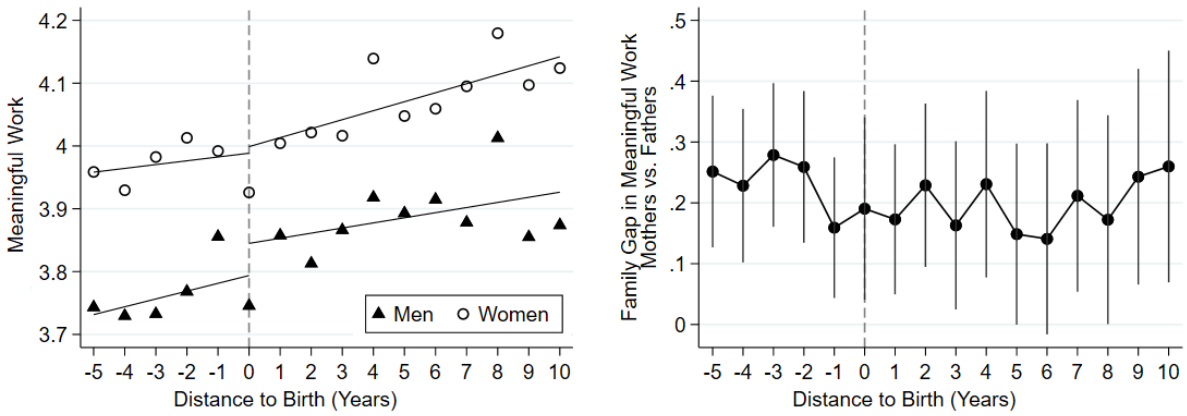
$$Meaning_{e,i} = \beta^e F_i * \alpha_e + \alpha_e + \alpha_{age} + SC_{i,t} + SC_{i,t} * F_i + e_{i,e} \qquad (1)$$

where the estimates plotted are β^e; F_i is a dummy variable for female sex at birth, and α_e are dummies for each event year in the 15-year window around childbirth (−5 to +10). We control for age

fixed effects and a dummy variable for becoming a parent to a second child, $SC_{i,t}$, also interacted with the female dummy variable.

The graphed estimates confirm the lack of any movement in women's (or men's) average experience of meaningful work at first parenthood.

Figure 4. Meaningful Work and First Parenthood



Notes: The left plot shows binned averages of self-reported meaningful work by the distance to first parenthood in years and sex at birth. The right plot reports coefficients on the event-time dummy variables from equation (1). N=14,143.

4.2. Vertical Gender Segregation

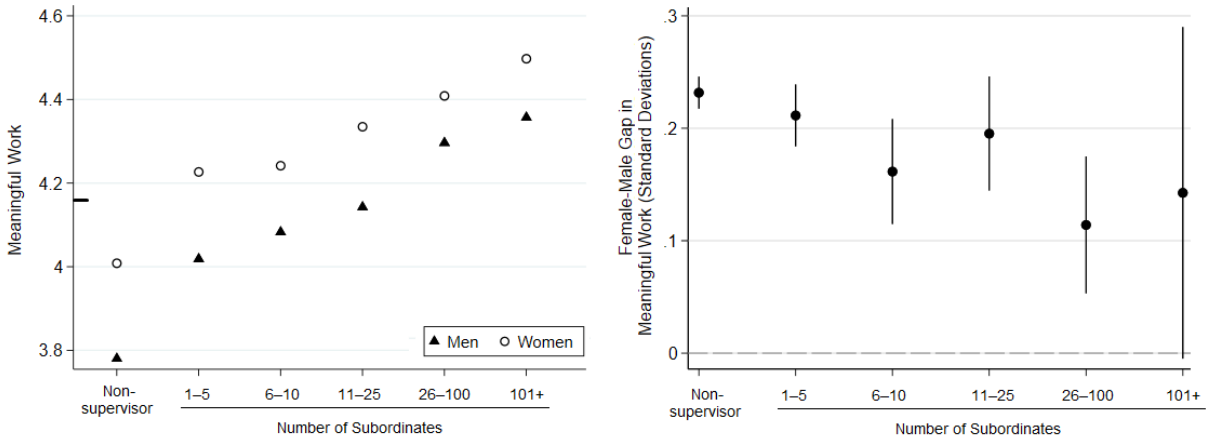
Vertical gender segregation is an important characteristic of gender differences in the labor market. This type of segregation refers to a declining proportion of women at higher organizational positions compared with lower ones (Levanon and Grusky 2016). In this subsection, we examine whether such segregation plays a role in explaining the gender gap in meaningful work.

The left side of Figure 5 plots average experience of meaningful work for men and women across the six levels of our hierarchy variable. The lowest level of non-supervisors, 53% of whom are women, has the lowest average level of meaning, and the level rises by more than 0.5 standard deviations as we move to the highest hierarchical level, where 28% are women. This suggests that, as we would expect, individuals who occupy higher positions in organizational hierarchies generally find their work to be more meaningful (Bowie 1998, Martela and Riekki 2018). This implies that women's aggregate level of meaning in the labor market would be (even) higher relative to men's if vertical

gender segregation were to be eliminated. In other words, the gender gap in meaningful work exists despite, not because of, vertical gender segregation.[10]

Examining the size of the gender gap in meaningful work on each hierarchical step (right side of Figure 5) provides some interesting clues about other potential mechanisms. The gender gap in meaningful work is clearly larger at lower levels of organizational hierarchy, even if standard errors are large at the highest level(s). This suggests that men derive less meaning from more-subordinate jobs. One possible explanation for this could be that these subordinate jobs align less with the male gender stereotype, for example (following Akerlof and Kranton 2000, Rudman et al. 2012). The larger gender gap in meaningful work at lower hierarchical positions also suggests that examining occupational differences between women and men in these non-managerial jobs might provide insights into the gender gap in meaningful work, which we explore in more detail in what follows.

Figure 5. Meaningful Work by Hierarchical Level



Notes: Data are pooled biannual cross-sections of the Swedish Work Environment Survey (1991–2015), N=111,074.

4.3. Traits of Occupations

Occupations differ widely in their tasks and work environments. We use the four-factor model of pathways to meaningful work to analyze whether this variation might contribute to women's aggregate advantage in the experience of meaningful work. We test two broad mechanisms which could underlie such a relationship. Women's advantage could arise because occupations more

[10] If we add controls for hierarchical position, the estimated gender gap in meaning increases by 4 percentage points (or by 20%).

commonly held by women are experienced as more meaningful by both women and men. It could also arise because women experience occupations with certain traits as more meaningful than their male colleagues occupying the same job. We find support for both explanations with regard to a specific job trait: *beneficence.* The section below summarizes this analysis and then discusses the results of the analysis in relation to gender norms and gender gaps in preferences and skills.

To begin, we describe how much of the aggregate gender gap in meaningful work exists *between* and *within* occupations. We assess this by regressing self-reported meaning at work (in standard deviations) on a female dummy and adding occupation fixed effects. The results reported in Table 3 show that in a regression with only demographics controls, the coefficient on the female dummy (i.e., the size of the gender gap) is 0.22 standard deviations. The coefficient then drops to 0.14 when adding fixed effects for 2-digit occupation codes (27 job titles) and further down to 0.10 and 0.09 for 3-digit codes (113 titles) and 4-digit codes (355 titles), respectively. The analysis shows that half the gender gap comes from women's segregation into occupations in which both men and women derive higher meaning, and the other half, from gender gaps in experience of meaning within occupations.

Table 3. Size of the Gender Gap in Meaningful Work Across and Within Occupations

DV: Meaningful Work (Std. dev)	(1)	(2)	(3)	(4)	(5)
Female = 1	0.26***	0.22***	0.14***	0.10***	0.09***
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Observations	52,021	52,019	52,019	52,019	52,019
Demographic Controls and Year FE		x	x	x	X
Occupation FE			2-digit	3-digit	4-digit

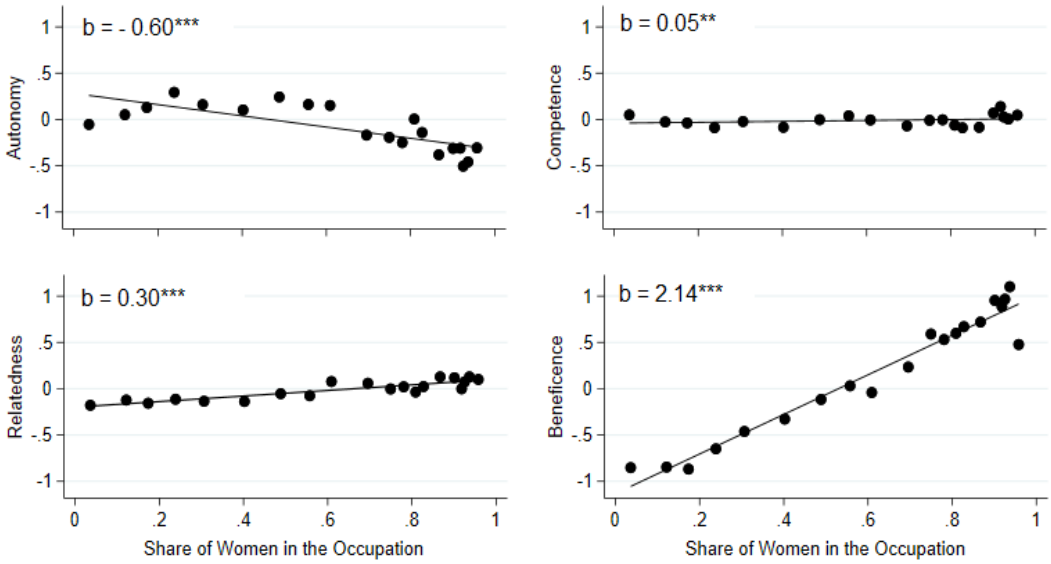
Notes: Standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1. Data are pooled cross-sections of the Swedish Work Environment Survey (2003–2015).

