Increasing Labor Demand for Workers with a Criminal Record

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Motivation

- Firms are much less likely to hire workers with a criminal record (WCs).

  - e.g., many platforms (Uber, Lyft) automatically screen out most WCs

  - externalities from WCs not having jobs

- Less clear: why firms screen out WCs and how we can increase demand for WCs

This Paper

- ▶ Discrete choice field experiment on a large jobs Platform to estimate labor demand for WCs.

    - ▶ policy-relevant jobs: daily, low-skill

    - ▶ employers make decisions on hiring, not call-backs

    - ▶ rich productivity data

- ▶ Employers specify ability to match with WCs under randomized conditions

Summary of Findings

- 39% of employers willing to hire WCs without wage subsidies or any new policies in place.

  - lower demand: customer facing, hi-val inventory

- Wage subsides increase demand, ϵ^D = -0.21.

- Insurance, performance screening, crime type screening, and objective productivity info yield large demand increases at lower cost.

  - firms underestimate WC productivity

Summary of Findings

- 39% of employers willing to hire WCs without wage subsidies or any new policies in place.

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- Insurance, performance screening, crime type screening, and objective productivity info yield large demand increases at lower cost.

  - firms underestimate WC productivity

- Platform change: Firms have option hiring WCs
  - Over 12k job slots have become available to WCs

Pre-registered Framework

- E[Profits] = E[Productivity] − Wage − Prob of Bad Evt · max {Cost of Bad Evt − I, 0}

Pre-registered Framework

▶ E[Profits] = E[Productivity] − Wage −
Prob of Bad Evt · max {Cost of Bad Evt − I, 0}

▶ Predictions:
  ▶ Wage subsidies increase demand.

  ▶ Crime and safety insurance increase demand,
    especially if potential damage on-the-job is high.

  ▶ Performance screening increases demand, especially
    if WCs vary significantly in their performance.

Related Literature

- ▶ RCTs on Hiring with Related Methodology
  - ▶ Kessler, Low and Sullivan, 2019; Mas and Pallais, 2017; Mas and Pallais, 2019.

- ▶ Labor Demand for WCs
  - ▶ Pager, 2003; Holzer, 2007; Stoll, 2009; Agan and Starr, 2018; Minor, Persico and Weiss 2018; Couloute and Kopf, 2018; Bushway, 2004; Holzer, Raphael and Stoll 2006; Raphael, 2011; Vuolo, Lageson and Uggen, 2017; Hunt et al., 2018; Schnepl, 2018; Doleac, 2019; Doleac and Hansen, 2020

- ▶ Hiring & Demand for Disadvantaged Workers
  - ▶ Burtless, 1985; Katz, 1996; Angrist, 1996; Oyer and Schaefer 2011; Eriksson and Rooth, 2014; Pallais 2014; Farber et al., 2018.

- ▶ Behavioral Firms
  - ▶ Bloom and Van Reenen, 2007; Hortacsu and Puller, 2008; Goldfarb and Xiao, 2011; Bloom et al., 2019; DellaVigna and Gentzkow, 2019

Outline of the Talk

1 Setting and RCT

2 Baseline Demand

3 Impact of Interventions

Setting and RCT

Setting

- ▶ Large US on-demand staffing agency serving 10k large employers nation-wide
  - ▶ wide coverage of industries
  - ▶ avg. firm size 433

- ▶ Employers post the job and qualifications. Platform assigns workers on same day

- ▶ CEO & exec team wanted to include WCs, not sure how best to do so → our collaboration

Setting
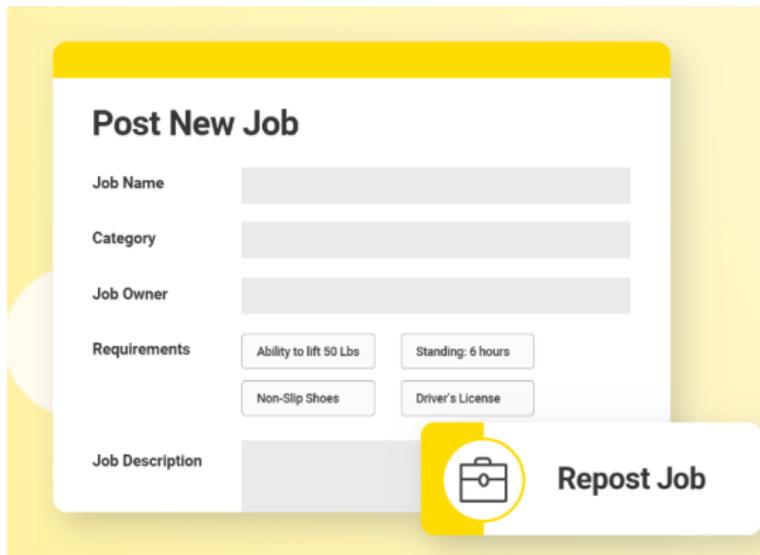
▶ Steep fee to cancel; <1% jobs cancelled in 2019

Recruitment for RCT

- ▶ All messaging to employer clients is direct from [Company] Management via email.

- ▶ 1,095 managers respond in March-April 2020
  - ▶ 8.4k messaged, $35/$50 payment for completion

  - ▶ firms that respond broadly similar to pool messaged

- ▶ Experienced mgrs: 9m on Platform, 7yr overall hiring experience

- ▶ Managers have authority to hire WCs
  - ▶ 80% mgrs can personally affect firm decision to hire WCs

Message from the Platform

- ▶ We are considering expanding our pool of [workers] to include individuals that have a criminal record.

- ▶ If you indicate that you're interested in [workers] with a criminal record, then (and only then) your choice could affect whether these [workers] are able to accept jobs you post.

- ▶ These individuals would be at most 5% of your assignments.

Baseline Demand

▶ Would you permit [workers] with a criminal background to perform jobs you post?

▶ Yes, Only if it's hard to fill my jobs, No

Baseline Demand

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▶ Yes, Only if it's hard to fill my jobs, No

▶ Those who select Yes legally grant permission to the Platform to allow WCs accept their jobs on a first come first serve basis.

▶ Platform followed through extending jobs to WCs for some who answered yes.

Wage Subsidy

- If [the Platform] gave you a [X%] discount for [workers] with a criminal record, would you permit such [workers] to perform jobs you post? This means you would only pay [1- X%] of the wage for those with a criminal record.

  All [workers] would still receive the full pay amount after the discount ([the Platform] would pay the difference).

- Subsidy ∈ [5%, 10%, 25%, 50%, 100%]

- Yes, Only if it's hard to fill my jobs, No

Baseline Demand

Labor Demand for WCs

If [the Platform] gave you a X% ∈ {no mention, 10%, 25%, 50%, 100%} discount for [workers] with a criminal record, would you permit such [workers] to perform jobs you post?

