Market Luck: Skill-Biased Inequality and Redistributive Preferences

EEA ESEM 2024 Rotterdam

Simona Sartor and Jeffrey Yusof

August 22, 2024

BUSINESS

Auto companies are racing to meet an electric future, and transforming the workforce

October 1, 2022 · 5:00 AM ET

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"For the speed that we need to move and the expertise that we need, we probably don't have the luxury of the time it will take to do all of that re-skilling," says Craig DeWald, Ford's Chief Learning Officer. "We're being strategic about going out and bringing in key talent."

"There will be layoffs because there are different kinds of workers that are needed," says Michelle Krebs, executive analyst with Cox Automotive. "Software engineers are hugely important in EVs."

Companies will hire software engineers and gradually fire others who've long worked on gas-powered cars, as Ford did last month when it let go of 3,000 white-collar employees.

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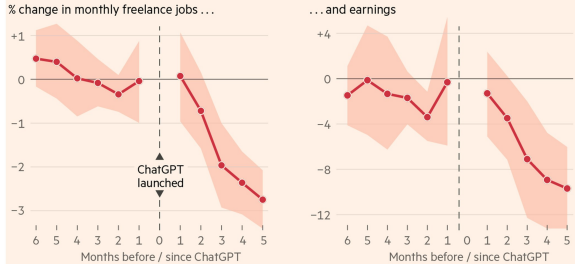
Generative AI is already taking white-collar jobs and wages in the online freelancing world

Change in employment and earnings from writing and editing jobs on an online freelancing platform after the launch of ChatGPT



Source: *The Short-Term Effects of Generative AI on Employment: Evidence from an Online Labor Market (Hui et al, 2023)*
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Motivation

- Structural transformations **change rewards of different skills** in the labor market:

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  - Skill-biased technological change (Autor and Dorn, 2013; Goos et al., 2014)
  - Globalization and import competition (Autor et al., 2013)
  - Automation and AI (Acemoglu and Restrepo, 2019, 2022; Moll et al., 2022)

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⇒ **Market luck**: exogenous market shocks that affect allocations of income between workers

⇒ **Skill-biased inequality**: certain skills become obsolete while others receive even higher rewards

Motivation

- Fairness views fundamentally affect people's support for redistributive policies

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⇒ **Skill-biased inequality introduces a trade-off from a fairness perspective:**

  - Certain skills are more productive and in demand → Inequality fair
  - Market luck is beyond a workers' control → Inequality unfair

This Paper

Are inequalities arising from market luck perceived as fair?

This Paper

Are inequalities arising from market luck perceived as fair?

→ Online experiment with workers, buyers, and impartial spectators

→ Complementary survey experiment with real-life scenarios

Related Literature

- Perceptions of inequality and preferences for redistribution

  (Alesina and Angeletos, 2005; Alesina et al. 2018; Cruces et al., 2013; Kuziemko et al., 2015; Stantcheva, 2021)

  → **Contribution:** Improve understanding of phenomenon that rising inequality does not lead to increased demand for redistribution.

- Meritocratic fairness views focusing on effort versus luck

  (Almås et al., 2020; Andre, 2021; Bhattacharya and Mollerstron, 2022; Cappelen et al., 2007ff; Durante et al., 2014)

  → **Contribution:** Show that traditional dichotomy falls short of explaining fairness views in market contexts.

- Role of social preferences for political views and behavior

  (Cohn et al., 2023; Epper ⓕ al., 2023; Fisman et al., 2017; Kerschbamer and Müller, 2020)

  → **Contribution:** Fairness views elicited in a market context are the most predictive of support for welfare policies.