Given that both men and women appear to derive greater meaning from female-dominated occupations, we next ask: What factors make jobs commonly held by women more meaningful than jobs commonly held by men? To answer this question, we test whether occupations with more women have higher levels of each of the four meaning pathway variables. We then use a simple regression analysis to test whether such correlations explain the aggregate gender gap in meaningful work.

We calculate the share of women in each 4-digit occupation at the annual level for the full Swedish workforce and match these proportions with the survey data. Figure 6 shows binned averages for the pathway variables across the occupation's share of women. Of the four variables, *beneficence* stands out as strongly correlated with the share of women. Going from 0 to 100% women in the occupation is associated with a two-standard-deviation higher score on the beneficence trait. Looking at the data for specific occupations provides some additional insight into what is driving this pattern. Among the specific occupations with the highest beneficence levels, we find highly female-dominated occupations, such as nursing associate professionals and nursing and midwifery professionals. Conversely, we see some of the lowest beneficence levels in male-dominated occupations such as miners, shotfirers and quarry workers, and lifting-truck operators.

The other three meaning pathway variables are not positively correlated with the share of women. *Autonomy,* if anything, has a negative correlation with proportion of women in an occupation, *competence* has a near-zero correlation, and *relatedness* has a positive correlation (though smaller than that for beneficence).

Figure 6. Pathway Variables for Meaningful Work and the Occupation's Share of Women



Notes: The figure shows binned averages of four pathway variables for meaningful work, described in subsection 2.2 and Appendix Table W1, across the share of women in 4-digit occupations. The data are 12 pooled cross-sections of the Swedish Work Environment Survey, restricted to observations with non-missing data for the 4-digit occupation code, N=28,388 for observations with non-missing values on all variables in the figure. b-coefficients from bivariate OLS regression lines, *** p<0.01, ** p<0.05, * p<0.1.

Table 4 shows results from a corresponding regression analysis. The outcome variable is meaningfulness in standard deviations, which we regress on the share of women in the occupation and the four pathway variables, both separately and together. By examining how the coefficient on the share of women variable changes, we can test whether the level of beneficence, or that of the other three traits, explains why occupations with more women are experienced as more meaningful. The bivariate regression in Column 1 shows that a 10-percentage-point increase in women in an occupation is associated with a 0.06-standard-deviation increase in meaningfulness. Adding each of the job traits separately in columns 2–5 shows that only *beneficence* can account for this correlation. When including *beneficence,* the correlation drops close to zero and loses statistical significance at the 10% level. In contrast, the correlation does not change when adding either *autonomy, competence,* or *relatedness.* In sum, the fact that female-dominated occupations have a higher level of *beneficence* is clearly an important explanation of the gender gap in meaningful work.[11]

Table 4. Relationship between Meaningful Work and Occupation's Share of Women

DV: Meaningful work (Std. dev)	(1)	(2)	(3)	(4)	(5)	(6)
Share of women in the occupation	0.57***	0.73***	0.57***	0.53***	0.04	0.07***
	(0.02)	(0.02)	(0.02)	(0.02)	(0.03)	(0.03)
Autonomy		0.26***				0.25***
		(0.01)				(0.01)
Competence			0.15***			0.11***
			(0.01)			(0.01)
Relatedness				0.16***		0.12***
				(0.01)		(0.01)
Beneficence					0.26***	0.29***
					(0.01)	(0.01)
Observations	29,399	29,803	29,273	29,375	28,336	29,399

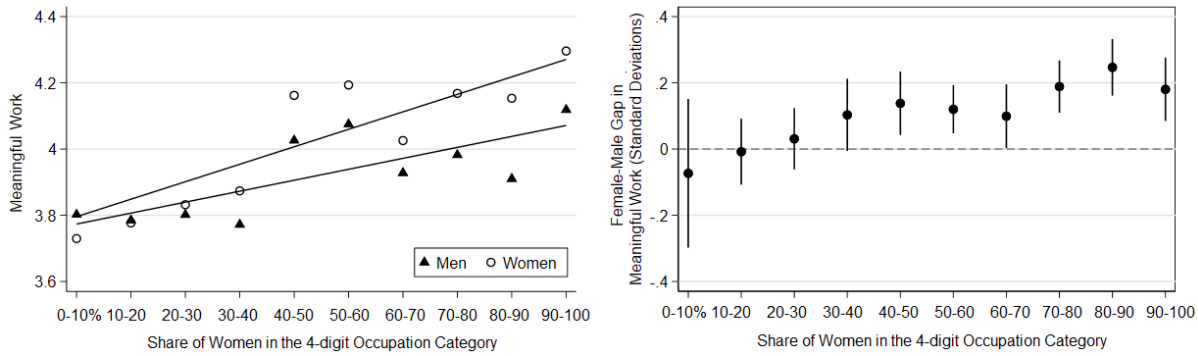
Notes: Standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1. Data are pooled cross-sections of the Swedish Work Environment Survey (2003–2015). Standard errors are clustered at the level of the 4-digit occupation code.

Next, we examine the gender gaps in meaningfulness *within* occupations. We first plot, separately, women's and men's levels of meaning by share of women in the occupation and compare the size of the female–male gap at different levels of this variable (Figure 7). Interestingly, this figure

[11] In Web Appendix Table W5 we run a similar test of regressing meaning in standard deviations on the female dummy and adding the pathway variables. In this analysis, beneficence explains nearly the entire gender-gap in meaningfulness.

shows that the gender gap exists in female-dominated but not in male-dominated occupations. Women find strongly female-dominated occupations to be more meaningful than their male counterparts, but women and men experience similar levels of meaning in male-dominated jobs.

Figure 7. Meaningful Work by the Share of Women in the Occupation



Notes: Data are pooled biannual cross-sections of the Swedish Work Environment Survey (1997–2015). The left figure splits the data into 20 equally large bins; the right side shows female–male gaps with 95% confidence intervals for 5-percentage-point intervals in the share of women. N=52,019.

We analyze whether women have a larger meaning advantage in jobs with higher levels of the four pathway variables. To do so, we estimate

$$Meaning_{it} = \beta F_i * Trait_{it} + F_i + Trait_{it} + \alpha_o + \mathbf{X}_{it} + \alpha_t + e_{it} \qquad (2)$$

where the outcome variable is meaningful work in standard deviations, F is the dummy variable for female sex at birth, and $Trait$ is each of the pathway variables. A positive estimate of the coefficient on the interaction between female sex and the trait, β, shows that the female–male gap in meaningfulness is larger in occupations with a higher level of a given occupational trait (e.g., beneficence). The key control is α_o, occupation fixed effects at the 4-digit level, which allows us to isolate the within-occupation variation in meaning across men and women. Finally, we include year fixed effects α_t, demographic controls $\mathbf{X}_i$ and cluster the standard errors at the 4-digit occupation level.

Table 5. Within-Occupation Gender Gaps in Meaningful Work

	Trait: Autonomy		Trait: Competence		Trait: Relatedness		Trait: Beneficence	
DV: Meaningful work (Std. dev)	(1)	(2)	(3)	(4)	(4)	(6)	(7)	(8)
Trait*fem	-0.11***	-0.11***	-0.02	-0.02	-0.03***	-0.03***	0.10***	0.11***
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.02)	(0.02)
Demographic controls	x		x		x		x	
Time FE	x	x	x	x	x	X	x	x

Occupation FE	x	x	x	x	x	X	x	x
Observations	51,267	51,269	51,916	51,918	50,339	50,341	51,255	51,257
R-squared	0.18	0.18	0.14	0.14	0.15	0.15	0.12	0.12

Notes: The table shows estimates for the interaction effect between the dummy variable for female sex at birth and each index listed in the top of the table and estimated with regression equation (2). Standard errors clustered at the 4-digit occupation level in parentheses.

The results in Table 5 show that women experience more meaning relative to men in occupations that have higher levels of beneficence. A one-standard-deviation-higher value of beneficence is related to an increase in the gender gap in meaning by 0.1 of a standard deviation. For competence and relatedness, the coefficients are close to zero and small. For autonomy, the interaction term is negative, indicating that men find jobs with higher autonomy relatively more meaningful than their female colleagues do. While this negative estimate is interesting, it obviously cannot account for women's aggregate advantage. Even-numbered columns exclude demographics controls, and a comparison of the coefficients with and without controls indicates that these estimates are not an artifact of the demographic controls.

