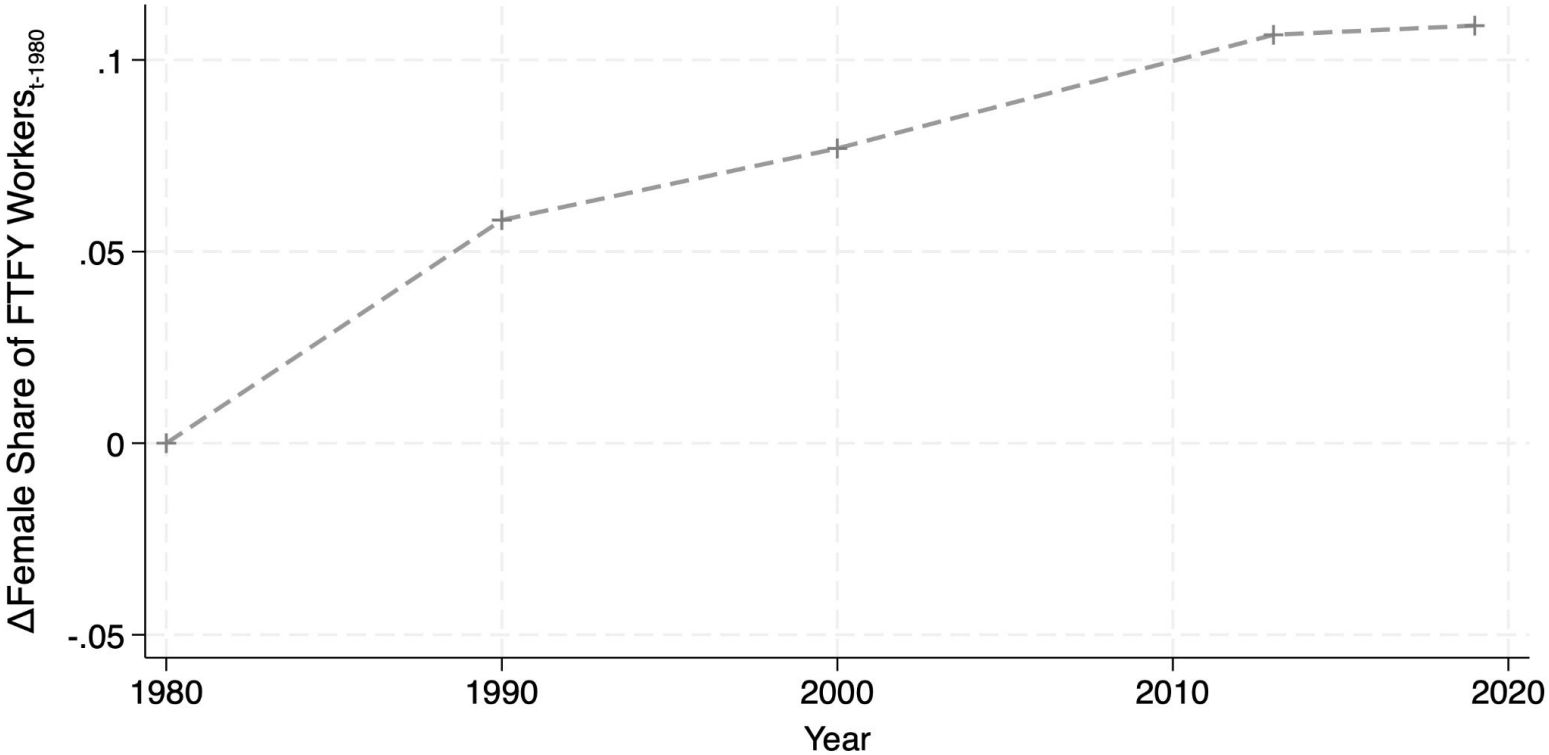
Inflexibility, Social Skills, and the Allocation of Talent