Online Experiment

Experimental Design: Basis

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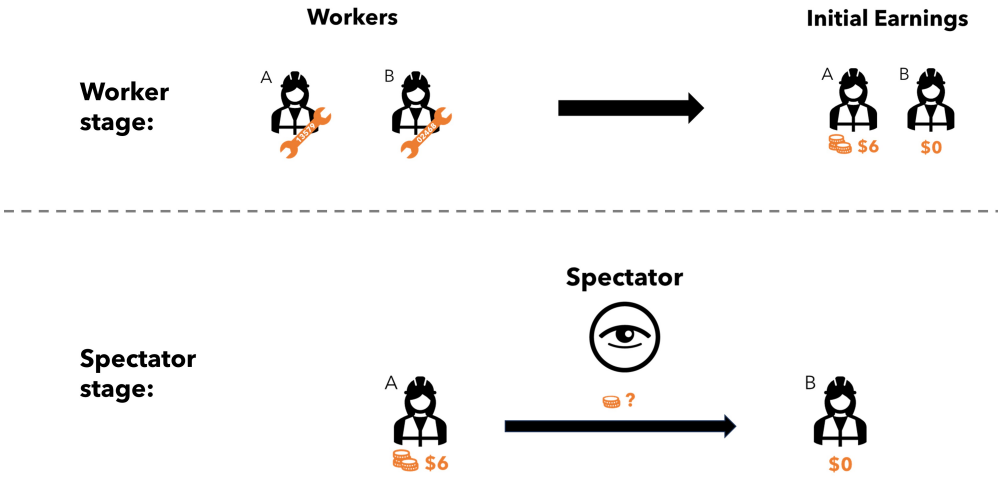
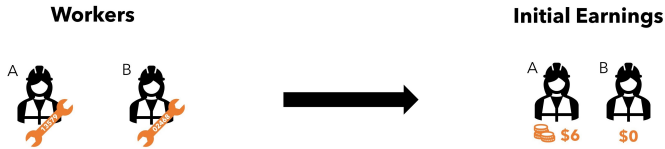
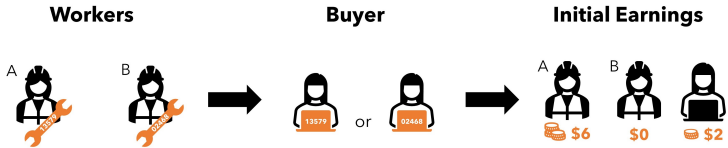


Experimental Design: Treatments



Source of income inequality between two workers varies across treatments:

Experimental Design: Treatments



Source of income inequality between two workers varies across treatments:

- Market Luck: Exogenous market demand of buyer

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Source of income inequality between two workers varies across treatments:

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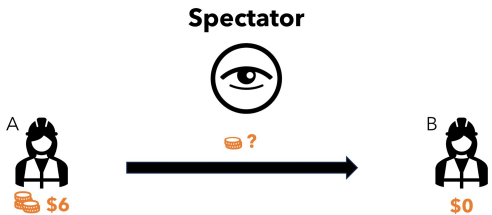
- Brute Luck: Coin flip (no buyer)

Experimental Design: Treatments

Source of income inequality between two workers varies across treatments:

- Market Luck: Exogenous market demand of buyer
- Brute Luck: Coin flip (no buyer)
- Effort: Relative performance (no buyer)