In sum, we find evidence of two ways that occupational gender segregation contributes to the gender gap in meaningful work. Women are more likely to be employed in occupations that both women and men find to be more meaningful and that, on average, have higher levels of beneficence. Women also find jobs with high beneficence (even) more meaningful than men do. These patterns might have several theoretical causes. Women might have stronger preferences for prosocial jobs, and greater skills in performing such jobs, or they might receive more positive reactions from society when holding them. While we cannot disentangle or disprove these explanations, we can discuss their validity in light of our empirical results.

Regarding preferences, surveys show that women place greater value on the social value of work. When asked what motivates their career choice, women are more likely to cite opportunities to be helpful to others in society and to work with people, whereas men are more likely to cite economic opportunities (Fortin 2008). Burbano et al. (2020) use cross-country survey data and a conjoint analysis with U.S. MBA students to show that women find the social aspects of a job to be more important than men do, especially in highly developed countries and among high-skilled individuals.

Non et al. (2022) use a discrete choice experiment to demonstrate that companies with prosocial missions are particularly valued by women.

Other research argues that women have superior social skills than men and therefore sort into "people-oriented" occupations. Borghans, ter Weel, and Weinberg (2014) show that people with greater self-reported social skills are more likely to work in occupations that place a greater emphasis on "people tasks," and that these occupations also have higher shares of women. Lordan and Pischke (2022) use data from three countries to show that women's job satisfaction is greater in jobs with job attributes of "people" and "brains," and lower for "brawn." There is no correlation for men.

Gender differences in preferences or skills may all help account for the higher shares of women in jobs with higher beneficence. The within-occupation gaps are, however, somewhat more complex. If having more skills translates into more meaning, and if the gender composition of an occupation reflects the relative skill-advantage of either gender, then we should perhaps also have observed a male advantage in experience of meaning in male-dominated occupations. Similarly, if the gender composition reflects preferences, we should have observed the same thing.

Gendered norms may offer a more consistent explanation for the pattern of gender gaps in meaningfulness within occupations. Prosocial jobs, and/or the tasks performed in them, are likely to be more strongly associated with the female gender role. This is particularly true for care-oriented jobs (Abele 2003, Fiske and Stevens 1993, Shinar 1975, Liben and Bigler 2002, Kay et al. 2015).[12] Breaking gender norms in one's occupational choice both depresses a person's sense of self and can cause negative, retaliatory reactions from colleagues and broader society, as formalized by Akerlof and Kranton (2000). Over time, the female gender role has broadened more than the male. Agentic traits have become somewhat more accepted as part of the female gender role, while communal traits have not become more accepted in the male role (Sendén et al. 2019). Women would thus be less subjected to social sanctions in male-dominated jobs—recall the results for leadership—whereas men would face relatively heavy sanctions for their work in jobs with high beneficence.

[12] Other relevant research shows that organizations' prosocial characteristics such as commitments to community and environmental issues are considered female-typed (Lee and Huang 2018, Shea and Hawn 2019) and that congruence between gender stereotypes and prosocial characteristics of organizations affects job-seeker interest (Abraham and Burbano 2021).

An analysis of the index of gender stereotypes of occupations supports this conjecture. Jobs with the highest beneficence are also the most strongly female-stereotyped according to our index (described in section 2.2). The pairwise correlation coefficient between the two variables is 0.77 (Appendix Figure W2 graphs this correlation). Using the gender stereotype index instead of the pathway traits in the interaction model (equation 2) also shows the same pattern: larger gaps in the most female-stereotyped occupations (results in Appendix Table W5).

5. Implications of the Gender Gap in Meaningful Work

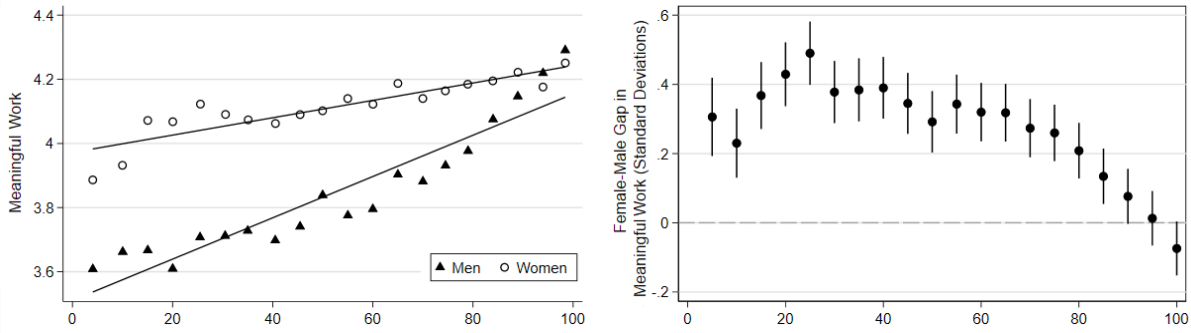
We discuss two implications of the gender gap in meaningful work. One concerns how a valuation of meaningful work affects estimates of gender inequalities in work compensation and, as a result, a broader conceptualization of gender inequality in well-being in the labor market. The other considers whether the male disadvantage in meaningful work might have contributed to the grievance-based rise of radical-right populism in advanced democracies.

5.1. Implications for Gender Inequality in Work Compensation

To understand how meaningful work affects gender inequalities in work compensation across the wage distribution, we need to examine two things. First, we need to know men's and women's monetary valuation of meaningful work; second, we need to know the level of meaningful work across different wage levels.

Figure 8 shows binned averages for self-reported meaning across percentiles of (logged) wages. It demonstrates that higher-paid jobs are experienced as more meaningful, and that this relationship is stronger for men. Average meaningfulness for men in the top 5% of the wage distribution lies 0.7 scale steps (0.7 standard deviations) above the average for the bottom 5%, while the corresponding increase for women is smaller, at 0.4 scale steps. The right side of the figure compares the female–male gap in meaningful work across five brackets of wage percentiles. In the lower half of the wage distribution, women lead men in meaningful work by about 0.4 standard deviations (albeit less so in the lowest-paid jobs). At higher wage levels, the gap declines gradually and reaches zero at the top of the wage distribution.

Figure 8. Meaningfulness of Work across the Wage Distribution



Notes: The left side shows averages of the ordinal variable for self-reported meaningful work by sex at birth for increments of 5 percentiles of the wage distribution, calculated within categories of year and sex at birth for the entire Swedish employed, working-age population. Wage data are available for 1997–2015 (N=40,144). The right side standardizes the variable for meaningfulness of work and reports yearly female–male gender gaps in standard deviations along with 95% confidence intervals.

Recent research has shown that workers are willing to sacrifice wages to work at jobs with characteristics we would expect to correlate with greater meaning. People hired in field experiments were willing to work for 12% and 44% less when informed about the corporate social responsibility of the firm (Burbano 2016) and for 26% less when informed about the firm's social mission to help children (Hedblom et al. 2019), for example. A hypothetical job choice experiment by Measatas et al. (2018) quantified the valuation of jobs with "frequent" rather than "occasional" opportunities to make a positive impact on one's community or society. Although men and women were not statistically different from each other at the 5% level, men valued this job trait as the equivalent of a 4.4-percentage-point wage increase, and women, as a 3.6-percentage-point increase.

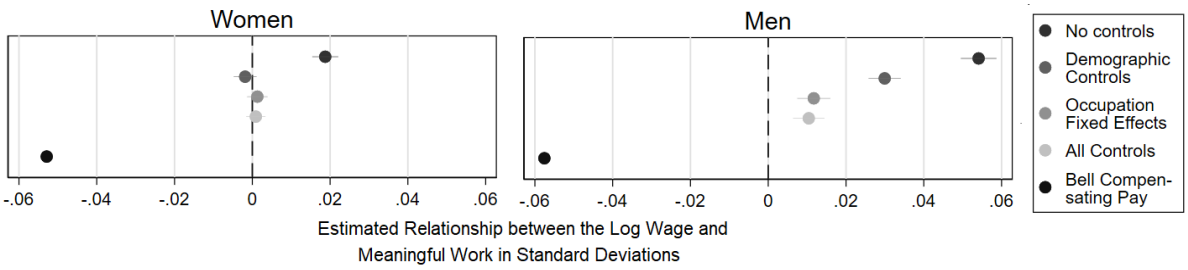
To calculate the monetary equivalent for meaningful work more directly, we use the method proposed in Bell (2020). This method seeks to overcome the challenge of controlling for individual ability in observational data. As we saw in Figure 3, meaningful work correlates positively with higher wages, which could be due to more productive workers both receiving higher wages and experiencing their jobs as more meaningful. Holding individual productivity constant is therefore key to reliably estimating the potential wage reduction—a negative compensating differential—that workers incur to obtain more meaningful work.