Savannah Noray

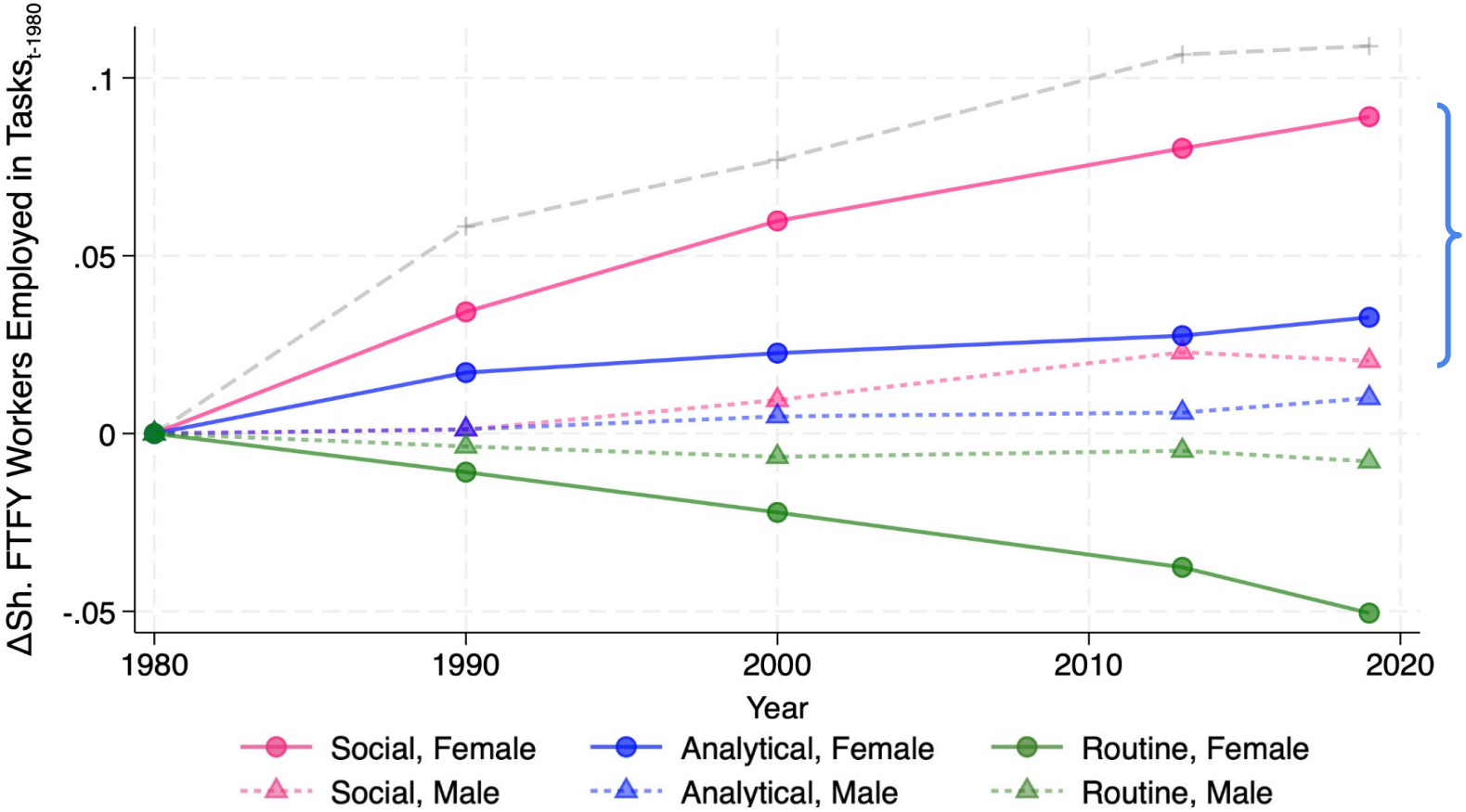
July 25, 2023

Since 1980, composition of workforce changed dramatically



Source: Census/ACS. Graph depicts change in share of FTFY (≥40 weeks, ≥35 hrs per week, positive annual earnings) workers who are female relative to 1980 (value in current year minus the value in 1980).

At the same time, composition of tasks shifted



Source: Census/ACS, O*NET 2013. Faded gray line depicts change in share of FTFY (≥40 weeks, ≥35 hrs per week, positive annual earnings) workers who are female relative to 1980. Other lines represent the change in the share of FTFY female or male workers employed in social/analytical/routine tasks relative to 1980, as defined by Deming (2017). Share is calculated as employment share in a given occ multiplied by the O*NET task measure (fixed at 2013), rescaled to vary from 0 to 1.

Social tasks may have unique features

- "Social" ~ ability to observe behavior, infer mental states, react appropriately

Social tasks may:

- lead to higher returns in cultural similarity of workers
  - Identity groups may communicate differently → could cause communication frictions
- be correlated with (or cause) lower substitutability b/w workers
  - E.g. work w/ clients → relationship-specific capital accrues → higher returns to continuity
- strongly favor women's absolute/comparative advantage
  - Women tend to be more skilled in decoding nonverbal cues & "reading the room" (Hall, 1978)

→ As both labor market minorities & workers of the "second shift", how do women's unique constraints interact with the above features?

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See Noray & Noray (2023)

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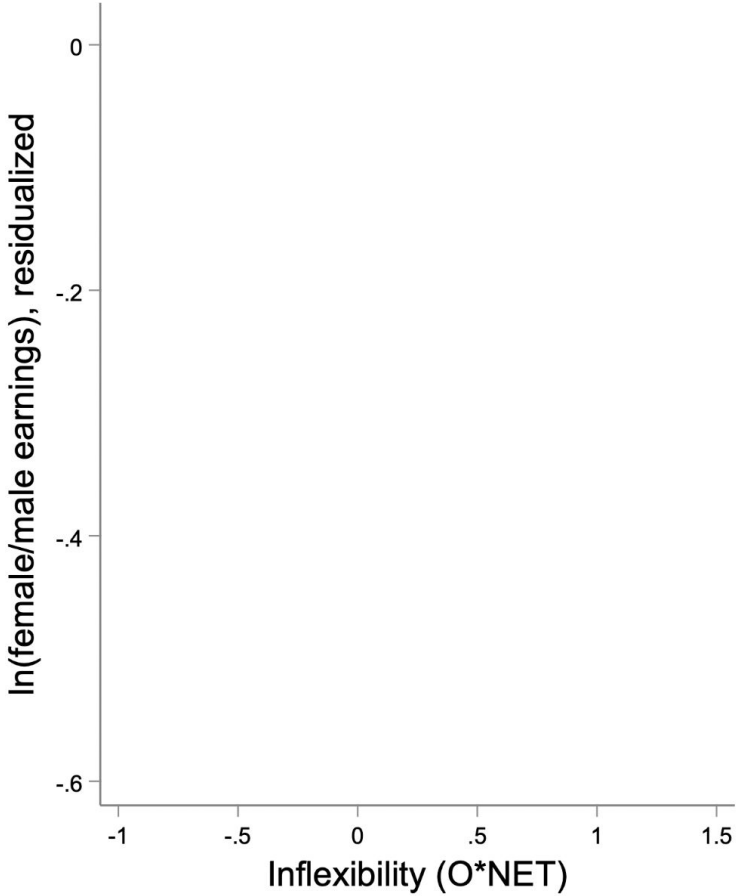
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Today's focus

→ As both labor market minorities & workers of the "second shift", how do women's unique constraints interact with the above features?

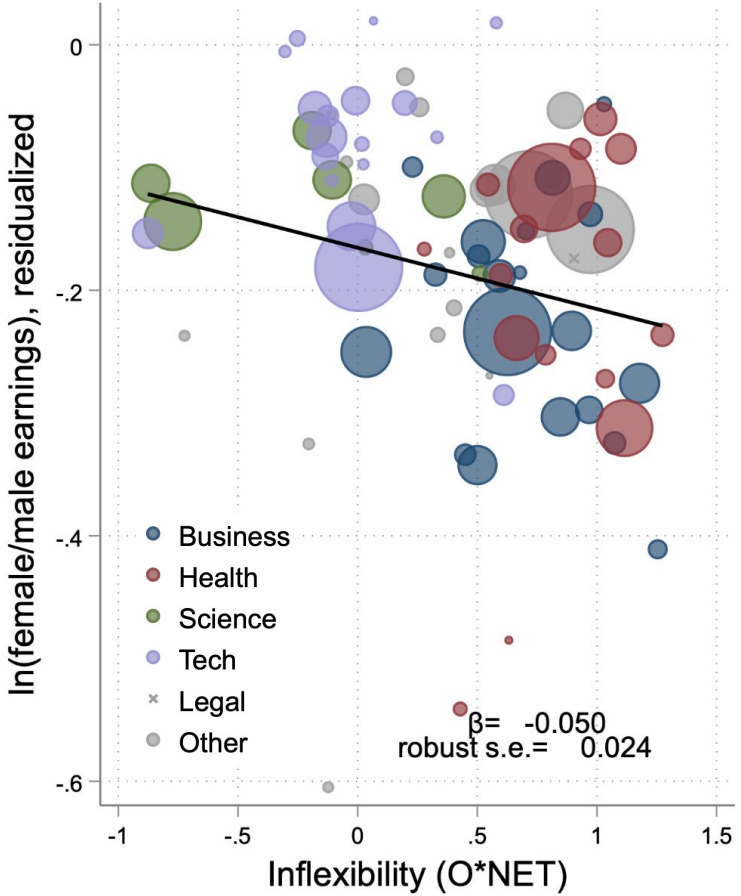
Motivation

Fact: college gender wage gap *increasing* in inflexibility…



Source: ACS 2015-2019. Each observation is a Dorn-Deming-Hanson (3-digit) occupation. Left panel is replication of Goldin (2014). Sample is college-educated, FTFY workers aged 25-64. Occs ≥75th percentile in male earnings & with at least 25 men and 25 women among sample displayed (80 occs). Teachers not included. Observations are weighted by number employed (within the sample).