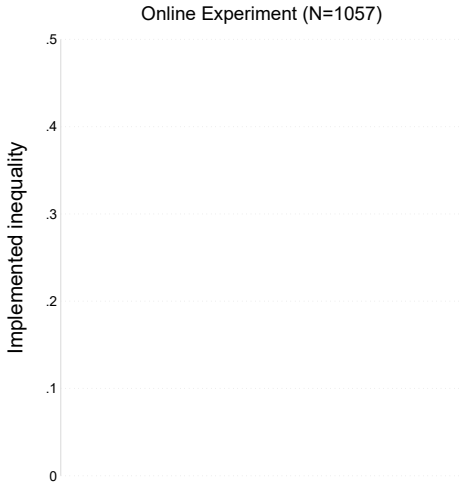
Outcome



Main outcome is the inequality implemented by a spectator

Gini coefficient: 0 = complete equality; 1 = complete inequality

Main Result



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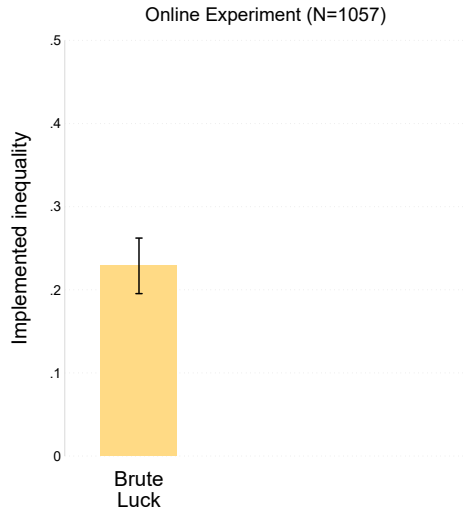
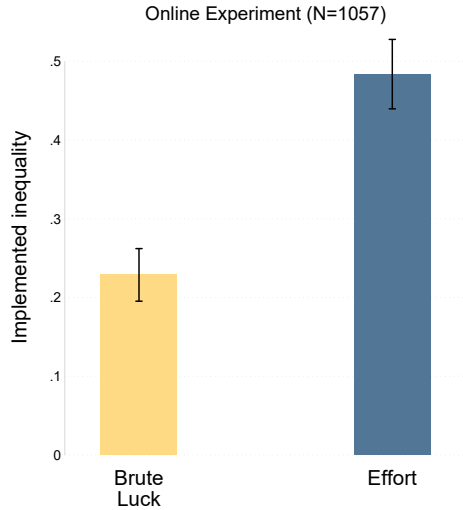
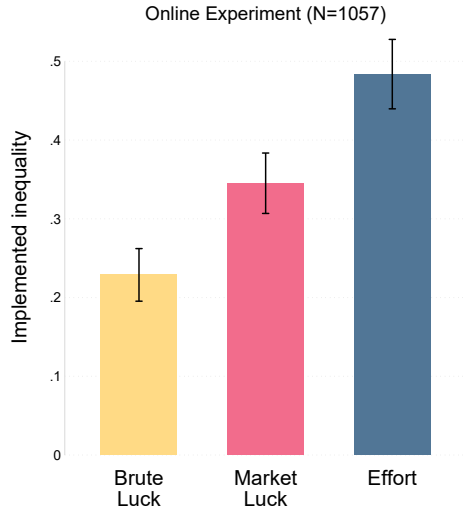

Online Experiment (N=1057)
Implemented inequality
.5
.4
.3
.2
.1
0
Brute Luck

Main Result


Online Experiment (N=1057)
Implemented inequality
.5
.4
.3
.2
.1
0
Brute Luck
Effort

Main Result


Online Experiment (N=1057)
Implemented inequality
.5
.4
.3
.2
.1
0
Brute Luck
Market Luck
Effort

Survey Experiment

Vignette Design

Market shock scenarios where two workers end up earning different salaries:

Vignette Design

Market shock scenarios where two workers end up earning different salaries:

- Trade/import competition
- Technological change: productivity gain
- Technological change: productivity loss (automation)
- Change in consumer taste
- Immigration wave
- Benchmark: Brute luck (company lottery) and Effort

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⇒ **Outcome: Subject's fairness perceptions of income differences**

Design: Vignette Example

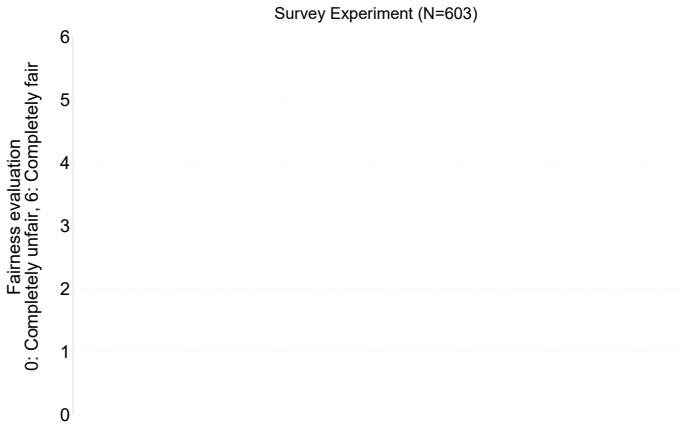
James and David are of the same age but work in different occupations. They both work hard, perform well in their jobs, and have similar annual earnings. Because James and David have different skills, James could not work in David's job, and David could not work in James's job.

Technological advancements lead to innovations, such as new machinery and computer programs, which make David more productive in his job. James' productivity remains unaffected by these innovations. As a result, **David's annual earnings increase**, while **James' annual earnings remain unchanged**. These innovations were completely unexpected at the time when James and David made their career choices.

Please indicate the extent to which you think it is fair or unfair that David now earns more than James because of this unexpected technological advancements. (7-point Likert scale)

Trade | SBTC loss | Taste change | Immigration | Brute luck | Effort

Main Result: Fairness Evaluations



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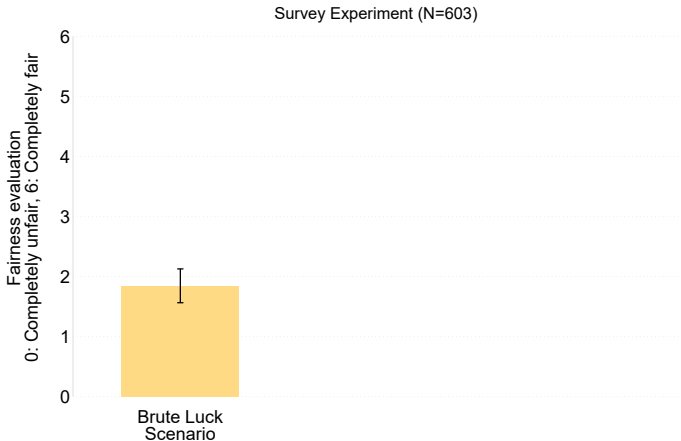