Figure 10 reports a sequence of point estimates on the variable for meaningful work (in standard deviations) in regressions with log wage as the outcome. For comparison, the top marker shows the positive point estimate from a bivariate regression. To make workers more comparable, we then add

control variables for demographics and fixed effects for 4-digit occupation codes. This pulls the point estimate toward zero. The bottom point estimate adds Bell's (2020) approach to controlling for unobserved ability in the wage regression while estimating compensating pay for other work amenities. To measure unobserved ability, Bell proposes to first regress the wage and the amenity (here, meaningful work) on a proxy for ability (here, years of education). The predicted level of ability (education) from this regression is then used as the control for unobserved ability in the regression of wages on the amenity of focus (meaningful work). With this adjustment, we now observe negative point estimates on the wage variable. The size indicates that a one-standard-deviation increase in meaningfulness of work is associated with a negative compensating differential of about 6% of the wage and is highly similar for men and women.

One might worry that the results in Figure 9, where Bell's estimation method produces a negative sign on the amenity variable in the wage regression, is an artifact of the method itself or, alternatively, is unique to meaningful work. To help address this potential concern, Figure W3 in the Web Appendix shows that the method also returns compensating differentials in the expected directions for other amenities: flexible work times, physical exhaustion (reverse-coded), and influence over work structure.

Figure 9. Compensating Pay for Meaningful Work



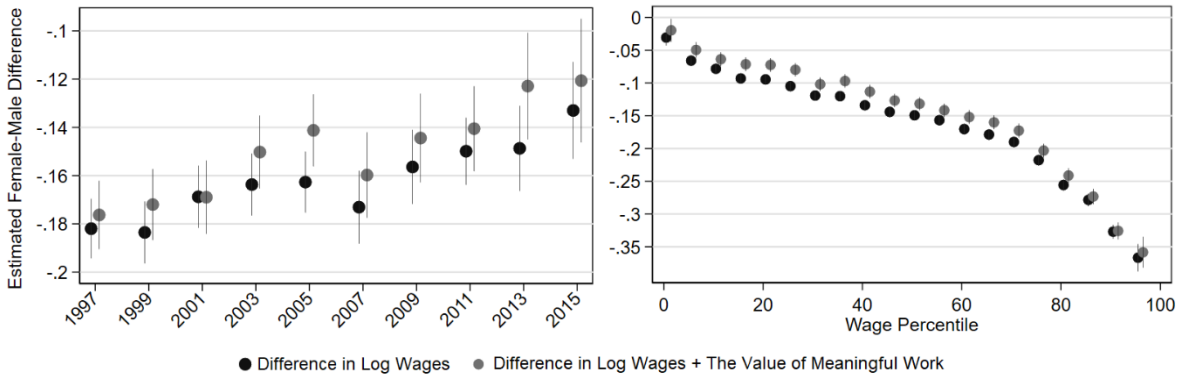
Notes: Estimated coefficients from OLS regressions of the individual log(wage) on self-reported meaningful work in standard deviations. The bottom estimate implements Bell's (2020) method for estimating compensating pay with education as the ability proxy. Wage data come from the Swedish official salary statistics. Demographic controls are dummies for four age categories, two dummies for having secondary or tertiary education, and two dummies for being born in Europe or outside Europe, with Sweden as the reference. Occupation fixed effects are at the 4-digit level of the Swedish occupation code (SSYK). N Women=23,519; N Men=17,601.

We can now use the monetary valuation of meaningful work to examine the degree to which it affects estimates of gender (remuneration) inequality in the labor market. For the years for which we

have wage data (1997–2015), the unadjusted wage gap is 16.3% to women's disadvantage, while the gender difference in meaning is 0.21 standard deviations. By multiplying each individual's level of meaningful work with the gender-specific compensating pay for this amenity, we can measure the gender difference in meaning in wage equivalencies. Performing this calculation shows that the gender gap in meaning is equivalent to a one-percentage-point wage difference. Thus, on average, women's higher meaning of work compensates for about 6.3% of the gender wage gap.

We further extend the analysis to study the impact of the gender gap in meaningful work on the gender wage gap over time and across the wage distribution. This analysis plots the heterogeneity in the gender wage gap in log points to the log-point gap in the combined measure of wages plus the monetary equivalent of meaningfulness. Figure 10 shows these results across survey years (left side) and across wage percentiles grouped into deciles (right side).

Figure 10. Gender Differences in Wages and "Compensated" Wages over Time and Across the Wage Distribution



Notes: The black markers in the left graph show the estimate on a dummy variable for female sex at birth in wage regressions run in sub-samples of data for each survey year. The black markers in the right graph show those coefficients for sub-samples of five wage percentiles, where wage percentiles are calculated year by year in data for the employed labor force. Vertical lines show 95% confidence intervals. Gray dots show the female–male gender gap in the sum of the wage and monetary equivalent of meaning. The latter is calculated by multiplying the individual's reported level of meaning with the estimated value of meaning from Figure 9.

The unadjusted gender wage gap decreased four percentage points, from 18% to 14%, between 1997 and 2015. After factoring in the growing gender gap in meaningful work (recall Figure 2), the gap decreased even more, starting at 18% and ending at about 12%. Women's growing advantage in meaningful work hence contributed to a more rapid convergence of total work compensation than that observable from wage statistics alone.

As in other countries, the Swedish gender wage gap grows toward the top of the wage distribution (e.g., Blau and Kahn 2017). Recall that in Figure 8, the gender gap in meaning has the opposite pattern, with women enjoying an advantage in lower-wage jobs but no advantage in higher-paid ones. It follows that the gender gap in meaningful work compensates for a relatively large fraction of the gender wage gap—around one-fifth—when wages are relatively low. In high-wage jobs, however, the larger gender wage gap does not change when adding the valuation of the (negligible) gender gap in meaningful work. This suggests that even a broader conceptualization of gender inequality in the labor market that incorporates both monetary and this aspect of non-monetary remuneration remains stark and significant where gender wage inequality is most pronounced—at the higher end of the wage distribution.

5.2. Implications for Grievance-Based Politics

We next consider an unexplored political implication of the gender gap in meaningful work. To many, the rise of radical-right populism is the most salient political phenomenon of this generation, and working-class men with low levels of education are considered the backbone of these movements worldwide (e.g., Rydgren 2012, 2018, Dal Bó et al. forthcoming). The literature seeking explanations for this phenomenon has mainly focused on two explanations: economic grievances in the labor market and cultural grievances related to immigration and changing demographics (e.g., Rydgren 2018, Margalit 2019, Guriev and Papaioannou 2020). We provide some descriptive evidence that men's (growing) disadvantage in meaningful work (recall Figure 2) may also be contributing to this phenomenon.

We begin by comparing traits of the men who hold the least meaningful jobs in our data with traits known to be over-represented among radical-right male voters. To match the time of the radical right's mobilization in Swedish politics and society, we restrict the data to the three most recent survey waves (2011, 2013, and 2015).[13] In these three cross-sections, 9% of the men characterize their job as "largely meaningless," that is, they respond with one of the bottom two categories in the survey

[13] Sweden's radical-right party broke the vote threshold for parliamentary entry in 2010.

question on meaningful work. Among men with less than a high school education, it is 11%—an over-representation relative to the full sample by 37%. In the largest male-dominated 1-digit occupation code for the working class, *Plant and machine operators and assemblers,* the proportion is 12%, corresponding to an over-representation by 50%. These simple descriptive traits show that men with lower levels of education and in working-class jobs—the core of radical-right movements—are more likely than others to consider their jobs to be meaningless.

To get a more direct sense of the potential link between meaningless work and political mobilization for the radical right, we use an additional administrative dataset for all municipal councilors elected in 2006, 2010, and 2014 (N=33,543 person-year observations). Arguably, being a local politician representing Sweden's radical-right party, the Sweden Democrats, is a reasonable proxy for mobilization into the organized radical right. The occupation code is available for 89% of the councilors (81% for Sweden Democrats, because representatives of this party are less likely to be employed).[14] We merge these data with averages of self-reported meaningfulness calculated in our main dataset at the 4-digit occupation level.

The scatter plot in Figure 11 shows binned averages of a dummy variable for being a Sweden Democrat politician across the variable for meaningful work. In the full sample of municipal councilors, 4.47% are Sweden Democrats. But among municipal councilors whose occupations' meaningfulness lies at least 0.25 standard deviations below the median, the proportion of Sweden Democrats nearly triples, to 12%. At the same time, the proportion is clearly smaller among occupations ranked as more meaningful. Among politicians whose occupations lie more than 0.25 standard deviations above median meaningfulness, the proportion of Sweden Democrats is just 1.5%.

Taken together, these results provide suggestive empirical evidence that a lack of meaningful work might be a factor contributing to grievance-driven mobilization of the radical right. Theoretically, there are a few mechanisms through which a lack of meaningful work might contribute to such mobilization, although empirical exploration of these mechanisms is outside the scope of this

[14] Nearly all municipal councilors are so-called leisure politicians who carry out their political appointments in their spare time. Only about one person per municipality, the mayor, is employed on their political position and receives a wage to accompany it.

paper. First, grievances grow as groups of the population see their well-being decrease, and it has been established that a lack of meaningful work contributes to a sense of low well-being among individuals (Karlsson et al. 2004, Cassar and Meier 2018, Nikolova and Cnossen 2020). Further, a lack of meaningful work may drive particular attitudes that are linked to the components of radical-right platforms. People whose work feels less meaningful—and has grown to feel less meaningful over time—may be more inclined toward political appeals to nostalgia for past times, for example. A lack of meaningful work may also trigger negative emotions and anger, which power the broader anti-establishment and anti-immigrant attitudes of populist radical-right parties (Rhodes-Purdy et al. 2021).