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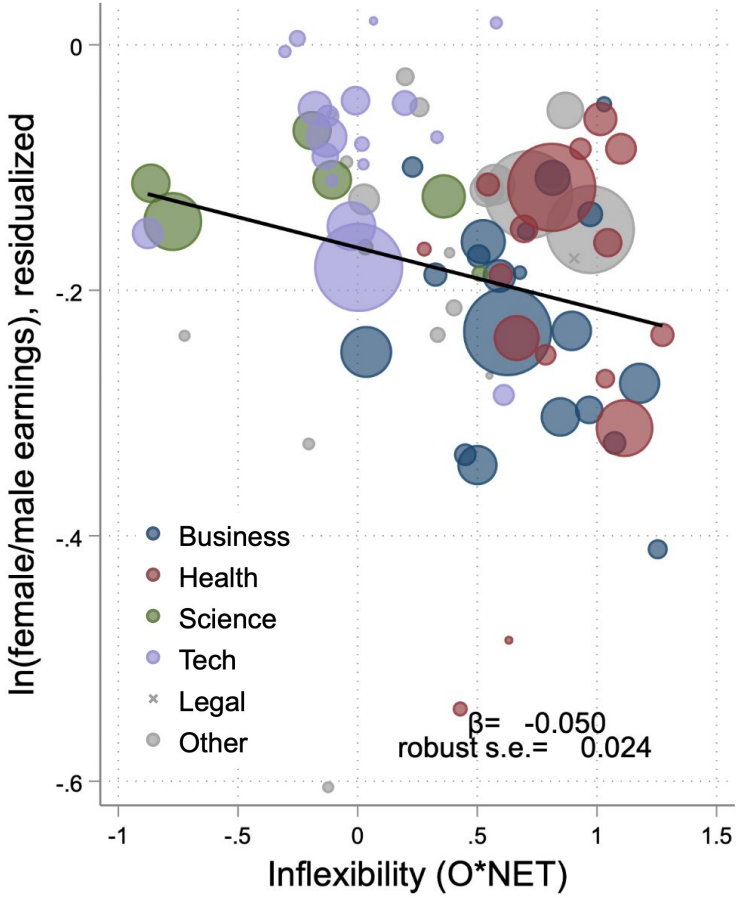


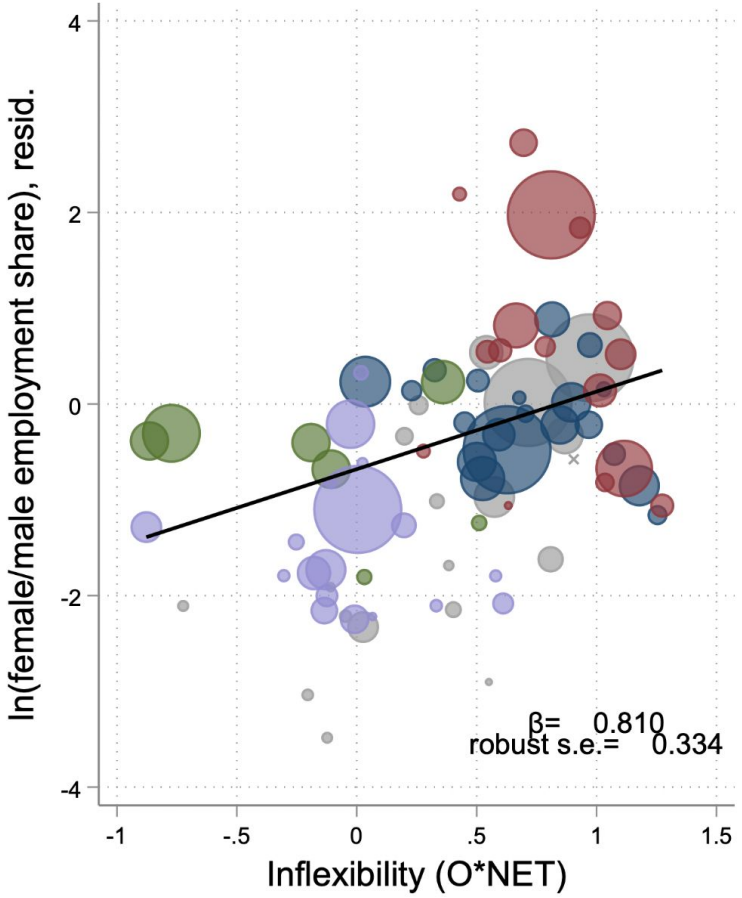
Explanation (Goldin, 2014):

- Women have higher WTP for flexibility
- Cost of providing flexibility amenity varies by occ
- Within "inflexible" occs, women pay more to accommodate career interruptions

Source: ACS 2015-2019. Each observation is a Dorn-Deming-Hanson (3-digit) occupation. Left panel is replication of Goldin (2014). Sample is college-educated, FTFY workers aged 25-64. Occs ≥75th percentile in male earnings & with at least 25 men and 25 women among sample displayed (80 occs). Teachers not included. Observations are weighted by number employed (within the sample).

But, college women *more* likely to sort into inflexible occs





Source: ACS 2015-2019. Each observation is a Dorn-Deming-Hanson (3-digit) occupation. Left panel is replication of Goldin (2014). Sample is college-educated, FTFY workers aged 25-64. Occs ≥75th percentile in male earnings & with at least 25 men and 25 women among sample displayed (80 occs). Teachers not included. Observations are weighted by number employed (within the sample).

What could jointly explain these patterns?

Hypothesis:

- **1)** On avg, women relatively more skilled in *social perceptiveness*
  - Social perceptiveness = being aware of others' reactions & understanding why they react
  - Example occs: therapists, managers, social workers
- **2)** Flexibility more costly in relationship-intensive jobs
  - E.g. building relationships with clients → more likely to be "on call" & work irregular/long hrs
  - Example occs: CEOs, lawyers, managers
- **3)** Thus, sorting/wage gap consequences of flexibility trade-off is amplified
  - OVB biases relationships in previous graphs towards ∞

So what? If true, then **women are between a rock and a hard place**

- Capitalizing on their talent → paying more for desired workplace amenities
- E.g., one implication: if could costlessly remove inflex. from social occs, then
  - Even more women would sort into these occs
  - Conditional on sorting into these occs, the within-occ wage gap would be smaller

This project

- **Model**: highlights tradeoff b/w flexibility amenity and skill requirements
  - To generate testable predictions for sorting/wage gaps, nest w/in Roy model (Hsieh et al., 2019)
  - **Key element**: social perceptiveness demands correlate with cost of flexibility
  - **Key insight**: women may still sort into inflexible occs if relative skill advantage large enough, which, in turn, may mute gender wage gaps
- **Descriptive analysis**: test predictions (ACS, O*NET)
  - Result: slope of wage gap WRT inflexibility *increases* when controlling for social
- **Additional analysis *(working on)***:
  - Microdata on skills, mechanisms (NLSY97, AddHealth)
  - Natural experiment building on Wasserman (2023)