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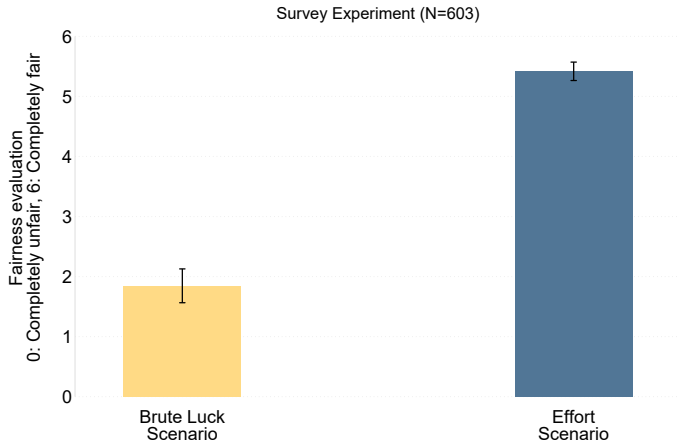

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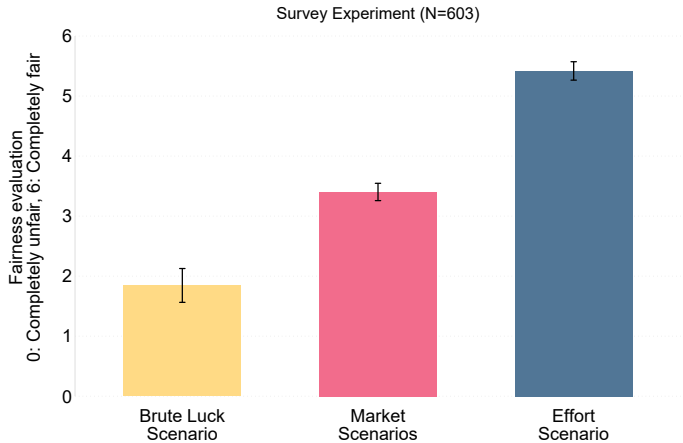

◂ by Scenario ◂ Anticipation

Support for Welfare Policies

Predicting Policy Support

Measure support for different welfare polices: (5-point Likert scale)

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Measure support for different welfare polices: (5-point Likert scale)

Redistribution	**Predistribution**	**Market shocks**
Top income tax	Minimum wage	Robot tax
Wealth tax	Employment bill	Retraining/income support
Estate tax	Unions	Restriction of immigration
Unempl. benefits		Limits to foreign imports

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Measure support for different welfare polices: (5-point Likert scale)

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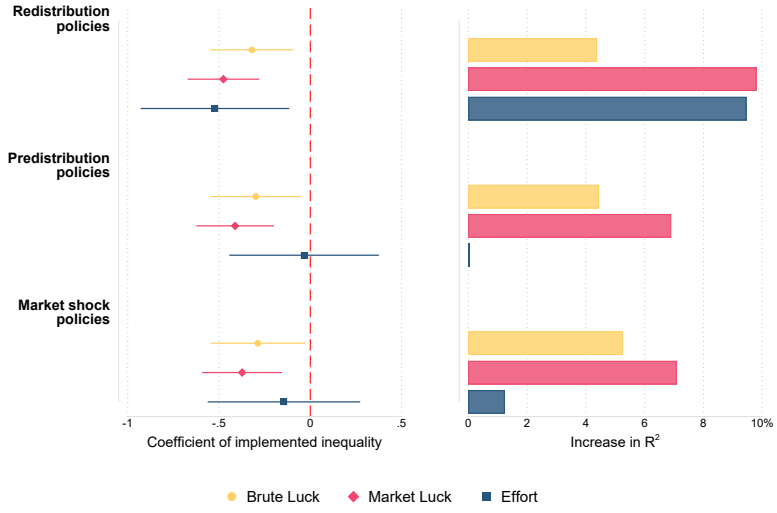
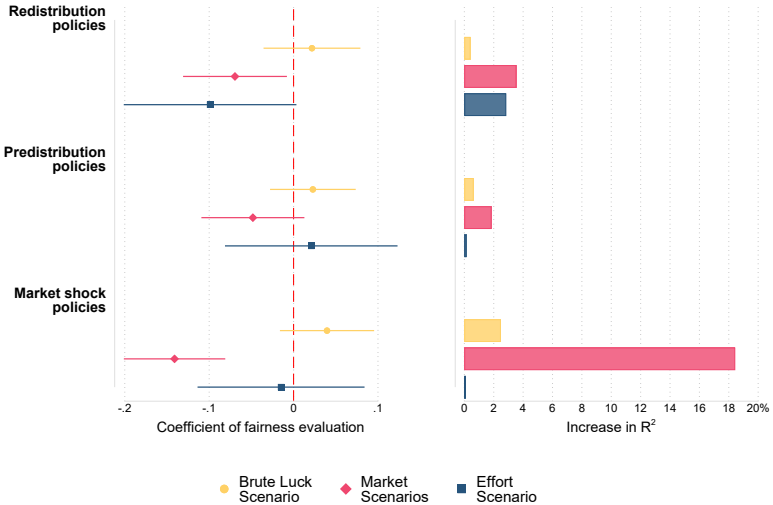
Empirical exercises to assess predictive value:

- Regress policy support on experimental measure of fairness views
- Calculate increase in R^2 when including experimental measure of fairness views

Predictive Value of Redistributive Behavior in the Online Experiment



Predictive Value of Redistributive Behavior in the Survey Experiment



Conclusion

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- People seem to be more accepting of inequalities that are caused by market shocks, even though they are beyond individuals' control
- The results of the complementary survey experiment confirm that our findings extend to real-life scenarios
- Our experimental measures of fairness views predict support for real-world welfare policies
- Our results suggest that the traditional concept of meritocratic fairness (luck vs. effort) might fall short of explaining redistributive preferences in market contexts

Thank you very much!

jeffrey.yusof@econ.uzh.ch

Appendix

Worker Task

B	H	K	M	S
↓	↓	↓	↓	↓
3	7	1	5	9

Decryption key of Worker A

B	H	K	M	S
↓	↓	↓	↓	↓
2	6	0	4	8

Decryption key of Worker B

Worker A: **HBKMS** → **73159**

Worker B: **HBKMS** → **62048**

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Buyer Task

Upload

These are the number sequences you bought and need to upload by checking them off in the matrix below.

20648, 62048, 02648

Please, finish the upload and continue to the next page by clicking on the arrow at the bottom once you checked off all the sequences

20648	48602	02648
62048	04628	28640
48026	24806	84206

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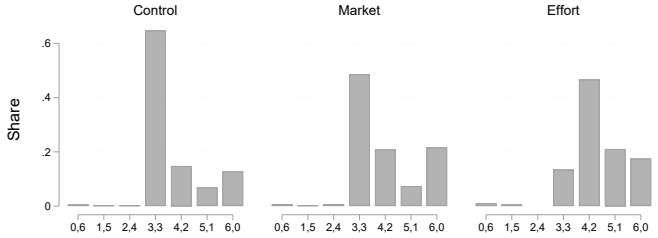
Distribution of implemented inequality



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Regression Results I

	(1)	(2)	(3)	(4)	(5)	(6)
Demand shock	0.117***	0.110***			0.117***	0.110***
	(0.026)	(0.026)			(0.026)	(0.026)
Effort			0.248***	0.247***	0.232***	0.233***
			(0.035)	(0.034)	(0.032)	(0.032)
Constant	0.251***	0.326***	0.236***	0.198***	0.251***	0.288***
	(0.023)	(0.051)	(0.027)	(0.056)	(0.023)	(0.047)
Controls	No	Yes	No	Yes	No	Yes
F-stat p-val	0.000	0.000	0.000	0.000	0.000	0.000
Adj. R-squared	0.023	0.053	0.102	0.141	0.060	0.084
Observations	862	862	635	635	1057	1057