Elasticity = -0.206 (0.055)

N: 1,095

Elasticity Benchmarks
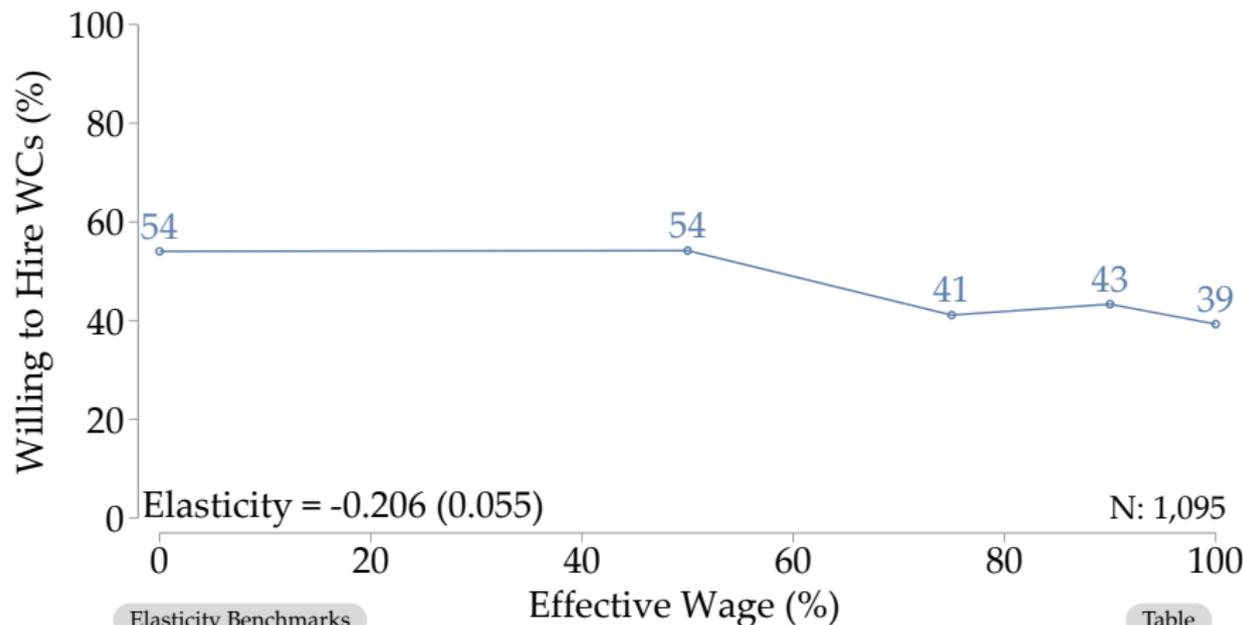
Table

Demand By Job Type

59% of Jobs Involve Customer Interaction
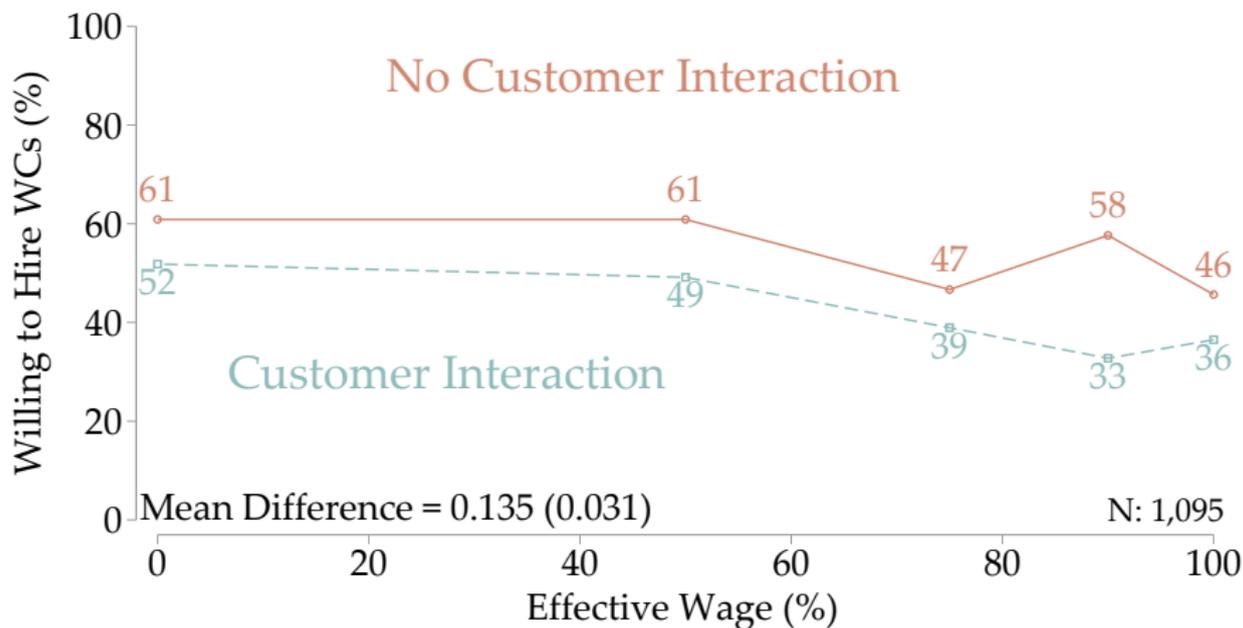
Demand By Job Type

68% of Jobs have High-Value Inventory
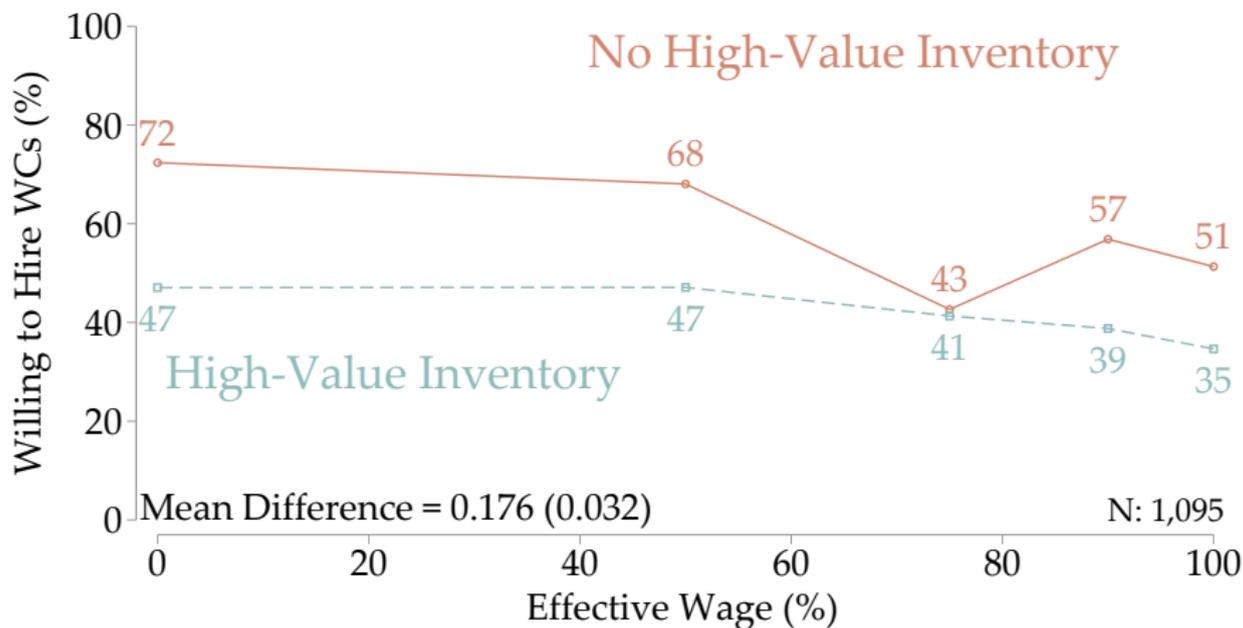
Impact of Interventions