Figure 11. Share of Radical-Right Politicians by 4-Digit Occupations' Average Levels of Meaningful Work

Notes: The data are three cross-sections of elected municipal councilors in three elections, 2006, 2010, and 2014 (N=31,102), linked at the 4-digit occupation level to average valuations of meaningful work from the Swedish Work Environment Survey. The sample is split into 50 bins with an equal number of observations, and the figure plots the proportion of Sweden Democrat politicians in each bin.

6. Discussion and Conclusions

Most people spend most of their waking hours at work. Whether this work is meaningful or meaningless is therefore fundamental for individuals' well-being at work, as well as general well-being. Research on gender differences in the labor market has documented many advantages for men:

in terms of wages, status, and prestige, for example. This paper shows that women experience a relative benefit in one work characteristic—meaning at work—and by a growing margin over time. Having documented this pattern and thereby replicated results from the U.S. labor market in a different geographic region, our paper set out to explore potential explanations for and implications of the gender gap in meaningful work.

What explains this gender gap? Using detailed Swedish data, we reject two explanations and find strong evidence for a third. Interestingly, we find no evidence that the gender gap in meaning stems from changing labor market choices at parenthood, unlike gender gaps in earnings or flexible work conditions that have been linked to such choices. We also find no support for the notion that the relative positioning of men and women along hierarchical positions (vertical segregation) might serve as an explanation. Because higher hierarchical positions are experienced as more meaningful by both men and women, the gender gap in meaningful work appears to exist despite, rather than because of, women's under-representation in these positions.

We find strong evidence that the over-representation of women in certain kinds of occupations—those having a high level of beneficence or prosocial impact—helps explain a large portion of the gender gap in meaningful work. The relationship between the share of women in an occupation and its general beneficence explains nearly the entire gender gap in meaningfulness in the labor market. Notably, both women and men find work in such occupations to be substantially more meaningful.

We also find evidence of a more nuanced relationship between the beneficence of occupations and the experience of meaning by gender. Though both men and women experience high-beneficence occupations as more meaningful, this relationship is even stronger for women—creating a within-occupation gender gap in meaningful work that grows with the beneficence level of a job. We provide suggestive evidence that gender stereotypes may offer one possible explanation for this pattern. Given that high-beneficence occupations align more closely with the female gender stereotype, this may lead men to derive less meaning from taking on these role-incongruent jobs. This mechanism is also consistent with evidence that women find prosocial aspects of a job more important than men do (Burbano et al. 2020).

We examined two important implications of the gender gap in meaningful work. First, we considered whether women's advantage in meaningful work might change our interpretation or assessment of gender inequality in gender remuneration at work if we consider work remuneration to be a function of both meaning and wages. Because women have an advantage in meaningful work, we would expect that adding the monetary valuation of meaningful work to that of wages would reduce the size of the gender remuneration gap compared with that of the gender wage gap alone. Notably, when considering this implication across the wage distribution, we find that this only applies to jobs in the lower half of the wage distribution and does not affecting the gender wage gap where it is the largest—in the highest-paying jobs.

We also consider whether the flip side of women's (growing) advantage in meaningful work—men's (growing) disadvantage in meaningful work—may have political implications. In particular, we consider a potential relationship between the gender gap in meaningful work and the increase of radical-right populism amongst certain groups of men. We observe that the socio-demographic group most over-represented among voters for populist radical-right parties—working-class men with less education—is also the most over-represented among people who characterize their work as "largely meaningless." Administrative data on local politicians further showed a strong correlation between lack of meaningful work and mobilization for the radical right. Local politicians for the Swedish radical-right parties are strongly over-represented among occupations with relatively low rankings of meaningfulness but under-represented in more meaningful occupations.

In addition to making up the backbone of the grievance-based radical-right political movement, men with low levels of education are also notably over-represented in "deaths of despair" related to drug overdoses, suicides, and alcohol-related liver mortality. One explanation connects these deaths, which are of course the tip of the iceberg in terms of underlying stress, to negative prospects in the labor market and family life, in other words, a "loss of the structures that give life a meaning" (Case and Deaton 2017, p. 413). Given that our paper highlights a worsening trend in men's sense of meaningfulness at work, future work could examine the possibility that the increase in men's sense of meaningfulness at work might be contributing to these negative outcomes.

One pathway to gender equality in meaningful work could involve an inflow of men into female-dominated occupations with high beneficence. This process has been slow, however, potentially because of lower wages and interpersonal mistreatment of these male gender minorities (Folke and Rickne 2020). Raising wages in these meaningful jobs and combating sexual harassment could help facilitate occupational integration. Softening gender norms that may make men reluctant to take these jobs and may also reduce their sense of meaningfulness once holding them could be another pathway.

Our paper is not without limitations, which point to opportunities for future research. We focused on examining explanations for and implications of the gender difference in average meaningfulness of work rather than exploring why this gender difference is growing over time, for example. Women's over-representation in high-beneficence jobs cannot fully explain this trend, because these more meaningful jobs have seen an increasing share of men over time. Future work could therefore test other explanations, such as structural transformations of the labor market linked to automation or globalization, that have affected men's jobs more than women's. Another limitation is that our exploration of the explanations of the gender difference in meaningful work provides correlational, but not causal, evidence that gender stereotypes related to job traits such as beneficence cause gender differences in experiences of meaning. Likewise, a potential implication of the gender gap in meaningful work that we explore—the relationship between uneducated men's experience of meaningless work with characteristics and behavior associated with mobilization of the radical right—is based on correlational rather than causal evidence. Future work could employ identification strategies to address this limitation and thereby extend our understanding of the mental construct of meaningful work and corroborate its implications.

Given the importance of meaning at work to individual utility and well-being and, thus, to our understanding of well-being at work, it is notable that gender differences in this work characteristic have been relatively understudied. Our paper represents an important step forward in characterizing this important phenomenon and beginning to explore its drivers and implications.

References

Abele, A. (2003) The dynamics of masculine-agentic and feminine-communal traits: Findings from a prospective study. *Journal of Personality and Social Psychology,* 85(4): 768–76.

Abraham M., Burbano V.C. (2021) Congruence between leadership gender and organizational claims affects the gender composition of the application pool: Field experimental evidence. *Organization Science*, 33(1):393-413.

Adams-Prassl, A. (2020) The gender wage gap on an online labour market: The cost of interruptions. *Mimeo*.

Akerlof, G. A., Kranton, R. E. (2000) Economics and identity. *The Quarterly Journal of Economics,* 115(3): 715–753.

Aknin, L. B., Dunn, E. W., Whillans, A. V., Grant, A. M., Norton, M. I. (2013). Making a difference matters: Impact unlocks the emotional benefits of prosocial spending. *Journal of Economic Behavior and Organization,* 88, 90–95.

Angelov, N., Johansson, P., Lindahl, E. (2016) Parenthood and the gender gap in pay. *Journal of Labor Economics*, 34(3), 545–579.

Ariely D., Kamenica E., Prelec, D. (2008) Man's search for meaning: The case of legos. *Journal of Economic Behavior,* 67(34):671–677.

Arnold, K., Turner, N., Barling, J., Kelloway, E., McKee, M. (2007) Transformational leadership and psychological well-being: the mediating role of meaningful work. *Journal of Occupational Health Psychology,* 12: 193–203.

Arnoux-Nicolas C., Sovet L., Lhotellier L., Di Fabio A., Bernaud J.L. (2016) Perceived work conditions and turnover intentions: The mediating role of meaning of work. *Frontiers in Psychology,* 12(7):704.

Barbulescu R., Bidwell, M. (2013) Do women choose different jobs from men? Mechanisms of application segregation in the market for managerial workers. *Organization Science,* 24(3): 737–756.

Bell, A. (2020) Job amenities & earnings inequality. *Job Market Paper, Harvard University.*

Bertrand, M., Goldin, C., Katz, L. F. (2010) Dynamics of the gender gap for young professionals in the financial and corporate sectors. *American Economic Journal: Applied Economics,* 2(3): 228–55.

Besley, T., Maitreesh, G. (2005) Competition and incentives with motivated agents. *American Economic Review* 95(3): 616–636.

Blau, F. D., Kahn, L. M. (2017) The gender wage gap: Extent, trends, and explanations. *Journal of Economic Literature,* 55(3): 789–865.

Brief A.P., Nord, W.R. Meanings of occupational work: A collection of essays, Free Press 1990.

Borghans, L., Ter Weel, B.,Weinberg B.A. (2014) People, skills, and the labor-market outcomes of underrepresented groups. *ILR Review* 67(2): 287-334.

Bowie, N.E. (1998) A Kantian theory of meaningful work. *Journal of Business Ethics*,1083–1092.