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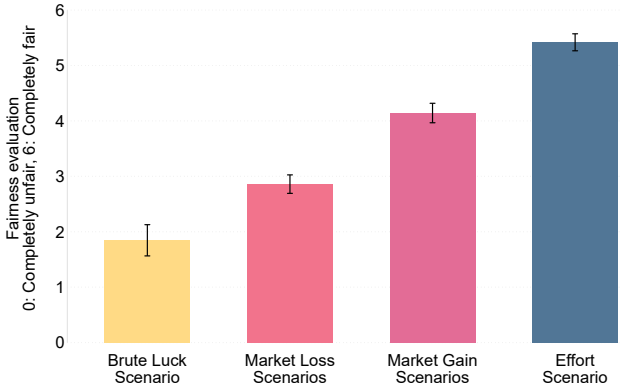
Regression Results II

	(1)	(2)	(3)	(4)	(5)	(6)
Profit only	0.093***	0.095***			0.105***	0.108***
	(0.029)	(0.029)			(0.028)	(0.028)
Third party			-0.001	-0.015	0.011	-0.001
			(0.028)	(0.028)	(0.027)	(0.027)
Demand shock					0.117***	0.110***
					(0.026)	(0.026)
Constant	0.236***	0.317***	0.236***	0.322***	0.251***	0.366***
	(0.027)	(0.052)	(0.027)	(0.052)	(0.023)	(0.040)
Controls	No	Yes	No	Yes	No	Yes
F-stat p-val	0.003	0.000	0.900	0.000	0.000	0.000
Adj. R-squared	0.011	0.055	-0.002	0.052	0.018	0.055
Observations	881	881	876	876	1739	1739

Results: Loss vs. Gain Frame



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Vignette: Taste change

Noah and Liam are of the same age but work in different companies. They both work hard, perform well in their jobs, and have similar annual earnings. The companies Noah and Liam work for offer different products to consumers. Because Noah and Liam have different skills, Noah could not work in Liam's company, and Liam could not work in Noah's company.

A **shift in consumers' taste** boosts sales at Noah's company, leaving Liam's company unaffected. As a result, **Noah's annual earnings increase**, while **Liam's annual earnings remain unchanged**. This change in consumer taste was completely unexpected at the time when Noah and Liam made their career choices.

Please indicate the extent to which you think it is fair or unfair that Noah now earns more than Liam because of this unexpected change in consumer taste. (7-point Likert scale)

Back

Vignette: Trade

Ethan and Lucas are of the same age but work in different occupations. They both work hard, perform well in their jobs, and have similar annual earnings. Because Ethan and Lucas have different skills, Ethan could not work in Lucas' job, and Lucas could not work in Ethan's job.

The sector in which Ethan works experiences an **increase in imports from foreign countries**, leading to higher foreign competition in this sector. The sector in which Lucas works remains unaffected by this increase in foreign competition. As a result, **Ethan's annual earnings decrease**, while **Lucas's annual earnings remain unchanged**. This increase in foreign competition was completely unexpected at the time when Ethan and Lucas made their career choices.

Please indicate the extent to which you think it is fair or unfair that Lucas now earns more than Ethan because of this unexpected increase in foreign competition. (7-point Likert scale)

Back

Vignette: SBTC - Productivity gain

James and David are of the same age but work in different occupations. They both work hard, perform well in their jobs, and have similar annual earnings. Because James and David have different skills, James could not work in David's job, and David could not work in James's job.

Technological advancements lead to innovations, such as new machinery and computer programs, which make David more productive in his job. James' productivity remains unaffected by these innovations. As a result, **David's annual earnings increase**, while **James' annual earnings remain unchanged**. These innovations were completely unexpected at the time when James and David made their career choices.

Please indicate the extent to which you think it is fair or unfair that David now earns more than James because of this unexpected technological advancements. (7-point Likert scale)

Back

Vignette: SBTC - Productivity loss

Michael and Daniel are of the same age but work in different occupations. They both work hard, perform well in their jobs, and have similar annual earnings. Because Michael and Daniel have different skills, Michael could not work in Daniel's job, and Daniel could not work in Michael's job.

Recent innovations in automation have resulted in technology performing some tasks that were part of Michael's job. Daniel's job remains unaffected by these innovations. As a result, **Michael's annual earnings decrease**, while **Daniel's annual earnings remain unchanged**. This automation was completely unexpected at the time when Michael and Daniel made their career choices.

Please indicate the extent to which you think it is fair or unfair that Daniel now earns more than Michael because of this unexpected automation. (7-point Likert scale)

Back

Vignette: Immigration

Mike and Paul are of the same age but work in different occupations. They both work hard, perform well in their jobs, and have similar annual earnings. Because Mike and Paul have different skills, Mike could not work in Paul's job, and Paul could not work in Mike's job.