Contribution to the literature

- Women prefer & are WTP for flexibility, broadly defined
  - *Seminal work:* Goldin & Katz (2011), Goldin (2014), Goldin & Katz (2016)
  - *Additional evidence*: e.g. Flabbi & Moro (2012), Mas & Pallais (2017), Wiswall & Zafar (2018), Cortes & Pan (2019), Wasserman (2023)

  → **Gender equality aside, are there *productivity gains* to lowering price of flexibility?**

- Constraints on occ choice can hinder sorting on comp. adv. and, ultimately, productivity
  - Sorting frictions (human capital barriers & discrimination) constrained GDP growth (Hsieh et al., 2019)
  - Evidence connecting frictions (discrimination) to task content (contact tasks) (Hurst et al., 2023)

  → **But, what if group facing constraint is esp. skilled in the tasks that are demanded *in those occs*?**

- Newer literature explores how selection/skills interact with flexibility story
  - Women's aversion to occs w/ long hrs is a quantitatively important driver of gaps (Erosa et al., 2022)
    - Roy selection *mutes* the gender wage gap within such occs

  → ***Avg skill diffs* can mute (or amplify) these wage gaps & seem empirically important**
  - Women's comp. adv. in Abstract tasks is offset by comp. disadv. in long/unusual hours, which leads to "mis-match" & widens across-occ wage gap ([Prelim.] Juhn & Rubinstein, 2022)

  → **Women's comp. adv. in social tasks offsets distaste for inflexibility & narrows the within-occ wage gap**

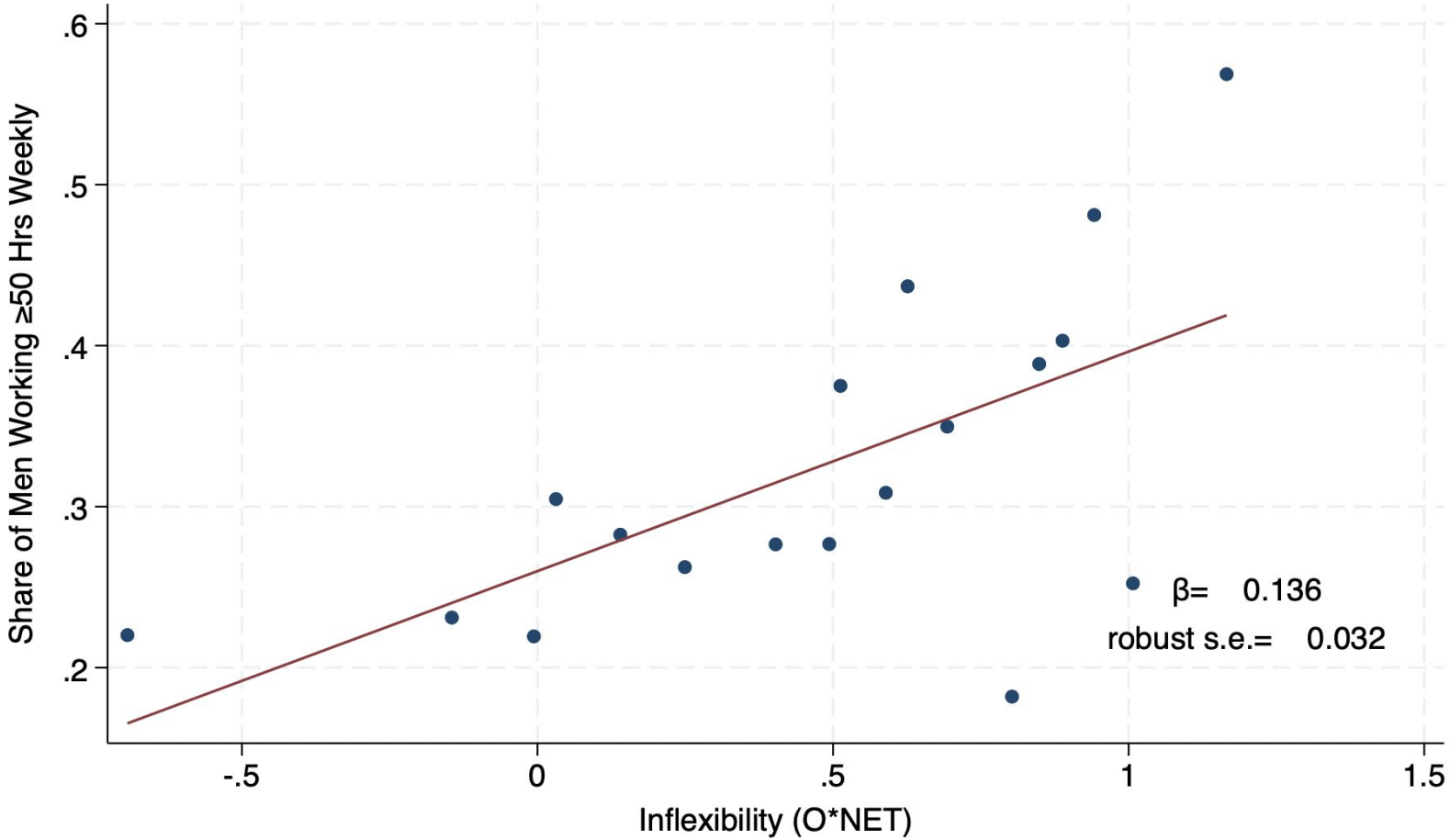
Preview of Findings

Inflexibility: O*NET Work Context/Activities Modules *(Goldin, 2014)*

Dimension	Survey question	Concept
Time pressure	How often does this job require the worker to meet strict deadlines?	Time-sensitivity
Contact with others	How much does this job require the worker to be in contact with others (face-to-face, by telephone, or otherwise) in order to perform it?	Necessity of working working *with* people
Establishing & maintaining interpersonal relationships	Developing constructive and cooperative working relationships with others, and maintaining them over time	
Unstructured work	To what extent is this job structured for the worker, rather than allowing the worker to determine tasks, priorities, and goals?	Level of worker discretion
Freedom to make decisions	How much decision making freedom, without supervision, does the job offer?	