Budig, M. J., England, P. (2001) The wage penalty for motherhood. *American Sociological Review,* 204–225.

Burbano, V.C. (2016) Social responsibility messages and worker wage requirements: Field experimental evidence from online labor marketplaces. *Organization Science* 27(4): 1010–1028.

Burbano, V.C, Meier S., Padilla N (2020) Gender differences in preferences for meaning at work. *Working Paper, Columbia Business School.*

Buser, T., Niederle, M., Oosterbeek, H. (2014) Gender, competitiveness, and career choices. *The Quarterly Journal of Economics,* 129(3): 1409–1447.

Case, A., Deaton, A. (2017) Mortality and morbidity in the 21st century. *Brookings Papers on Economic Activity,* 397.

Cassar A., Wordofa F, Zhang Y.J. (2016) Competing for the benefit of offspring eliminates the gender gap in competitiveness. *Proceedings of the National Academy of Sciences* 113(19):5201–5205.

Cassar, L., Meier, S. (2018) Nonmonetary incentives and the implications of work as a source of meaning. *Journal of Economic Perspectives,* 32(3):215–38.

Caza, B. B., Wrzesniewski, A. (2013) How work shapes well-being. *The Oxford Handbook of Happiness,* 693–710.

Cech E., Rubineau B., Sibey S., Seron C. (2011) Professional role confidence and gendered persistence in engineering. *American Sociological Review,* 76(5): 641–666.

Correll S.J. (2001) Gender and the career choice process: The role of biased self-assessments. *American Journal of Sociology,* 106(6): 1691–1730.

Correll S.J., Benard S. (2006) Biased estimators? Comparing status and statistical theories of discrimination. *Social Psychology Workplace.* (Emerald Group Publishing), 89–116.

Cortes, P., Pan, J. (2018) Occupation and gender. In: *The Oxford Handbook of Women and the Economy,* Edited by S. Averett, L. Argys & S. Hoffman, 425-452.

Dal Bó, E., Finan, F., Folke, O., Persson, T., Rickne, J. (2021). Economic and social outsiders but political insiders: Sweden's radical right. *Review of Economic Studies.*

Deci, E. L., Ryan, R. M. (1985) The general causality orientations scale: Self-determination in personality. *Journal of Research in Personality,* 19(2): 109–134.

Deci E.L., Ryan R.M. (2000) The "what" and "why" of goal pursuits: Human needs and the self-determination of behavior. *Psychological Inquiry,* 11(4): 227–268.

Delfino, A. (2021) Breaking gender barriers: Experimental evidence on men in pink-collar jobs. *Working Paper.*

Duffy, R. D., Allan, B. A., Autin, K. L., Bott, E. M. (2013) Calling and life satisfaction: it's not about having it, it's about living it. *Journal of Counseling Psychology.* 60(1): 42–52.

Dur, R., van Lent, M. (2019) Socially useless jobs. *Industrial Relations: A Journal of Economy and Society, 58*(1): 3–16.

Dur R, Zoutenbier R. (2014) Working for a good cause. *Public Administration Review* 74(2): 144–155.

Eriksson, T., Kristensen, N. (2014) Wages or fringes? Some evidence on trade-offs and sorting. *Journal of Labor Economics,* 32(4): 899–928.

Felfe, C. (2012) "The motherhood wage gap: What about job amenities?" *Labour Economics,* 19(1): 59–67.

Fernandez R.M., Friedrich C. (2011) Gender sorting and application interface. *Industrial Relations,* 50(4): 591–609.

Fernandez R.M., Sosa M.L. (2005) Competing for jobs: Labor queues and gender sorting in the hiring process. *Social Science Research,* 37(4): 1061–1080.

Fiske S., Stevens L.E. (1993) What's so special about sex? Gender stereotyping and discrimination. Gend. Issues Contemp. Soc. Claremont Symposium on Applied Social Psychology, Vol. 6. (Sage Publications, Inc, Thousand Oaks, CA, US), 173–196.

Flory, J. A., Leibbrandt, A. List, J. A. (2015) Do competitive workplaces deter female workers? A large-scale natural field experiment on job entry decisions. *Review of Economic Studies,* 82(1):122–55.

Fortin, N. M. (2008) The gender wage gap among young adults in the United States the importance of money versus people. *Journal of Human Resources*, 43(4): 884-918.

Buser, T., Niederle, M. Oosterbeek, H. (2014) Gender, competitiveness, and career choices. *Quarterly Journal of Economics,* 129(3): 1409–47.

Flory, J. A., Leibbrandt, A., List, J. A. (2015) Do competitive workplaces deter female workers? A large-scale natural field experiment on job entry decisions. *The Review of Economic Studies,* 82(1):122–155.

Folke O., Rickne J. (2022) Sexual Harassment and Gender Inequality in the Labor Market. *The Quarterly Journal of Economics.* https://doi.org/10.1093/qje/qjac018

Frankl, V. E. (1962) Man's Search for Meaning: an Introduction to Logotherapy. Boston: Beacon Press.

Gartenberg C., Prat A., Serafeim G. (2019) Corporate purpose and financial performance. *Organization Science.* 30(1):1–18.

Goldin, C. (2014) A grand gender convergence: Its last chapter. *American Economic Review,* 104(4): 1091–1119.

Grant, A.M. (2008) The significance of task significance: Job performance effects, relational mechanisms, and boundary conditions." *Journal of Applied Psychology* 93(1): 108.

Guriev, S., and Papaioannou, E. (2020) The political economy of populism. Available at SSRN 3542052.

Hedblom, D., Hickman B.R., List J.A. (2019) Toward an understanding of corporate social responsibility: Theory and field experimental evidence. No. w26222. National Bureau of Economic Research.

Hochschild, A. (1989) The second shift: Working parents and the revolution at home. (New York: Penguin).

Hotz, V. J., Johansson, P., Karimi, A. (2018) Parenthood, family friendly workplaces, and the gender gaps in early work careers (No. w24173). National Bureau of Economic Research.

Karlsson, N., Lowenstein., G., McCafferty, J. (2004) The economics of meaning. *Nordic Journal of Political Economy,* 30:61–75.

Kaplan, G., Schulhofer-Wohl, S. (2018). The changing (dis-) utility of work. *Journal of Economic Perspectives,* 32(3):239–58.

Kay, M., Matuszek, C., Munson, S. A. (2015) Unequal representation and gender stereotypes in image search results for occupations. In Proceedings of the 33rd Annual ACM Conference on Human Factors in Computing Systems (pp. 3819–3828).

Lavetti, K. & Schmutte, I. (2021) Gender Differences in Sorting on Wages and Risk. *Working Paper.*

Le Barbanchon, T., Rathelot, R., Roulet, A. (2021) Gender differences in job search: Trading off commute against wage. *The Quarterly Journal of Economics,* 136(1):381–426.

Lee M., Huang L. (2018) Gender bias, social impact framing, and evaluation of entrepreneurial ventures. *Organization Science* 29(1):1–16.

Levanon A., Grusky D.B. (2016) The persistence of extreme gender segregation in the Twenty-first Century. *American Journal of Sociology,* 122(2): 573–619.

Liben L.S., Bigler R.S. (2002) The developmental course of gender differentiation: conceptualizing, measuring, and evaluating constructs and pathways. Monogr Soc Res Child Dev. 67(2): i-viii, 1–147; discussion 148–83. PMID: 12465575.

Lordan G., Pischke J. (2022) Does Rosie like riveting? Male and female occupational choices. E*conomica,* 89(353): 110–130.

Maestas, N., Mullen, K. J., Powell, D., Von Wachter, T., & Wenger, J. B. (2018). The value of working conditions in the United States and implications for the structure of wages (No. w25204). National Bureau of Economic Research.

Margalit, Y. (2019) Economic insecurity and the causes of populism, reconsidered. *Journal of Economic Perspectives,* 33(4): 152–70.

Martela F., Riekki T.J. (2018) Autonomy, competence, relatedness, and beneficence: A multicultural comparison of the four pathways to meaningful work*, Frontiers in Psychology,* 9–14.

Mas, A., Pallais, A. (2017) Valuing alternative work arrangements, *American Economic Review.* 107(12): 3722–59.

Meier, S., Stutzer A. (2008) Is volunteering rewarding in itself? *Economica*. *75*(297): 39–59.

Morchio, I., Moser, C. (2021) The gender pay gap: Micro sources and macro consequences. SSRN Working Paper.

Niederle, M., Lise, V. (2007) Do women shy away from competition? Do men compete too much? *The Quarterly Journal of Economics,* 122(3):1067–1101.

Nikolova, M., Cnossen, F. (2020) What makes work meaningful and why economists should care about it. *Labour Economics,* 65:101847.

Non, A., Ingrid, R., Andries de, J., Thomas D. (2022) "Mission of the company, prosocial attitudes and job preferences: A discrete choice experiment." *Labour Economics,* 74: 102087.

Pertold-Gebicka, B., Pertold, F., Datta Gupta, N., (2016) Employment adjustments around childbirth, IZA Discussion Papers 9685, Institute of Labor Economics (IZA).