Due to an **inflow of immigrants**, there are now many more workers who do the same job as Mike, while there is no change in the number of workers in Paul's job. As a result, **Mike's annual earnings decrease**, while **Paul's annual earnings remain unchanged**. This immigration wave was completely unexpected at the time when Mike and Paul made their career choices.

Please indicate the extent to which you think it is fair or unfair that Paul now earns more than Mike because of this unexpected increase in immigration. (7-point Likert scale)

Back

Vignette: Effort

Charles and Thomas are of the same age and work in the same job. They work for different companies but have similar annual earnings.

Charles works harder than Thomas and receives a pay raise. As a result, **Charles' annual earnings increase**, while **Thomas' annual earnings remain unchanged**.

Please indicate the extent to which you think it is fair or unfair that Charles earns more than Thomas because he works harder. (7-point Likert scale)

Back

Vignette: Brute luck

Samuel and William are of the same age and work in the same job at different branches of the same company. They both work hard, perform well in their jobs, and have similar annual earnings.

The company organizes a lottery to determine which of the two equally successful branches will get a pay raise. Samuel's branch wins the lottery. As a result, **Samuel's annual earnings increase**, while **William's annual earnings remain unchanged**.

Please indicate the extent to which you think it is fair or unfair that Samuel now earns more than William because he won the lottery. (7-point Likert scale)

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Potential Mechanisms

Potential Mechanisms

Market luck: only one worker can satisfy a buyer's demand that is

i) based on the buyer's **choice** (revealed preference)

ii) generates a **profit** for the buyer

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i) based on the buyer's **choice** (revealed preference)

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Which channel drives inequality acceptance?

⇒ Additional treatment with only profit and no choice

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Mechanisms: Choice versus Profit of Producer

	Buyer	Exchange	Profit	Choice	Source of inequality
Market luck	✓	✓	✓	✓	random
Brute Luck	✗	✗	✗	✗	random
Effort	✗	✗	✗	✗	performance
Profit only	✓	✓	✓	✗	random

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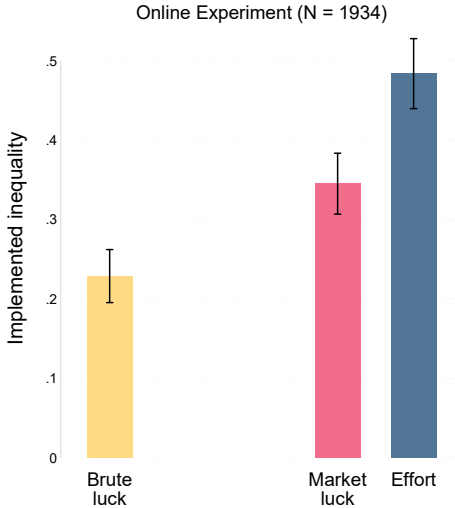
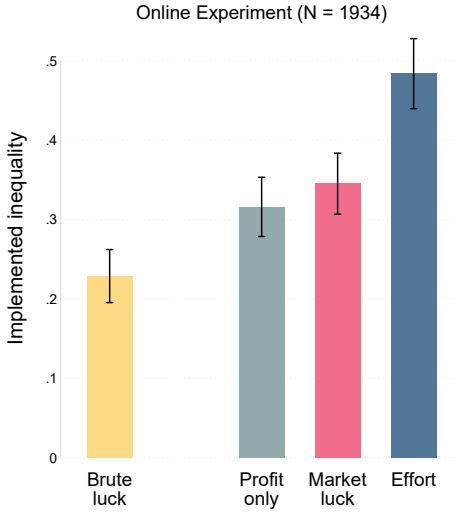
Mechanisms: Choice versus Profit



Mechanisms: Choice versus Profit



Mechanism Result

Result 2: *Spectators accept significantly higher levels of inequality if the high-income worker generated a profit for the randomly matched buyer.*

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⇒ Additional treatment with “buyer” but no exchange with worker

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Robustness: Presence of Buyer - No Exchange

	Buyer	Exchange	Profit	Choice	Source of inequality
Market luck	✓	✓	✓	✓	random
Brute Luck	✗	✗	✗	✗	random
Effort	✗	✗	✗	✗	performance
Profit only	✓	✓	✓	✗	random
No exchange	✓	✗	✗	✗	random