Crime and Safety Insurance

If [the Platform] could cover damages up to $X \in \{$**$5k**, $100k, **$5m**$\}$ related to theft or safety incurred by workers with a criminal record, would you permit such [workers] to perform jobs you post?
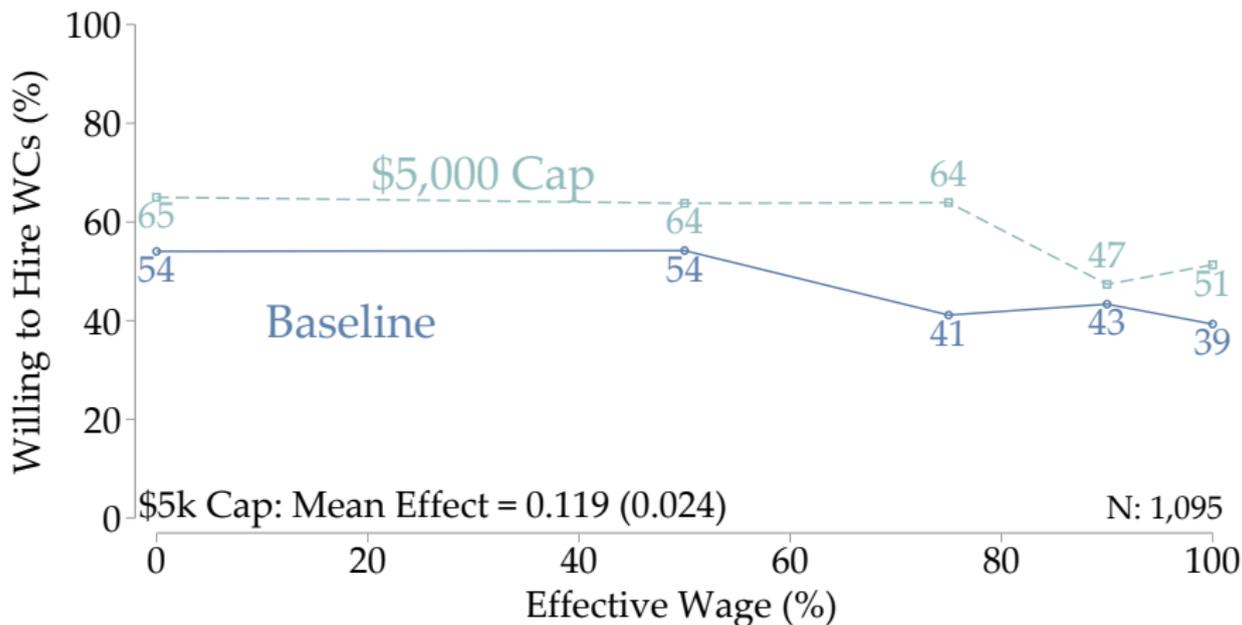
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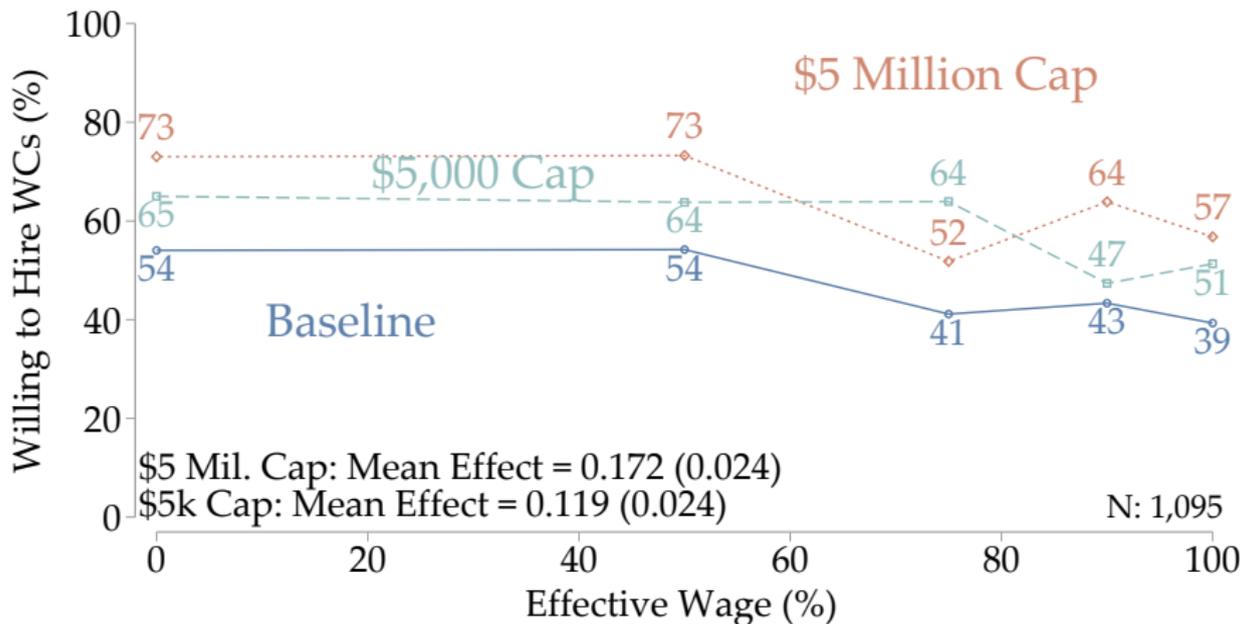
Crime and Safety Insurance

Mean Effects of $5k and $5 Mil Insurance Cap for Jobs with and without High-Value Inventory
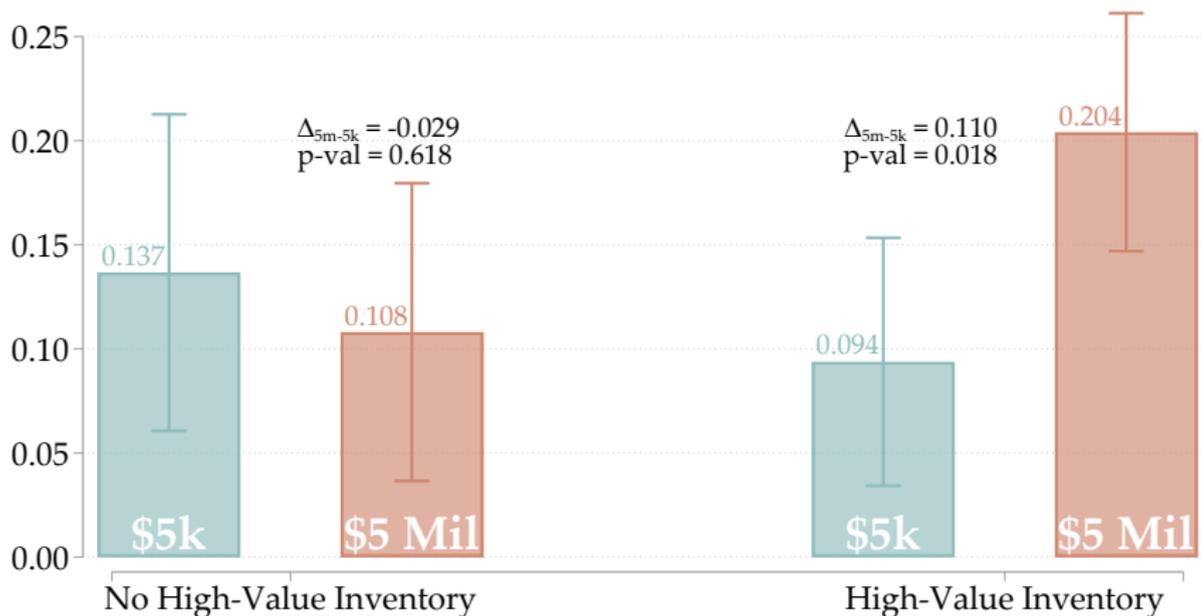
Performance History

If [the Platform] required [workers] with a criminal record to have satisfactorily completed $X \in \{1, 5, 25\}$ job(s), receiving >85% positive reviews (5 stars), would you permit such [workers] to perform jobs you post?