Petrongolo, B., Ronchi, M. (2020) A survey of gender gaps through the lens of the industry structure and local labor markets. CEP Discussion Paper No 1688.

Reuben, E., Sapienza, P., Zingales, L. (2019) Taste for competition and the gender gap among young business professionals. NYU Abu-Dhabi Working Paper # 0031.

Rhodes-Purdy, M., Navarre, R., Utych, S. M. (2021) Populist psychology: economics, culture, and emotions. *The Journal of Politics,* 83(4): 1559–1572.

Rosso, B. D., Dekas, K. H., Wrzesniewski, A. (2010) On the meaning of work: a theoretical integration and review. *Research in Organizational Behavior,* 30: 91–127.

Rudman, Laurie A., Corrine A. M-RaRcusin, Julie., E. P., Sanne, N. (2012) Status incongruity and backlash effects: Defending the gender hierarchy motivates the prejudice against female leaders. *Journal of Experimental Social Psychology,* 48:165–79.

Ryan, R.M. Deci, E.L. (2000) Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist,* 55(1): 68.

Rydgren, J. (Ed.). (2012) Class politics and the radical right. (Routledge, London).

Rydgren, J. (Ed.). (2018) The Oxford handbook of the radical right. Oxford University Press.

Samek, A. (2019). Gender differences in job entry decisions: A university-wide field experiment. *Management Science,* 65(7): 72–3281.

Scroggins, W.A., (2008) Antecedents and outcomes of experienced meaningful work: A person-job fit perspective. *Journal of Business Inquiry,* 7(1): 68–78.

Sendén, M.G, Klysing, A., Lindqvist, A., Renström, E. A. (2019) The (not so) changing man: Dynamic gender stereotypes in Sweden. *Frontiers in Psychology,*10(37):1–17.

Shea, C.T., Hawn O. (2019) Microfoundations of corporate social responsibility and irresponsibility. *Academy of Management Journal,* 62(5):1609–1642.

Shinar, E. H. (1975) Sexual stereotypes of occupations. *Journal of Vocational Behavior,* 7(1), 99–111.

Steger, M. F., Dik, B. J. (2009) If one is looking for meaning in life, does it help to find meaning in work? *Applied Psychology: Health Well Being,* 1, 303–320

Steger, M. F., Dik, B. J., Duffy, R. D. (2012) Measuring meaningful work: The work and meaning inventory (WAMI). *Journal of Career Assessment,* 20, 322–337.

Waldfogel, J. (1997) The effect of children on women's wages. *American Sociological Review,* 209–217.

Wiswall, M., Zafar, B. (2017) Preference for the workplace, investment in human capital, and gender. *The Quarterly Journal of Economics,* 133(1): 457–507.

Weinstein, N., Ryan, R. M., Deci, E. L. (2012) Motivation, meaning, and wellness: a self-determination perspective on the creation and internalization of personal meanings and life goals, in *The Human Quest for Meaning: Theories, Research, and Applications,* 2nd Edn, ed. P. T. P. Wong (New York, NY: Routledge), 81–106.

Wrzesniewski, A. (2003) "Finding positive meaning in work," in Positive Organizational Scholarship: Foundations of a New Discipline, ed. J. E. Dutton (San Francisco, CA: Berrett-Koehler), 296–308.

Wrzesniewski, A., Dutton, J.E. (2001) Crafting a job: Revisioning employees as active crafters of their work. *Academy of Management Review,* 26(2): 179–201.

Web Appendix

Table W1. Survey Questions Used to Create Pathway Variables for Meaningful Work

Pathway Variable	**Survey Question(s)**	**Response Categories**
Autonomy	Can you, in general, determine your own work hours within certain boundaries?	1=No, I usually cannot decide my own work times 2=Yes, I have relatively free work times in other ways 3= Yes, I have flex time (i.e., work times that do not start or end on exact times)
	Can you decide on your own pace of work?	1=No, not at all 2=About 3/4 of the time 3=A little (perhaps 1/10 of the time) 4=About 1/4 of the time 5=Half the time 6=Almost all the time
	Do you feel that your job is non-autonomous and unfree or autonomous and free?	1=Constrained and unfree, agree completely 2=Constrained and unfree, agree somewhat 3=Neither nor 4=Unconstrained and free, agree somewhat 5=Unconstrained and free, agree completely
	Does it happen that you partake in decisions on the structure of your work (for example what will be done, how it will be done, or which people will do the work together with you)?	1=Never 2=Usually not 3=Most of the time 4=Always
Competence	Do you feel that the tasks involved in your job are too difficult, or too easy, for you?	1=Entirely too hard OR entirely too easy 2=Too hard OR too easy 3=Neither nor
Relatedness	Does it happen that your manager shows appreciation for something that you did?	1= Not at all, rarely in the last 3 months 2= A couple of days per month (1 day out of 10) 3=A couple of days per week (1 day out of 5) 4= A couple of days per week (1 day out of 2) 5= Every day
	Does it happen that other people show appreciation for something that you did? (e.g., colleagues, patients, customers, clients)?	
	Are you involved in any form of conflict or quarrel with supervisors/managers at work?	1= Not at all, rarely in the last 12 months 2= At some point in the last 12 months 3= A couple of times in the last 3 months 4=A couple of days per month (1 day out of 10) 5= One day per week (1 day out of 5) 6= A couple of days per week (1 day out of 2) 7= Every day
	Are you involved in any form of conflict or quarrel with colleagues at work?	

Notes: The table lists the authors' own translations of survey questions and response categories used to create three pathway variables for meaningful work.

Table W2. Selected O'NET Job Traits for Beneficence

O'NET Indicator	Description and examples of high-scoring occupations
Concern for others	Being sensitive to others' needs and feelings and being understanding and helpful on the job. Research, evaluate, and establish public policy concerning the origins of humans; their physical, social, linguistic, and cultural development; and their behavior, as well as the cultures, organizations, and institutions they have created etc. Examples: Anthropologists, behavioral scientists, researcher, health educator.
Social perceptiveness	Being aware of others' reactions and understanding why they react as they do. Provide social services and assistance to improve the social and psychological functioning of children and their families and to maximize the family well-being and the academic functioning of children. May assist parents, arrange adoptions, or find foster homes for children. In schools, they address such problems as teenage pregnancy, misbehavior, and truancy. May also advise teachers etc. Examples: social workers, child protective services, family and student counseling, psychologists.
Assisting and caring for others	Providing personal assistance, medical attention, emotional support, or other personal care to others such as coworkers, customers, or patients. Assist in providing client services in a wide variety of fields, such as psychology, rehabilitation, or social work, including support for families. May assist social workers with developing, organizing, and conducting programs to prevent and resolve problems relevant to substance abuse, human relationships, dependent care, etc. Examples: social workers, drug and alcohol treatment specialists, and substance abuse counselors.
Service orientation	Actively looking for ways to help people. Teach occupational, career and technical, or vocational subjects in public or private schools at the middle, intermediate, or junior high level. Directly supervise and coordinate activities of workers who prepare and serving food etc. Examples: Teachers, educators, sales staff in retail, real estate, tourist agents, waiters.

Notes: Descriptions from the online documentation of the O'NET database at https://www.onetonline.org/.

Table W3. Robustness Analysis for Table 2

DV: Meaningful Work (Std. Dev)	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Autonomy	0.22***				0.25***	0.23***	0.22***
	(0.01)				(0.01)	(0.01)	(0.01)
Competence		0.15***			0.11***	0.11***	0.11***
		(0.01)			(0.01)	(0.01)	(0.01)
Relatedness			0.18***		0.13***	0.13***	0.14***
			(0.01)		(0.01)	(0.01)	(0.01)
Beneficence				0.27***	0.31***	0.33***	0.30***
				(0.01)	(0.01)	(0.01)	(0.01)
Log(Wage)						0.22***	0.23***
						(0.02)	(0.02)
Demographics controls							x
Year FE							x
Observations	28,549	28,549	28,549	28,549	28,549	28,549	28,549

Notes: Replication of Table 3 for observations where all variables used in the table are non-missing. The table shows estimates from regressing meaning at work in standard deviations on four pathway variables, also in standard deviations, and controls. Demographics controls are education level (3 dummies), age (3 dummies) and region of birth (2 dummies). Standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1.

Table W4. Regression Estimates Corresponding to Figure 1

	Job Satisfaction			Leave Considerations			Workplace Transition within 3 Years		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Sample: Men									
Meaningful Work	**0.524**	**0.521**	**0.515**	**-0.067**	**-0.065**	**-0.060**	**-0.016**	**-0.012**	**-0.008**
	(0.004)	(0.004)	(0.006)	(0.002)	(0.002)	(0.004)	(0.002)	(0.002)	(0.003)
	54,423	54,419	51,010	31,585	31,583	29,888	39,994	39,990	39,994
Sample: Women									
Meaningful Work	**0.474**	**0.48**	**0.469**	**-0.049**	**-0.052**	**-0.051**	**-0.028**	**-0.025**	**-0.01**
	(0.004)	(0.004)	(0.006)	(0.002)	(0.002)	(0.004)	(0.002)	(0.002)	(0.003)
Observations	57,993	57,993	53,967	34,823	34,823	32,751	43,338	43,338	43,338
Demographics Controls and Year FE		x			x		x		
Workplace FE			x			x			x

Notes: Standard errors in parentheses. **Bold text** indicates statistical significance at the 1-percent level.