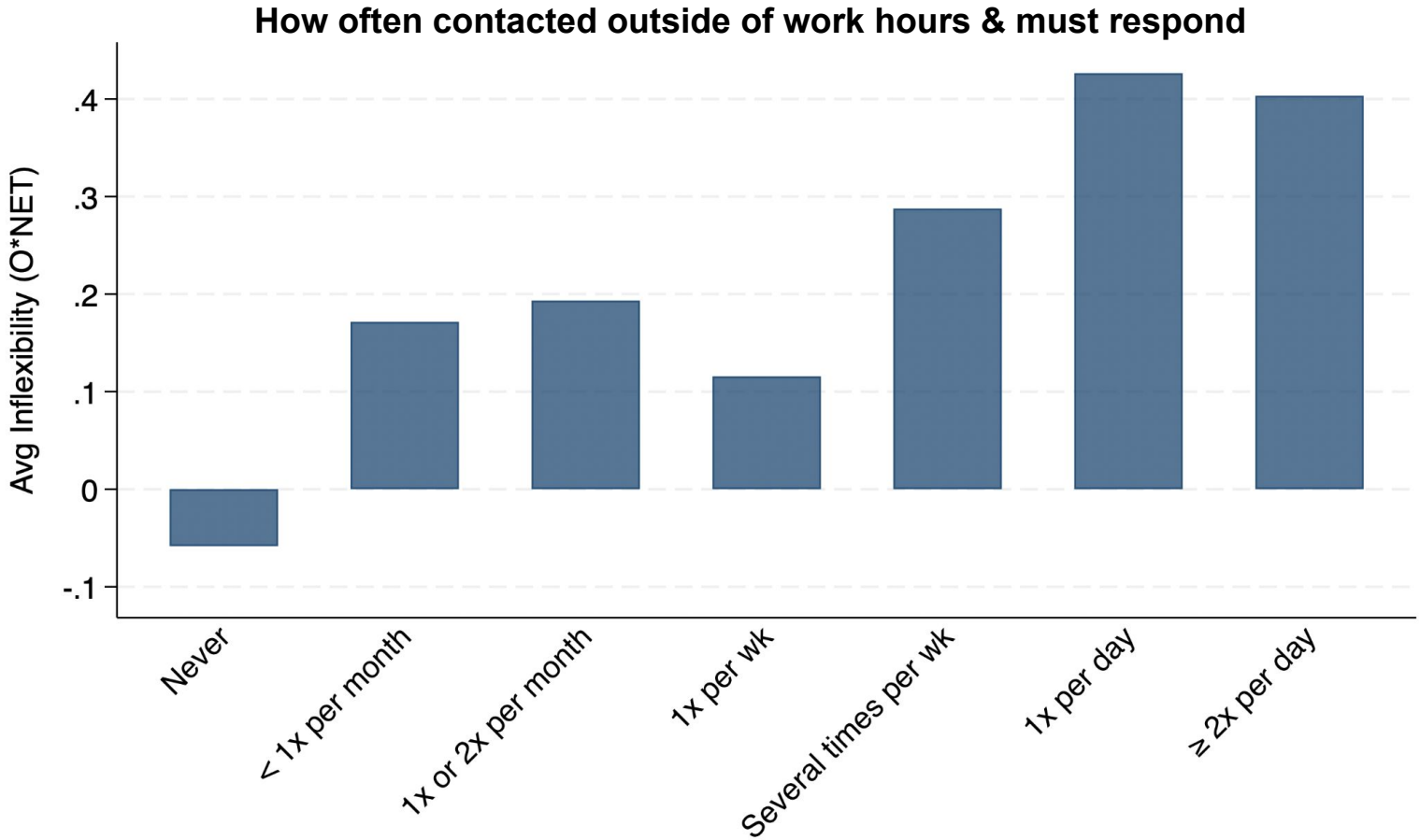
Illustrative occs: Lawyers, CEO's, ad agents, physical therapists = relatively inflexible. Waiters, cashiers, machine operators, computer programmers, scientists = relatively flexible.

Validation: capturing long hours



Source: ACS 2015-2019, O*NET 2013. Figure plots a binscatter of share of men who report usually working at least 50 hours per week against the inflexibility measure for 3-digit occupations. Observations weighted by number of college educated workers employed.

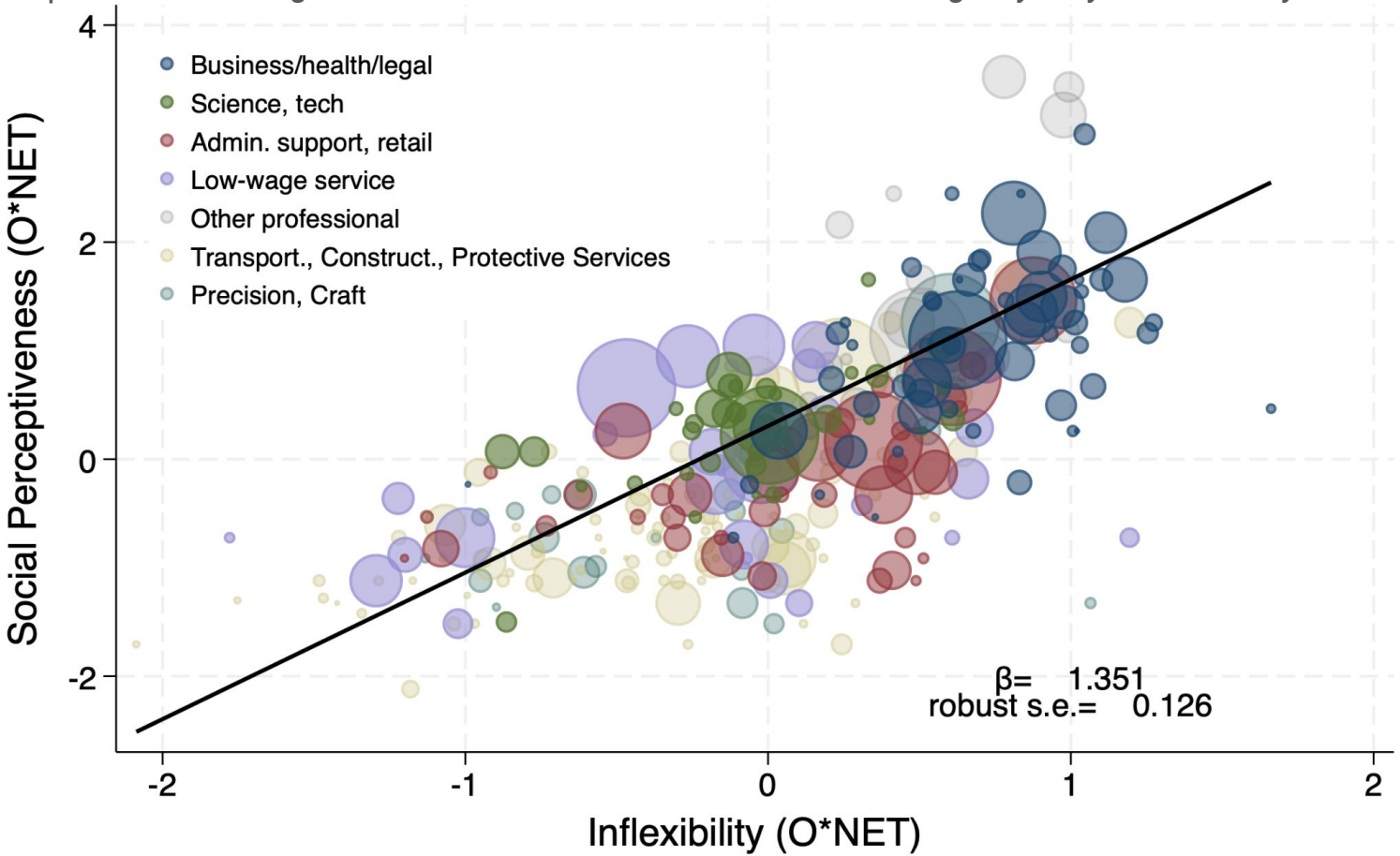
Validation: capturing time demands



Source: GSS 2014. Graph depicts average inflexibility (O*NET measure) across workers' answers to the question "Some workers must respond to coworkers, supervisors, managers, customers, or clients about work-related matters when they are not working. These contacts may be by phone, text, instant message, email, etc. How often are you contacted about work-related matters when you are not working?"