1 Job. Mean Effect = 0.128 (0.026)   N: 1,095

Table

Performance History

If [the Platform] required [workers] with a criminal record to have satisfactorily completed X ∈ {**1**, 5, **25**} job(s), receiving >85% positive reviews (5 stars), would you permit such [workers] to perform jobs you post?

25 Jobs. Mean Effect = 0.121 (0.023)
1 Job. Mean Effect = 0.128 (0.026)

N: 1,095
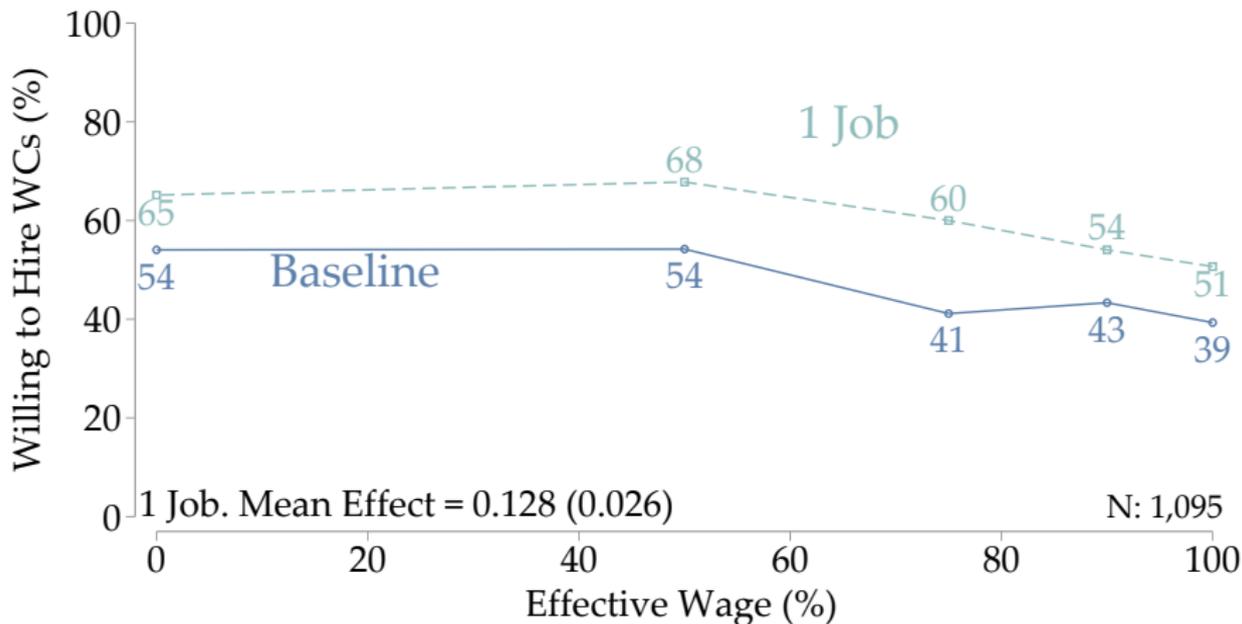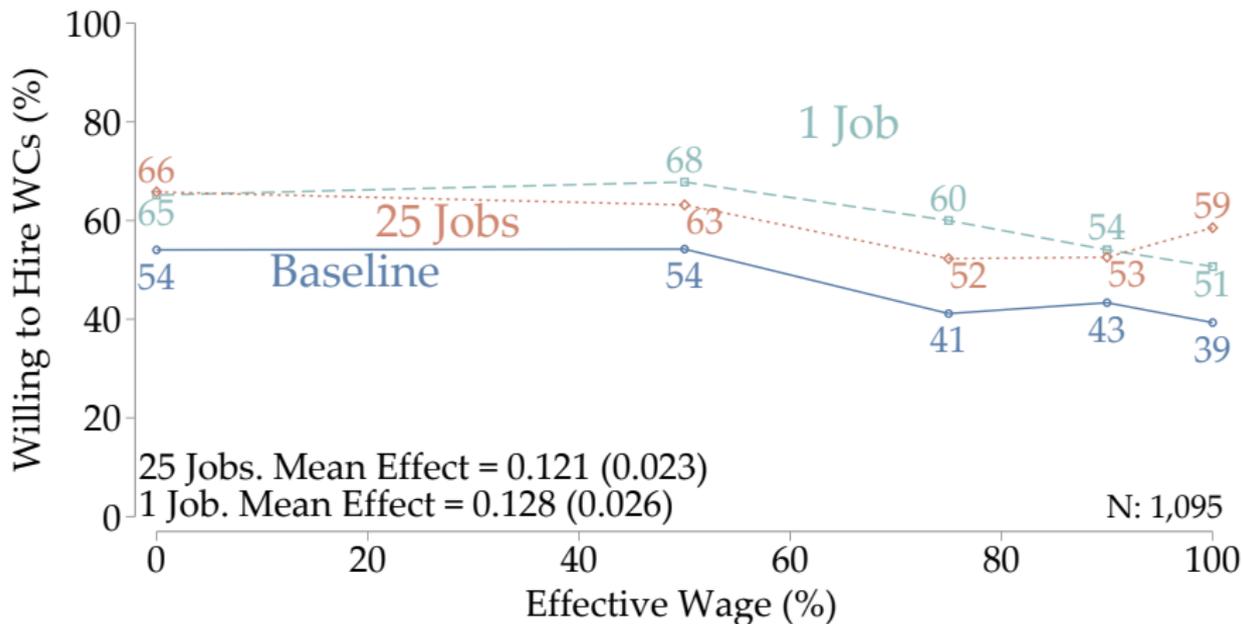
Table

Additional Results

▶ Screening by crime type: hiring 24pp higher for WCs with only drug related felonies, and 7pp higher for property/financial felonies, than violent felonies. Demand by Felony Type

▶ WCs with misdemeanors, rather than felonies, face >50% higher demand, preserving relative demand by crime types. Demand by Misdemeanor Type

▶ 17pp higher demand after excluding anyone with convictions in the past year, 26pp if clean for 3 years or 7. Demand by Years since Conviction

"Only if it's hard to fill my jobs"