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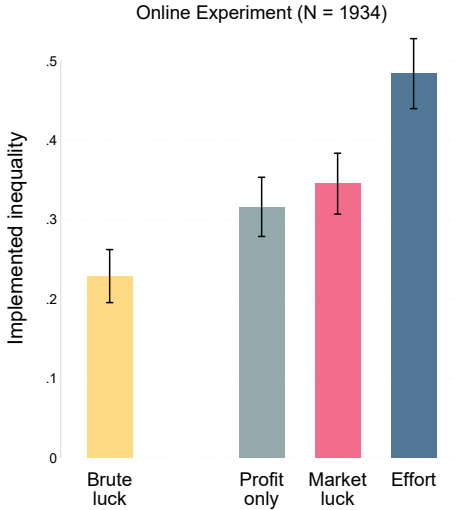
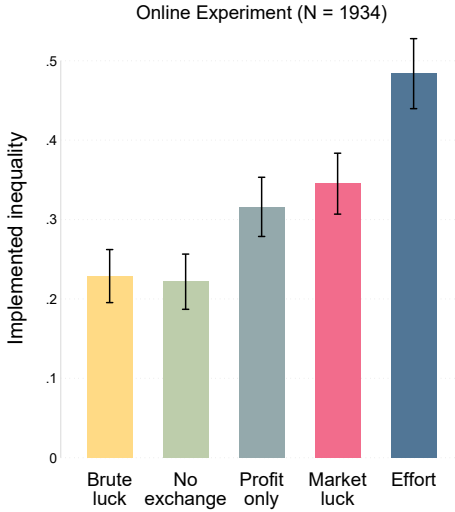
Robustness: Presence of Buyer - No Exchange



Robustness: Presence of Buyer - No Exchange



Robustness Result

Result 3: *The random matching of workers with a buyer as the source of inequality does not influence the spectators' acceptance of inequality.*

⇒ *Only if the buyer earns a profit from the worker's labor do spectators perceive it as fairer for this worker to earn a high income.*

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Design: Anticipation

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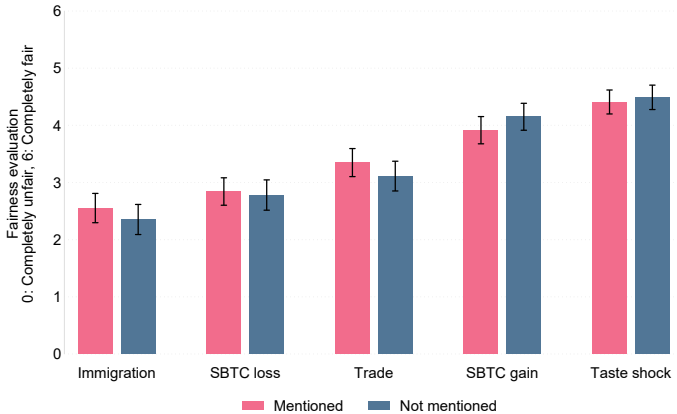
James and David are of the same age but work in different occupations. They both work hard, perform well in their jobs, and have similar annual earnings. Because James and David have different skills, James could not work in David's job, and David could not work in James's job.

Technological advancements lead to innovations, such as new machinery and computer programs, which make David more productive in his job. James' productivity remains unaffected by these innovations. As a result, **David's annual earnings increase**, while **James' annual earnings remain unchanged**. ~~These innovations were completely unexpected at the time when James and David made their career choices.~~

Please indicate the extent to which you think it is fair or unfair that David now earns more than James because of these ~~unexpected~~ technological advancements. (7-point Likert scale)

Results: Anticipation



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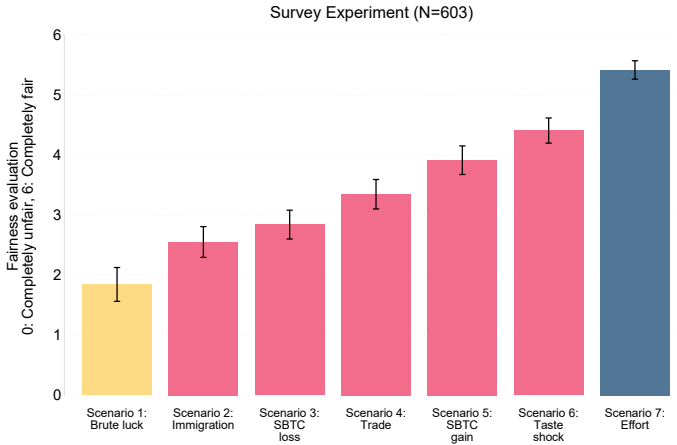
Main Result: Fairness Evaluations by Scenario



Back Loss vs. gain