Inflexibility highly correlated with ***social perceptiveness***

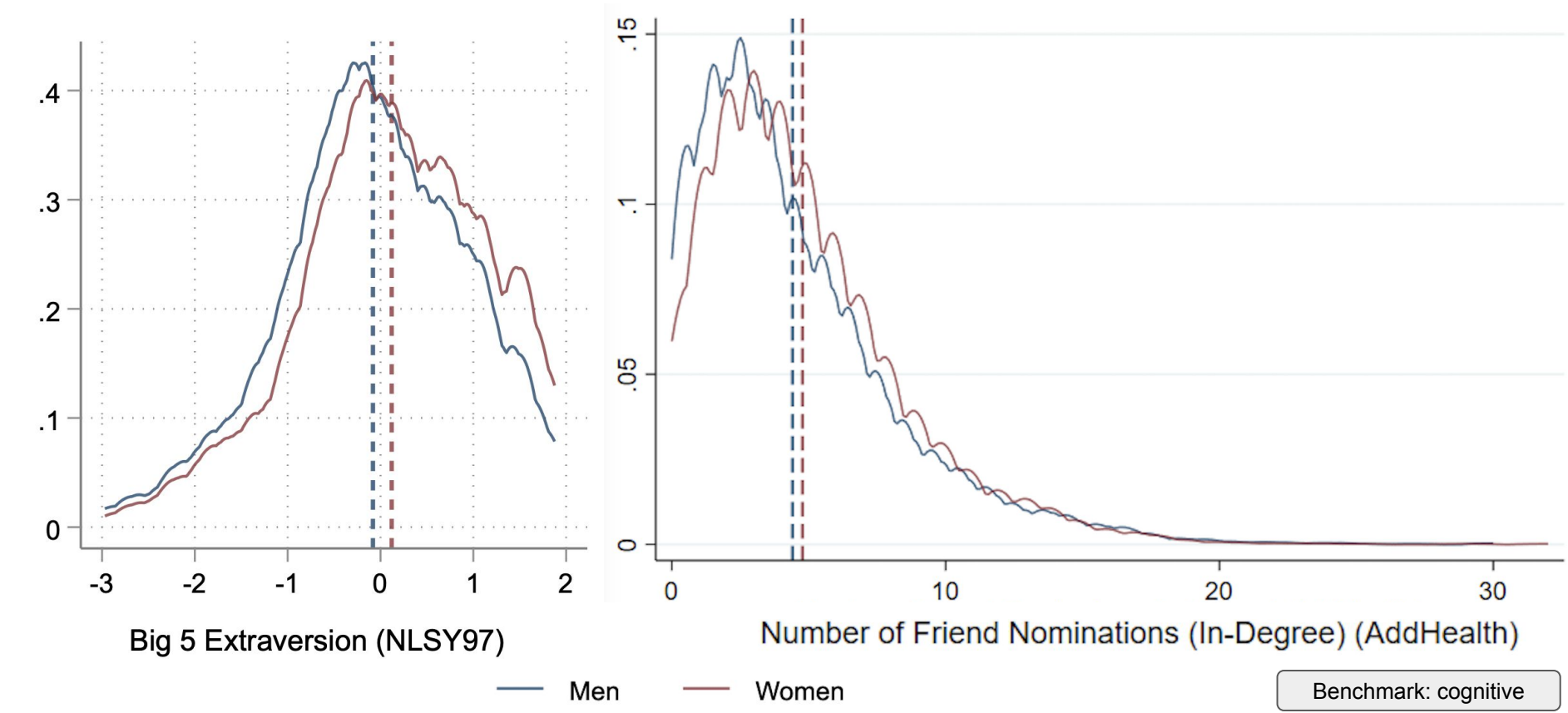
Social Perceptiveness: *"Being aware of others' reactions and understanding why they react as they do."*



Illustrative occs labelled

Source: ACS 2015-2019, O*NET 2013. Observations are 311 3-digit occupations and are weighted by number of college educated workers employed. Coefficient (robust standard errors) is 1.173 (0.391) when limiting to top male earner occs as in first graph.

Women relatively more skilled in social skills, broadly defined



Benchmark: cognitive

Source: NLSY97 (left) and AddHealth (right). Graphs plot kernel density plots for measures of social skills: Big 5 Extraversion (as in Deming (2017)) on the left and number of others who nominated you as their friend in middle/high school (as in Lleras-Muney et al (2023)). Dotted lines indicate the average value. For additional evidence, see work showing women score higher on the Reading the Mind in the Eyes test across countries and across age (Greenberg et al 2023).

Despite earning less, women are *more* likely to sort into inflexible jobs

	Women's relative sorting, $\log(p_{ow}/p_{om})$	Women's relative wages, $\log(w\bar{a}ge_{ow}/w\bar{a}ge_{om})$
	(1)	(4)
Inflexibility$_o$	0.543**	-0.033*
	(0.239)	(0.018)
Social Perceptiveness$_o$		
Obs.	311	311
R-squared	0.05	0.03
Other Task Controls		

Source: ACS 2015-2019 and O*NET 2013. Observations are 3-digit occupation codes. Sample is FTFY college-educated workers, and observations are weighted by (college-educated) employment. Columns 1-3 regress the log(fraction women sorting into an occ / fraction men sorting into an occ) on the inflexibility measure, social perceptiveness, and other task controls (routine intensity, analytical intensity). Columns 4-6 regress the log(women's wages / men's wages) on the same set of independent variables. Women's relative wages obtained from the coefficient on the interaction term between a female dummy and occupation FE from a regression of log earnings on quartic in age, education, race dummies, log weeks worked, log usual hours worked, and occ FE.