Additional indicators of labor market tightness effects. More
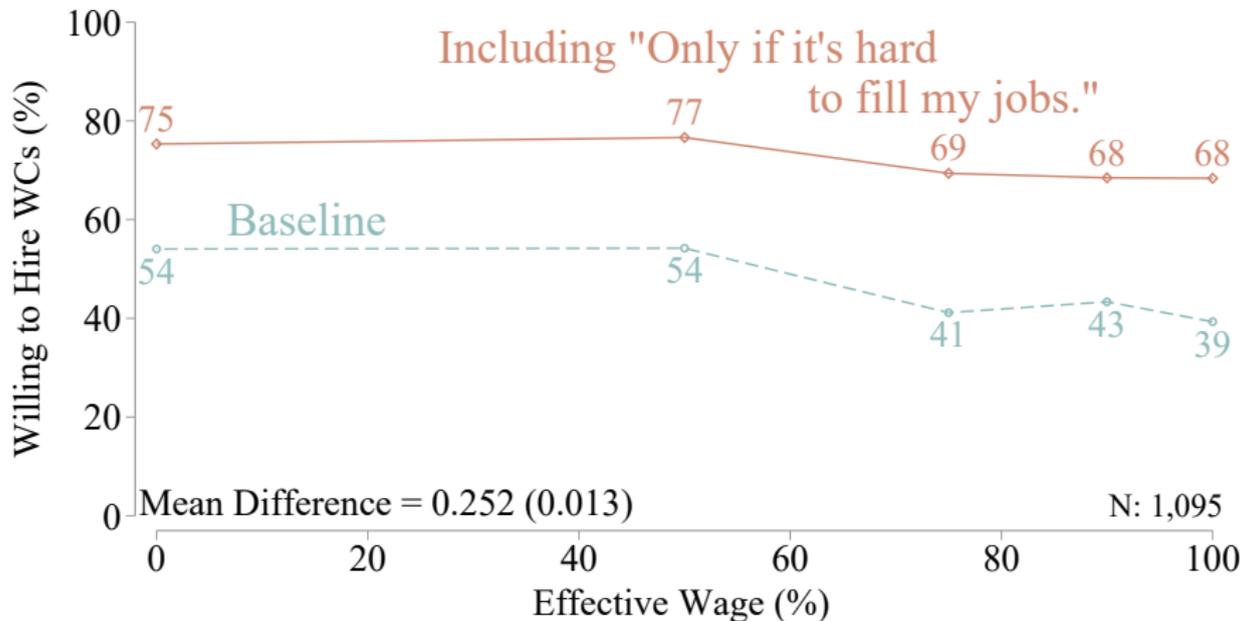
Objective Performance Information

In 2019, 86% of jobs on [the Platform] resulted in a **5-star rating**. What percentage of jobs completed by people with a criminal record do you think would result in a **5-star rating** on [this Platform or a similar Platform]?

If your guess is within 5% of the truth, we will send you an additional [\$2,\$10] reward!

Material/figures/f8b_posteriorbeliefshighperf.pdf

Objective Performance Information

▶ We give all participants the chance to reassess their answer to the earlier question regarding expanding the pool of [workers]

▶ Showing comparable performance between WCs and non-WCs raised hiring demand for WCs by 8.6 pp (20%).

   ▶ On par with the effect of $5,000 insurance cap or 1 prior performance rating.

Cost to Increase Hiring by $\approx 10\%$

Policy	Cost per worker-day
50% wage subsidy	$60
$5k Insurance, $p = 0.001$	$5
$5k Insurance, $p = 0.01$	$50
Require 1 past job. Assume directed matches first	Free
Group information	Free

Notes: p is the assumed daily probability of a bad event where the full insurance policy is paid out. We assume a wage of $15 per hour. We ignore administrative costs.

Roll-out

▶ Platform currently assigns WCs to some jobs of those who expressed interest, largely driven by the location of WCs recruited.

▶ As a result of our RCT, Platform modified interface so thousands of employers posting jobs could have option of hiring WCs

  ▶ Consistent with RCT, offer modest crime and safety insurance

  ▶ Consistent with RCT, currently exclude WCs with violent or sexual felonies with plan to offer detailed tiers.

Conclusion

▶ Without incentives, a third of employers willing to hire WCs for short-term work.

▶ Subsidies boost WC hiring, but other policies much more cost-effective like performance history and objective performance information.

▶ Results suggest firms use WC status as signal of perceived low productivity & left-tail risk.

Policy Implications

- ▶ Federal Bonding Program ($5k insurance) may have low take-up for non-demand reasons

- ▶ Work Opportunity Tax Credit (40% wage subsidy) may have low take-up because cover WCs in first year out, when demand is lowest

- ▶ Allowing firms to hire WCs closes about 1/4 gap in Black-white exclusion from Platform

Thank you!

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Additional Results

▶ We find no evidence that labor market tightness affects demand.

  ▶ If the unemployment rate were [2,6,10]%, meaning the local labor market was [doing very well, about average, not doing so well] and [a less than typical, an average, a more than typical] share of people were looking for jobs Demand by Local Unemployment

  ▶ Employers in areas with fewer COVID cases do not exhibit higher demand. Demand by COVID-19 Prevalence

  Back

Objective Performance Information

Shifting Perceptions of WCs
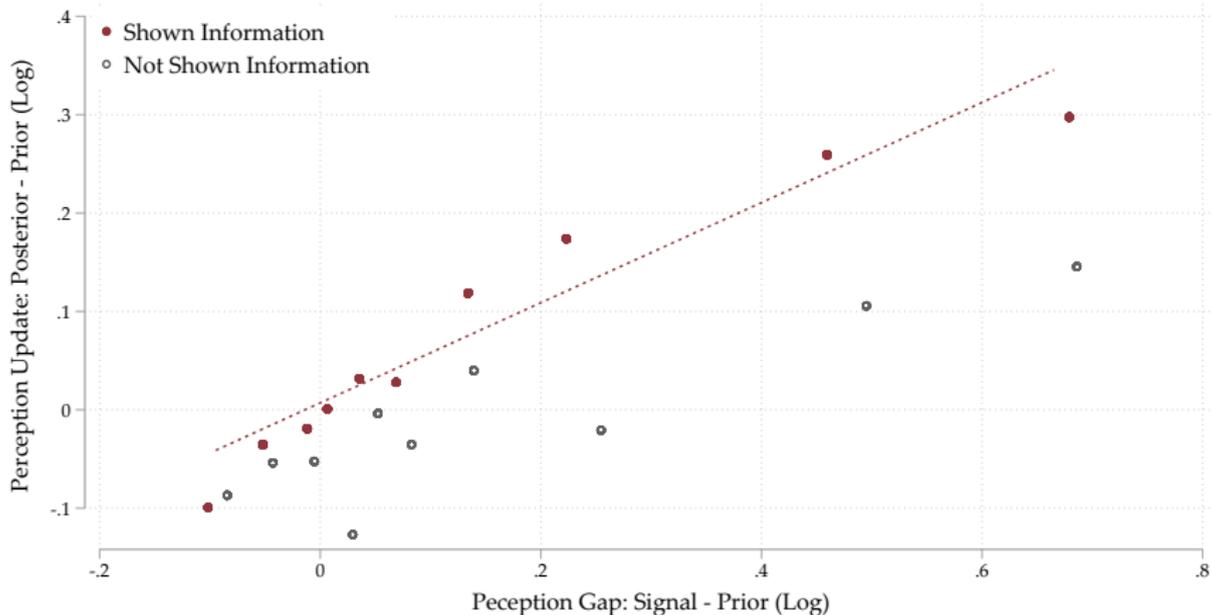
Additional Slides