Table W5. The Gender Gap in Meaningful Work and the Occupation's Share of Women

DV: Meaningful Work (Std. Dev)	(1)	(2)	(3)	(4)	(5)	(6)
Woman	0.26***	0.34***	0.26***	0.24***	0.05***	0.10***
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Autonomy		0.26***				0.26***
		(0.00)				(0.00)
Competence			0.17***			0.12***
			(0.00)			(0.00)
Relatedness				0.17***		0.12***
				(0.00)		(0.00)
Beneficence					0.25***	0.27***
					(0.01)	(0.01)
Observations	51,269	51,918	50,341	51,257	48,898	51,269

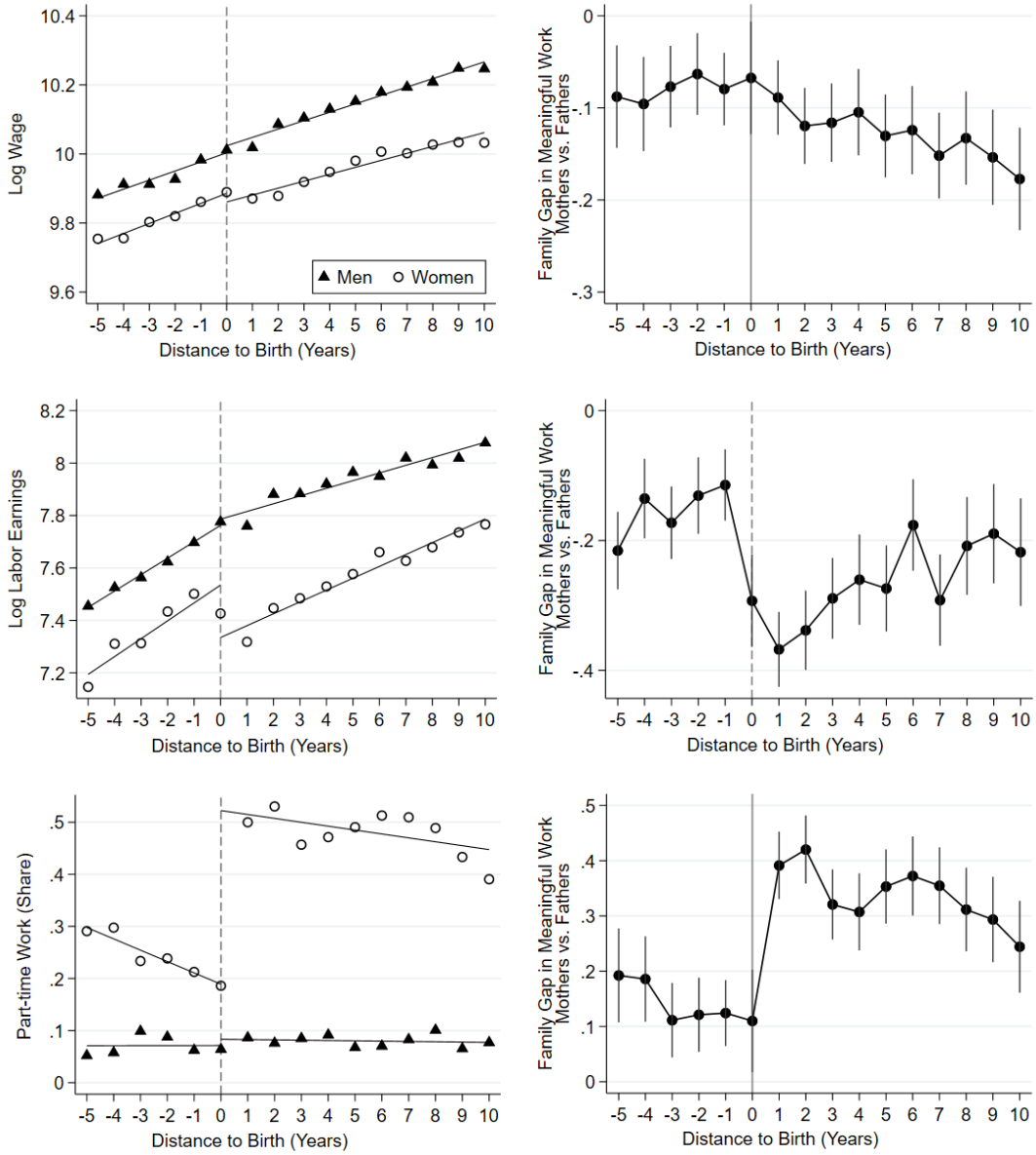
Notes: Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1. Data is pooled cross-sections of the Swedish Work Environment Survey (2003–2015). Standard errors are clustered at the level of the 4-digit occupation code.

Table W6. Within-Occupation Gender Gaps in Meaningful Work by the Female–Male Gender Stereotype Index of Occupations

DV: Meaningful work (Std. dev)	(1)	(2)
Female–Male Gender Stereotype Index *female	0.11***	0.12***
	(0.03)	(0.03)
Demographic controls	x	
Year FE		
Occupation FE		
	x	x
Observations	x	x
R-squared	0.10	0.10

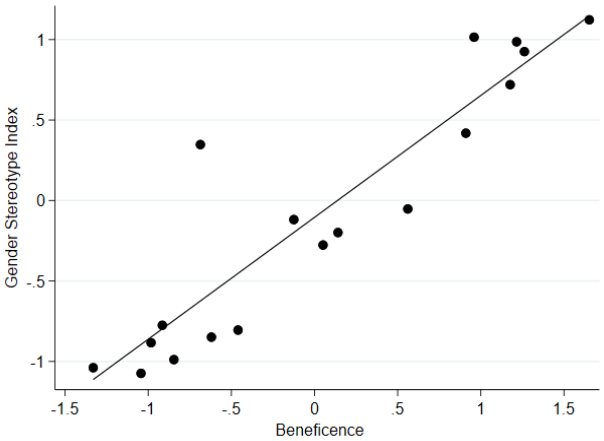
Notes: The table shows estimates for the interaction effect between the dummy variable for female sex at birth and each index listed in the top of the table and estimated with regression equation (2). Standard errors clustered at the 4-digit occupation level in parentheses.

Figure W1. Wages, Earnings, and Part-Time Work at First Parenthood



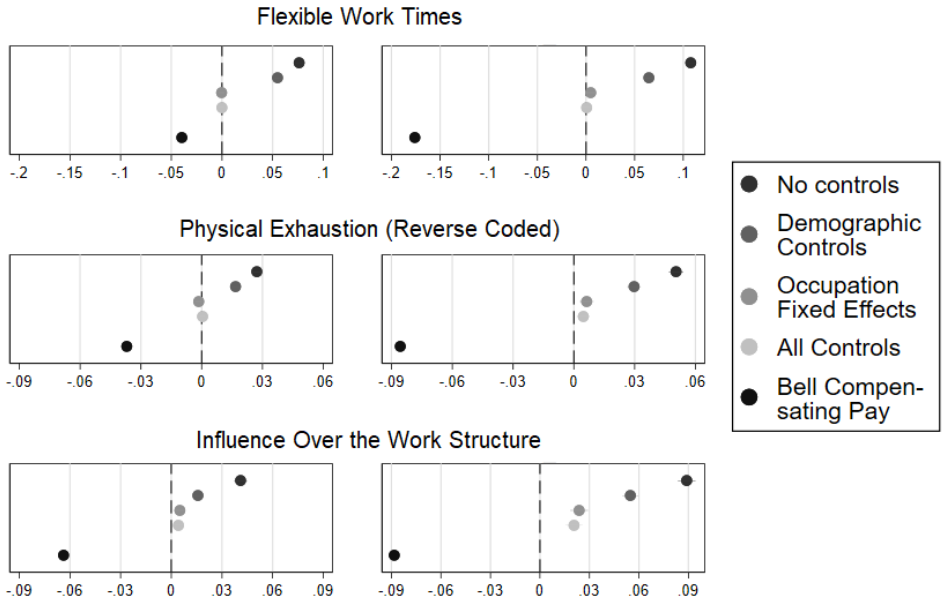
Notes: N Wage Regression = 8,901; N Labor Earnings = 20,766; N Part-time Regression = 8,804.

Figure W2. Correlation between Beneficence and the Female–Male Gender Stereotype Index for Occupations



Notes: Both variables are measured in standard deviations. For detailed information about the variables, see section 2.2. The female–male stereotype index takes higher values for female-stereotyped jobs and lower for male-stereotyped ones.

Figure W3. Compensating Pay for Working Conditions



Notes: See notes for Figure 9. Flexible work time is standardized responses to the question "Can you, in general, determine your own work hours within certain boundaries?" Physical Exhaustion is the question "How often does it happen that you are physically exhausted after work." Influence over the work structure is measured by the question "Does it happen that you partake in decisions on the structure of your work (for example what will be done, how it will be done, or which people will do the work together with you)?"