Similar when controlling for analytical, routine

	Women's relative sorting, $\log(p_{ow}/p_{om})$		Women's relative wages, $\log(w\bar{a}ge_{ow}/w\bar{a}ge_{om})$	
	(1)	(2)	(4)	(5)
Inflexibility$_o$	0.543**	0.552**	-0.033*	-0.043**
	(0.239)	(0.220)	(0.018)	(0.017)
Social Perceptiveness$_o$				
Obs.	311	311	311	311
R-squared	0.05	0.13	0.03	0.17
Other Task Controls		X		X

Source: ACS 2015-2019 and O*NET 2013. Observations are 3-digit occupation codes. Sample is FTFY college-educated workers, and observations are weighted by (college-educated) employment. Columns 1-3 regress the log(fraction women sorting into an occ / fraction men sorting into an occ) on the inflexibility measure, social perceptiveness, and other task controls (routine intensity, analytical intensity). Columns 4-6 regress the log(women's wages / men's wages) on the same set of independent variables. Women's relative wages obtained from the coefficient on the interaction term between a female dummy and occupation FE from a regression of log earnings on quartic in age, education, race dummies, log weeks worked, log usual hours worked, and occ FE.

Sorting reverses once controlling for social

	Women's relative sorting, $\log(p_{ow}/p_{om})$			Women's relative wages, $\log(w\bar{a}ge_{ow}/w\bar{a}ge_{om})$	
	(1)	(2)	(3)	(4)	(5)
Inflexibility$_o$	0.543**	0.552**	-0.157	-0.033*	-0.043**
	(0.239)	(0.220)	(0.250)	(0.018)	(0.017)
Social Perceptiveness$_o$			0.555***		
			(0.185)		
Obs.	311	311	311	311	311
R-squared	0.05	0.13	0.21	0.03	0.17
Other Task Controls		X	X		X

→ *Are women **BETTER** at social jobs or do they **LIKE** them more? Wage predictions help adjudicate…*

Source: ACS 2015-2019 and O*NET 2013. Observations are 3-digit occupation codes. Sample is FTFY college-educated workers, and observations are weighted by (college-educated) employment. Columns 1-3 regress the log(fraction women sorting into an occ / fraction men sorting into an occ) on the inflexibility measure, social perceptiveness, and other task controls (routine intensity, analytical intensity). Columns 4-6 regress the log(women's wages / men's wages) on the same set of independent variables. Women's relative wages obtained from the coefficient on the interaction term between a female dummy and occupation FE from a regression of log earnings on quartic in age, education, race dummies, log weeks worked, log usual hours worked, and occ FE.

Slope of wage gap wrt inflexibility *doubles*

	Women's relative sorting, $\log(p_{ow}/p_{om})$			Women's relative wages, $\log(w\bar{a}ge_{ow}/w\bar{a}ge_{om})$		
	(1)	(2)	(3)	(4)	(5)	(6)
Inflexibility$_o$	0.543**	0.552**	-0.157	-0.033*	-0.043**	-0.087***
	(0.239)	(0.220)	(0.250)	(0.018)	(0.017)	(0.021)
Social Perceptiveness$_o$			0.555***			0.034***
			(0.185)			(0.010)
Obs.	311	311	311	311	311	311
R-squared	0.05	0.13	0.21	0.03	0.17	0.21
Other Task Controls		X	X		X	X

→ *Consistent with women being comparatively **BETTER** at social jobs*

→ *Benchmark: avg within-occ gender wage gap is **-0.16 log points** (85 cents to the male dollar)*

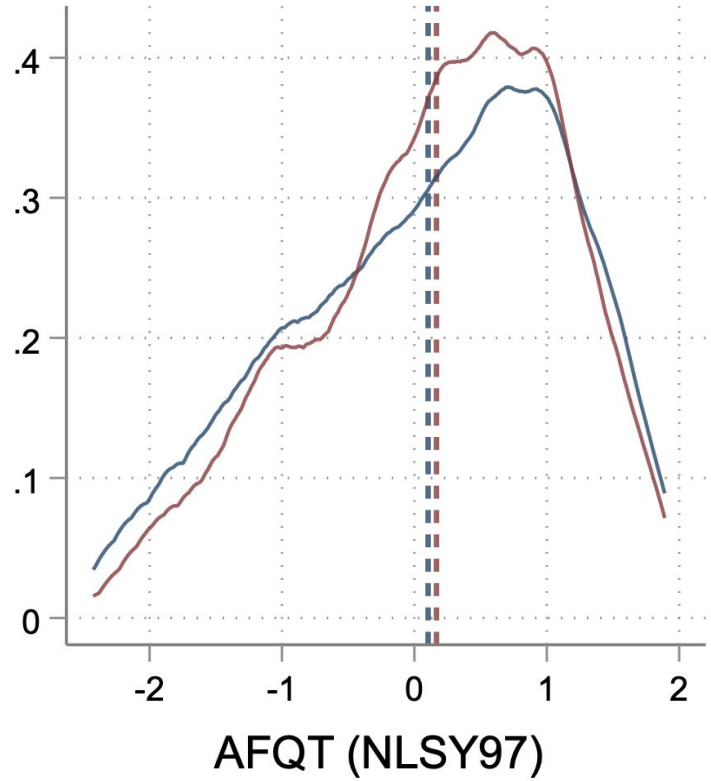
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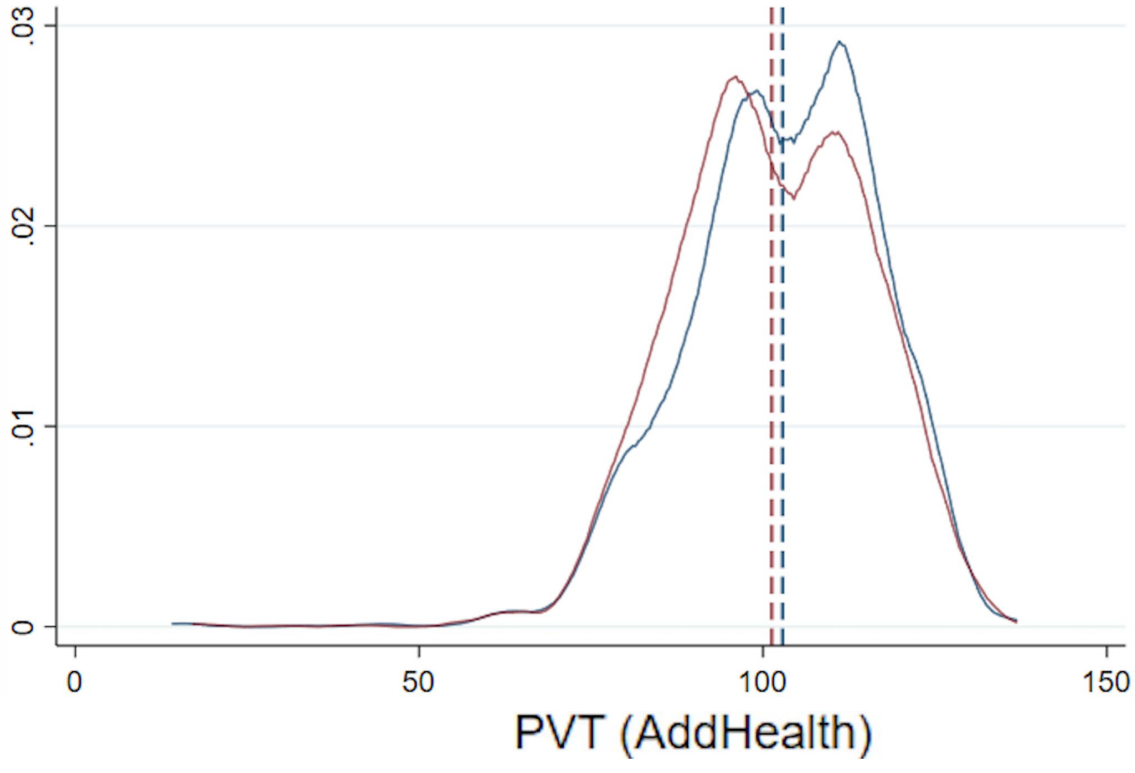
Remaining questions