	Baseline	Crime and Safety Insurance			Performance History		
		$5k[†]	$100k	$5m	1 Job	5 Jobs	25 Jobs
No Subsidy	0.381	0.112	0.176	0.190	0.081	0.210	0.203
	(0.033)	(0.050)	(0.054)	(0.058)	(0.055)	(0.053)	(0.052)
10% Subsidy[†]	0.446	0.036	0.193	0.226	0.120	0.278	0.100
	(0.038)	(0.062)	(0.058)	(0.055)	(0.056)	(0.065)	(0.052)
25% Subsidy	0.414	0.247	0.225	0.099	0.204	0.241	0.115
	(0.039)	(0.058)	(0.055)	(0.054)	(0.070)	(0.062)	(0.049)
50% Subsidy	0.547	0.085	0.129	0.179	0.131	0.115	0.087
	(0.037)	(0.062)	(0.057)	(0.047)	(0.064)	(0.050)	(0.055)
100% Subsidy	0.564	0.098	0.148	0.190	0.097	0.171	0.107
	(0.033)	(0.047)	(0.046)	(0.051)	(0.055)	(0.044)	(0.052)
Elasticity	-0.236	-0.183	-0.141	-0.211	-0.190	-0.115	-0.139
	(0.055)	(0.077)	(0.074)	(0.081)	(0.090)	(0.074)	(0.081)
Mean Effect	–	0.116	0.173	0.174	0.123	0.195	0.122
vs. Baseline		(0.025)	(0.024)	(0.024)	(0.027)	(0.024)	(0.023)
Firms	865	278	307	292	266	292	316
Respondents	1,032	314	358	360	312	337	383

Baseline   Crime and Safety Insurance   Performance History

Additional Slides

	Customer Interactions	No Customer Interactions	High-Value Inventory	No High-Value Inventory	WC Policy	No WC Policy
No Subsidy	0.357	0.419	0.329	0.493	0.315	0.449
	(0.042)	(0.053)	(0.039)	(0.058)	(0.044)	(0.049)
10% Subsidy[†]	0.333	0.588	0.406	0.560	0.381	0.495
	(0.048)	(0.055)	(0.045)	(0.071)	(0.058)	(0.046)
25% Subsidy	0.378	0.479	0.406	0.431	0.340	0.485
	(0.047)	(0.060)	(0.049)	(0.057)	(0.051)	(0.053)
50% Subsidy	0.487	0.625	0.477	0.681	0.500	0.586
	(0.048)	(0.053)	(0.046)	(0.054)	(0.050)	(0.049)
100% Subsidy	0.530	0.615	0.483	0.724	0.455	0.653
	(0.044)	(0.050)	(0.040)	(0.054)	(0.050)	(0.042)
Elasticity	-0.262	-0.197	-0.176	-0.332	-0.189	-0.264
	(0.072)	(0.083)	(0.066)	(0.093)	(0.082)	(0.071)
Mean Effect vs. Omitted Group	–	0.130	–	0.164	–	0.142
		(0.032)		(0.032)		(0.031)
Firms	512	380	592	307	408	497
Respondents	611	421	703	329	480	552

Customer Interactions   High-Value Inventory   WC Hiring Policy

Additional Slides

	Willing to Hire: Baseline		
	10%	6%	2%
No Subsidy	-0.010	0.111	0.096
	(0.050)	(0.060)	(0.046)
10% Subsidy[†]	0.063	0.152	0.165
	(0.085)	(0.068)	(0.077)
25% Subsidy	0.078	0.088	0.101
	(0.077)	(0.073)	(0.076)
50% Subsidy	0.256	0.233	0.183
	(0.067)	(0.069)	(0.075)
100% Subsidy	0.184	0.313	0.202
	(0.071)	(0.066)	(0.060)
Elasticity	-0.240	-0.263	-0.115
	(0.098)	(0.093)	(0.083)
Mean Effect	–	0.062	0.034
vs. Omitted Group		(0.040)	(0.040)
Firms	284	293	300
Respondents	315	361	356

Figure

Additional Slides

	Years Since Conviction			Crime Type					
	1 Year	3 Years	7 Years	Violent Felony	Violent Misd.	Property Felony	Property Misd.	Drug Felony	Drug Misd.
No Subsidy	0.206	0.236	0.380	-0.316	-0.279	-0.228	-0.107	-0.107	0.121
	(0.051)	(0.059)	(0.055)	(0.033)	(0.032)	(0.031)	(0.034)	(0.034)	(0.033)
10% Subsidy[†]	0.191	0.287	0.225	-0.373	-0.337	-0.311	-0.088	-0.176	0.093
	(0.060)	(0.060)	(0.060)	(0.037)	(0.036)	(0.036)	(0.041)	(0.037)	(0.039)
25% Subsidy	0.217	0.358	0.305	-0.348	-0.313	-0.278	-0.101	-0.126	0.076
	(0.050)	(0.064)	(0.064)	(0.037)	(0.038)	(0.038)	(0.038)	(0.036)	(0.036)
50% Subsidy	0.100	0.187	0.293	-0.438	-0.378	-0.373	-0.184	-0.174	0.040
	(0.059)	(0.053)	(0.047)	(0.036)	(0.039)	(0.038)	(0.040)	(0.032)	(0.036)
100% Subsidy	0.132	0.246	0.158	-0.449	-0.382	-0.396	-0.187	-0.133	0.058
	(0.048)	(0.044)	(0.049)	(0.033)	(0.034)	(0.036)	(0.039)	(0.038)	(0.032)
Elasticity	-0.083	-0.124	-0.024	-0.115	-0.187	-0.062	-0.165	-0.363	-0.257
	(0.061)	(0.058)	(0.057)	(0.053)	(0.065)	(0.069)	(0.088)	(0.088)	(0.090)
Mean Effect	–	0.094	0.103	–	0.047	0.068	0.251	0.243	0.463
vs. Omitted Group		(0.037)	(0.036)		(0.008)	(0.011)	(0.016)	(0.015)	(0.016)
Firms	305	280	297	865	865	865	865	865	865
Respondents	366	319	347	1,032	1,032	1,032	1,032	1,032	1,032

Figure

Additional Slides

	Measure: High Performance		Measure: Low Performance & No Show	
	Prior: Below Median	Above Median	Prior: Below Median	Above Median
No Subsidy	0.276	0.317	0.531	0.438
	(0.060)	(0.056)	(0.071)	(0.067)
10% Subsidy[†]	0.429	0.538	0.444	0.381
	(0.073)	(0.086)	(0.072)	(0.074)
25% Subsidy	0.333	0.400	0.440	0.500
	(0.065)	(0.074)	(0.103)	(0.069)
50% Subsidy	0.509	0.632	0.487	0.540
	(0.064)	(0.062)	(0.088)	(0.074)
100% Subsidy	0.569	0.586	0.604	0.459
	(0.061)	(0.058)	(0.067)	(0.082)
Elasticity	-0.208	-0.059	0.005	-0.032
	(0.060)	(0.063)	(0.070)	(0.063)
Mean Effect	–	0.067	0.080	0.046
vs. Omitted Group		(0.042)	(0.046)	(0.044)
Firms	262	247	226	201
Respondents	284	271	254	223

Sample Description

- ▶ Match to Infogroup Historical Business Database
  - ▶ 52% of sample (524) has a match in the database, of which 41% have industry info.

Sample Description

▶ Match to Infogroup Historical Business Database

    ▶ 52% of sample (524) has a match in the database, of which 41% have industry info.

	Experimental Sample	All Firms (Infogroup Data)
Firm Size	40	14.8
Service	31.2%	38.7%
Retail	28.8%	20.5%
Wholesale Trade	11.4%	7.1%
Transportation & Public Utilities	7.9%	3.5%
Manufacturing	6.3%	3.8%
Finance, Insurance, & Real Estate	3.2%	8.5%
Construction	2.6%	8.3%
Mining	0.5%	0.3%
Public Administration	0.3%	2.4%
Nonclassifiable	7.7%	7.0%
N	524 *(222 Industry)*	4 million

Paper in a Nutshell   Setting

Demand By Job Type

47% Firms have WC Hiring Policy
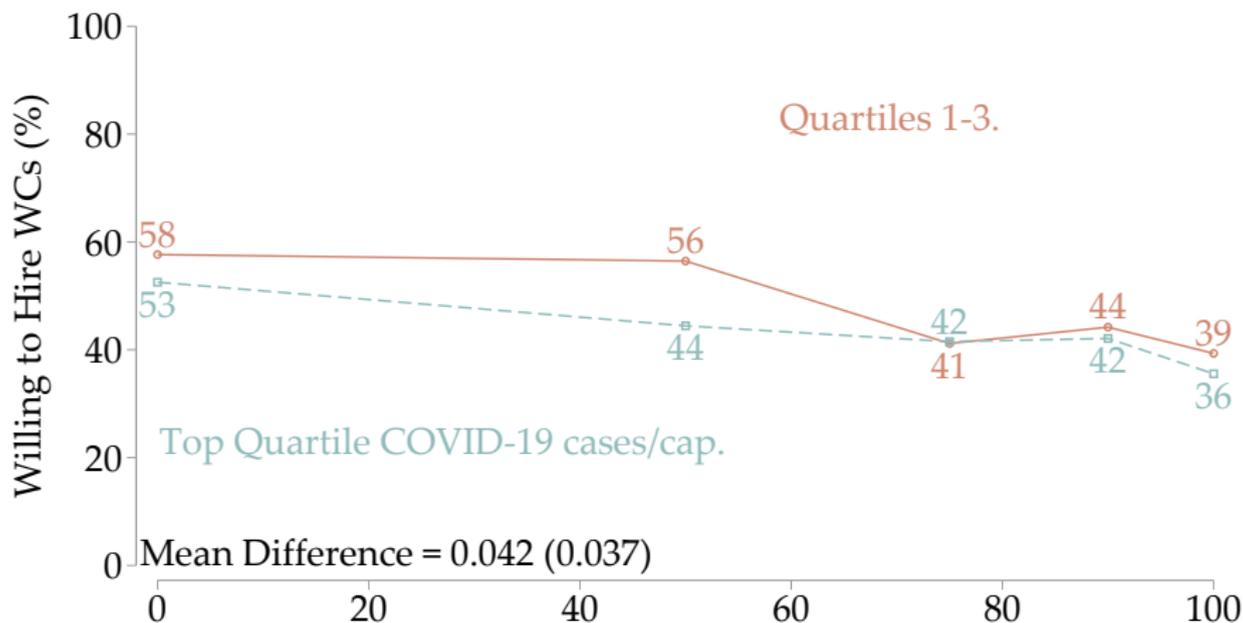
Elasticity Benchmarks

	Notes	Elasticity
Our Paper	**WCs**	**-0.2**
Angrist (1996)	Palestinian Temps	-0.4
Hamermesh (1995)	Industry Data	-0.15 to -0.75
Acemoglu et al. (2003)	Women	-1.0 to -1.5
Borjas (2003)	Own Price	-0.3

Summary   Baseline

Objective Performance Information

The truth is that 3% of jobs completed by people with a criminal record resulted in either a no-show or low rating (1 or 2 stars) on the same or a similar platform - actually better than everyone else.

Impact of Low-Performance Information	First Stage	OLS	IV	Reduced Form
Shown Info × (Signal - Prior Belief)	0.467			0.0264
	(0.0486)			(0.0341)
ln(Posterior Belief)		-0.0290	0.0566	
		(0.0300)	(0.0736)	
Mean: Dependent Variable	1.66	0.52	0.52	0.52
Kleibergen-Paap: Weak Identification F-Stat			92.03	
Firms	415	415	415	415
Managers	484	484	484	484

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Objective Performance Information

Effect of Shifting Perceptions on Demand for WCs

September 2022   30 / 30
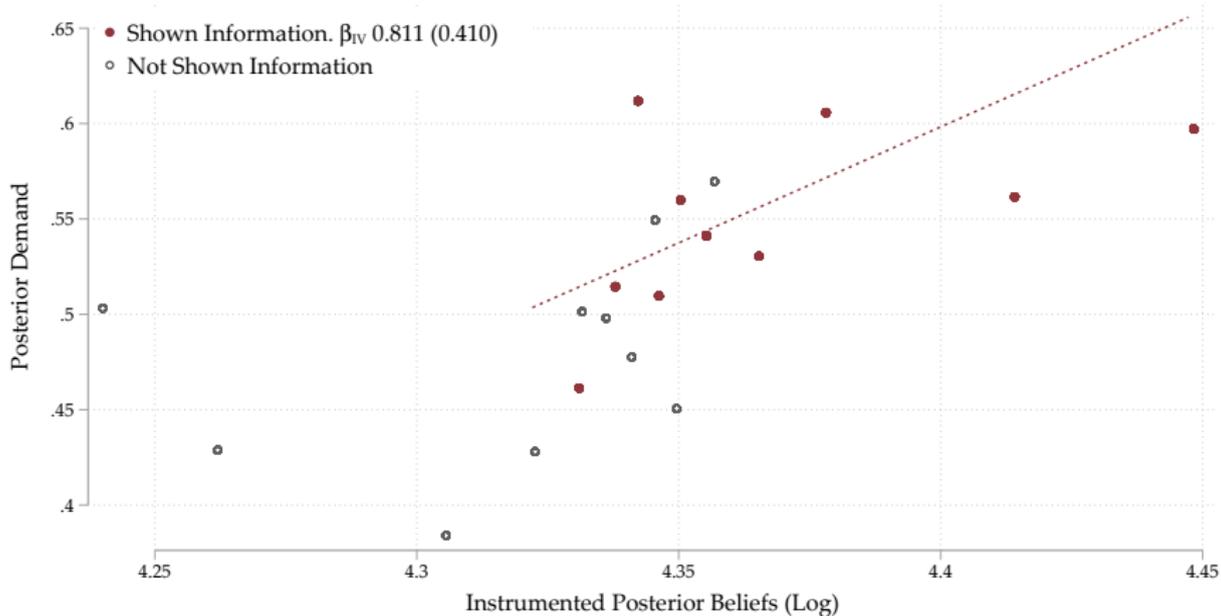
Demand By Labor Market Tightness

If the unemployment rate were [2,6,10]%, meaning the local labor market was [doing very well, about average, not doing so well] and [a less than typical, an average, a more than typical] share of people were looking for jobs...

6% Unemployment: Mean Effect = 0.058 (0.039)
2% Unemployment: Mean Effect = 0.041 (0.039)
N: 502

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COVID-19

Willing to Hire WCs (%)

Quartiles 1-3.

58
53
56
44
42
41
44
42
39
36

Top Quartile COVID-19 cases/cap.