- Is inflexibility a binding constraint on sorting into social occs?
  - Use Wasserman (2023) variation to unpack in causal way
  - Leverage claims data to evaluate heterogeneity by patient-relationship-intensity
- What is constraining firms from capturing additional talent? Technology?
- Are there other dimensions of social skills that matter for this?
  - Deming (2017): coordination, persuasion, negotiation
  - Additional variables in O*NET: teaching, service
- How do one's social skills impact marriage market and fertility? Does this mute/worsen consequences of this tradeoff?

Appendix

Pattern unique relative to other dimensions of ability





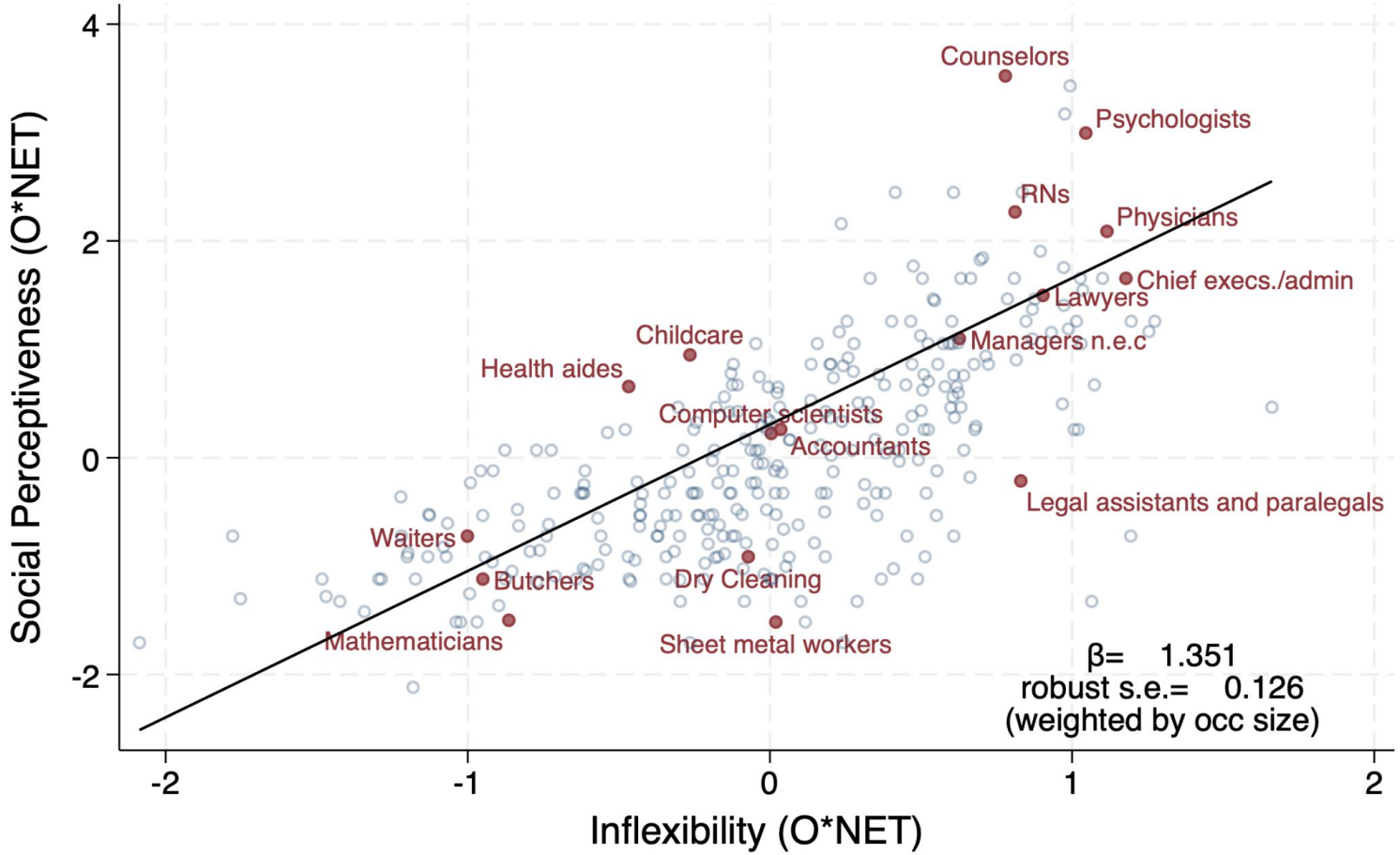
Men Women

Back

Source: NLSY97 (left) and AddHealth (right). Graphs plot kernel density plots for measures of cognitive skills: Armed Forces Qualifying Test (as in, e.g., Deming (2017)) on the left and the Picture Vocabulary Test score (as in Lleras-Muney et al (2023)). Dotted lines indicate the average value.

Inflexibility highly correlated with ***social perceptiveness***

Social Perceptiveness: *"Being aware of others' reactions and understanding why they react as they do."*



Back

Source: ACS 2015-2019, O*NET 2013. Illustrative occs labelled. Observations weighted by number of college educated workers employed.

↑ social jobs ⇒ systemically disadvantage cultural minorities?

- Communication norms may differ across cultural groups
  - **Culture** ~ group-specific rules and heuristics for dealing with human interaction (Nunn, 2018)
    - Verbal or physical
    - Explicit or tacit
- These differences could lead to communication frictions across cultures
- Implication: cultural homogeneity more valuable in social jobs
- Result: smaller cultural groups will face “systemic disadvantage” in labor markets
- Research question: do cultural minorities have lower access to increasingly social-intensive work?
  - Focus: Latin American immigrants, black ppl, & women
- What we do:
  - Build model where cultural similarity reduces communication frictions
  - Micro predictions: evaluate skill-based sorting by speech style based on audio samples (NLSY)
  - Macro predictions: exploit social skill demand shocks & heterogeneity in minority presence (Census, O*NET)
  - ***…see Noray & Noray (2023) for details!***

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