Mean Difference = 0.042 (0.037)
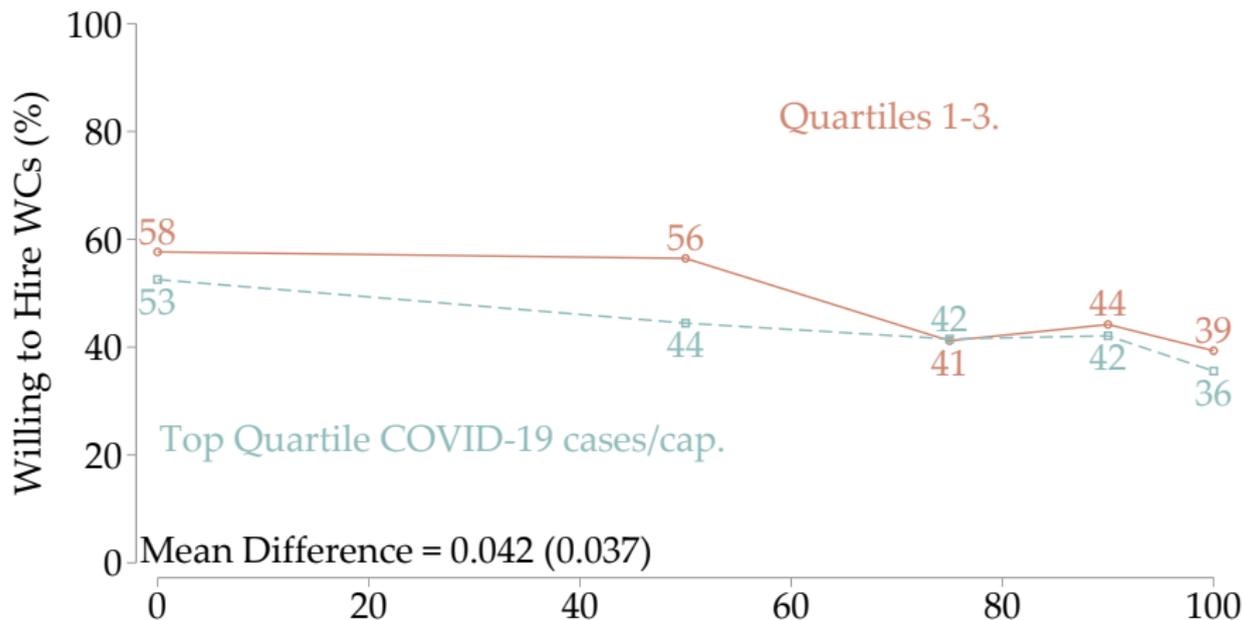
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Additional Conditions

► Please indicate whether you would permit [workers] with these types of convictions to perform jobs you post:

$$\begin{bmatrix} \text{Felony} & \text{Misdemeanor} \end{bmatrix} \cdot \begin{bmatrix} \text{Substance-Related} \\ \text{Property/Financial} \\ \text{Violent} \end{bmatrix}$$

Screening Crime Type

Please indicate whether you would permit [workers] with these types of convictions to perform jobs you post:

Felony | Misdemeanor

Screening Crime Type

Please indicate whether you would permit [workers] with these types of convictions to perform jobs you post:

| **Felony** | Misdemeanor |

Sub. Felony: Mean Difference 0.237 (0.014)
Prop/Fin Felony: Mean Difference 0.066 (0.010)

N: 1,095

Substance-Related

Property/Financial

Violent

Willing to Hire WCs (%)

Effective Wage (%)

Screening Crime Type

Please indicate whether you would permit [workers] with these types of convictions to perform jobs you post:

Felony | **Misdemeanor**

Sub. Misd: Mean Difference 0.457 (0.016)
Prop/Fin Misd: Mean Difference 0.245 (0.015)
Violent Misd: Mean Difference 0.046 (0.007)

N: 1,095

Substance-Related

Property/Financial

Violent Misdemeanor

Violent Felony

Willing to Hire WCs (%)

Effective Wage (%)
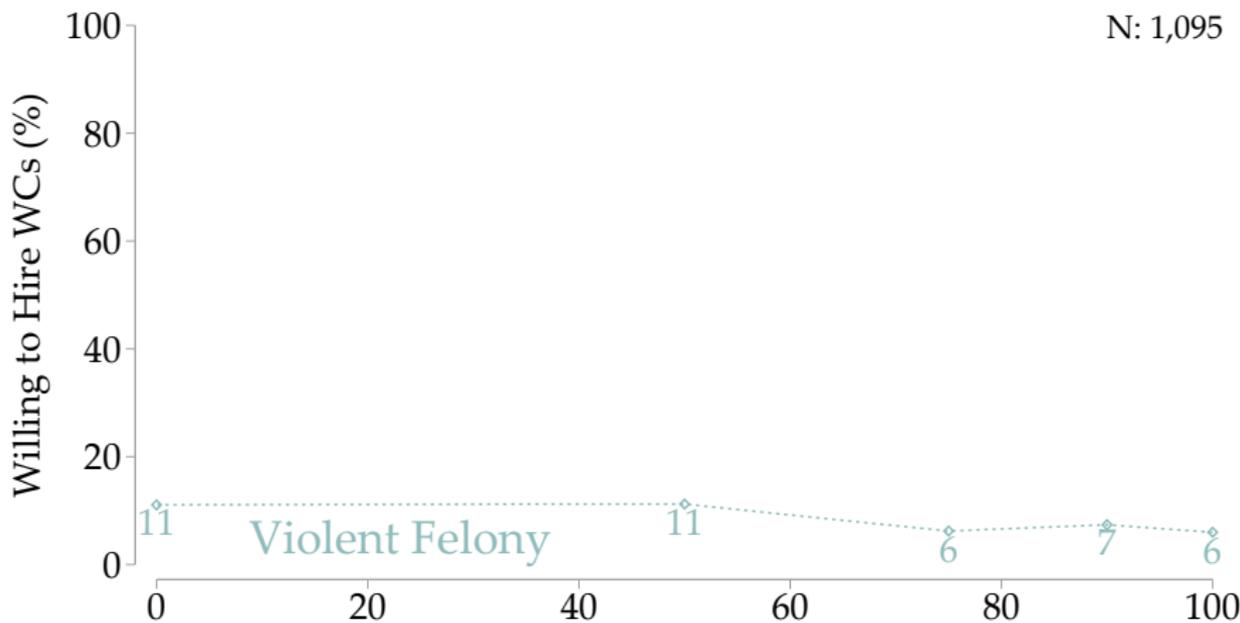
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Screening Years with Clean Record

If {The Platform} required users with a criminal record to have maintained a clean record for at least $X \in \{1, 3, 7\}$ year(s) would you permit such users to perform jobs you post?

Objective Performance Information

The truth is that 87% of jobs completed by people with a criminal record resulted in a 5-star rating on the same or a similar platform - actually better than everyone else.

Impact of High-Performance Information	First Stage	OLS	IV	Reduced Form
Shown Info × (Signal - Prior Belief)	0.333 (0.0806)			0.271 (0.131)
ln(Posterior Belief)		0.332 (0.108)	0.814 (0.415)	
Mean: Dependent Variable	4.36	0.52	0.52	0.52
Kleibergen-Paap: Weak Identification F-Stat			17.06	
Firms	485	485	485	485
Managers	553	553	553	553

Low-Performance Information

Objective Performance Information

The truth is that 87% of jobs completed by people with a criminal record resulted in a 5-star rating on the same or a similar platform - actually better than everyone else.

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Back   Low-Performance Information

Objective Performance Information

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