Compensation and Discrimination 1

SOC 121D: People Analytics

Austin van Loon

Feedback from the Review Surveys

- Thanks for the feedback!
- Apologies for saying we'd get out of class early on Thursday
- I'm reaching out to see what we can do about the room temperature
- While we're figuring this out, please be respectful to other folks in the class
- When we do group work, I'll be more explicit about instructions (and write them out)
- AI, data science, and people analytics
- I will try to keep up the group work!

Follow-ups

- Graph relating paper grade and number of methods modules completed to final paper grade shared on Canvas under "files". Also on this slide

- Methods Module 1 is graded
  - Be sure you answer questions in the guided section and the "Your Turn!" section
  - Be sure to answer each part of each question
  - Be sure to run your code from beginning to end "from scratch" (Runtime > Restart and run all)

- Still working on the example paper
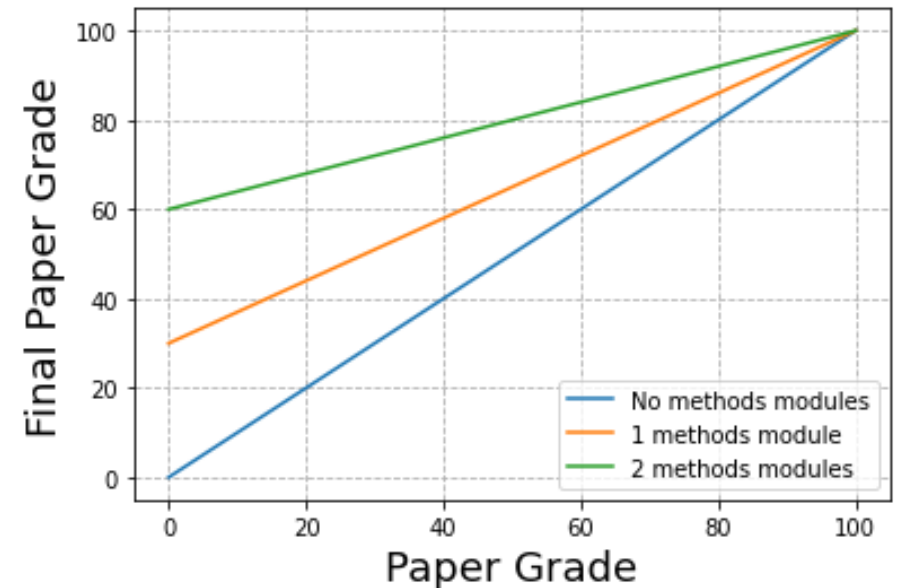
This week

- Today
    - The Gender pay gap
    - Statistical significance and controls
    - Types of discrimination
    - Pay equity analysis
- Thursday
    - Finish lecture from today
    - In-class pay equity analysis exercise

$$\frac{\text{👩 } \$928}{\text{👨 } \$1100} = 0.84$$

The Gender Pay Gap

$$\frac{\$928}{\$1100} = 0.84$$

President Biden ✔
@POTUS
🏳 United States government official

My Administration is committed to closing the gender pay gap ensuring that all Americans have a fair and equal opportunity to get ahead, so that one day soon we can render Equal Pay Day a relic of the past.

POWHER
NEW YORK

EQUAL PAY DAY 2022

March 15 | #EqualPayDayNY
Visit powherny.org for Details

THIS ISN'T
SEXISM
IT'S JUST COMMON SENSE

The Gender Pay Gap

Key concepts for understanding research on the wage gap and pay equity

- **Statistical significance**: the probability we'd see something as "extreme" as our results under the "null hypothesis"

- **Statistical controls**: our attempt to measure the importance of one variable while "holding other factors constant"; an attempt to artificially create an apples-to-apples comparison

$$y \longleftarrow \boxed{\text{nature}} \longleftarrow x$$

Is this coin fair?

Is this coin fair?

23 heads; 27 tails

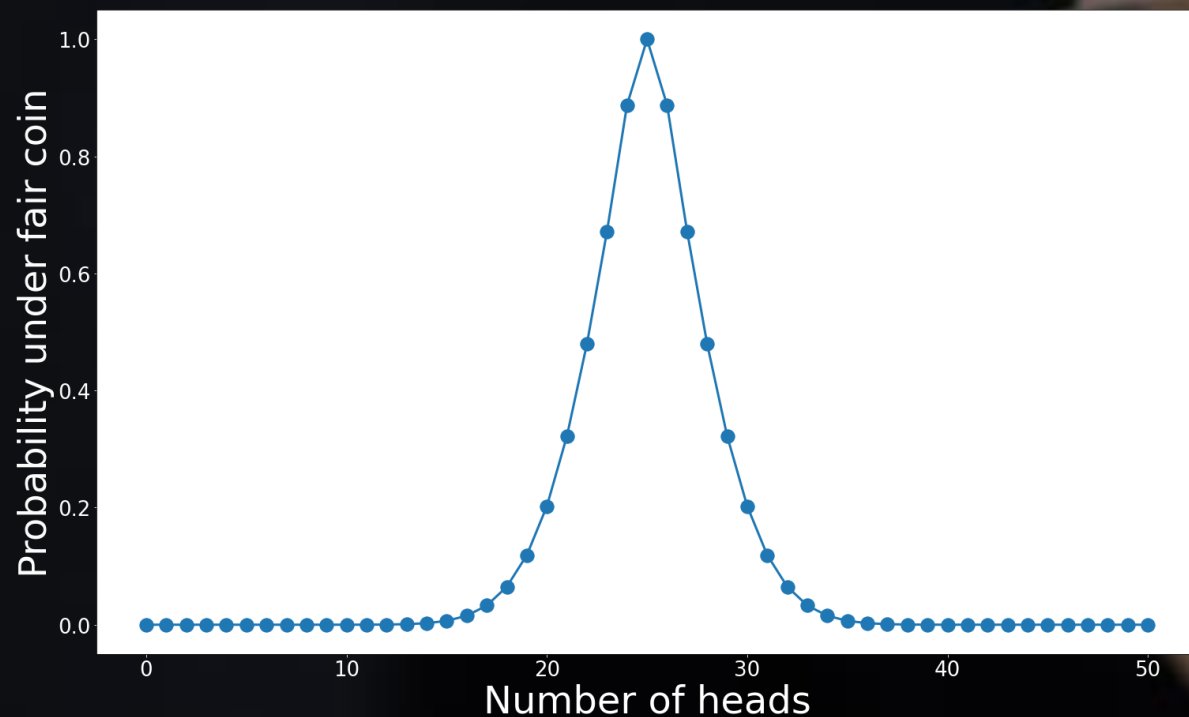# Is this coin fair?

23 heads; 27 tails
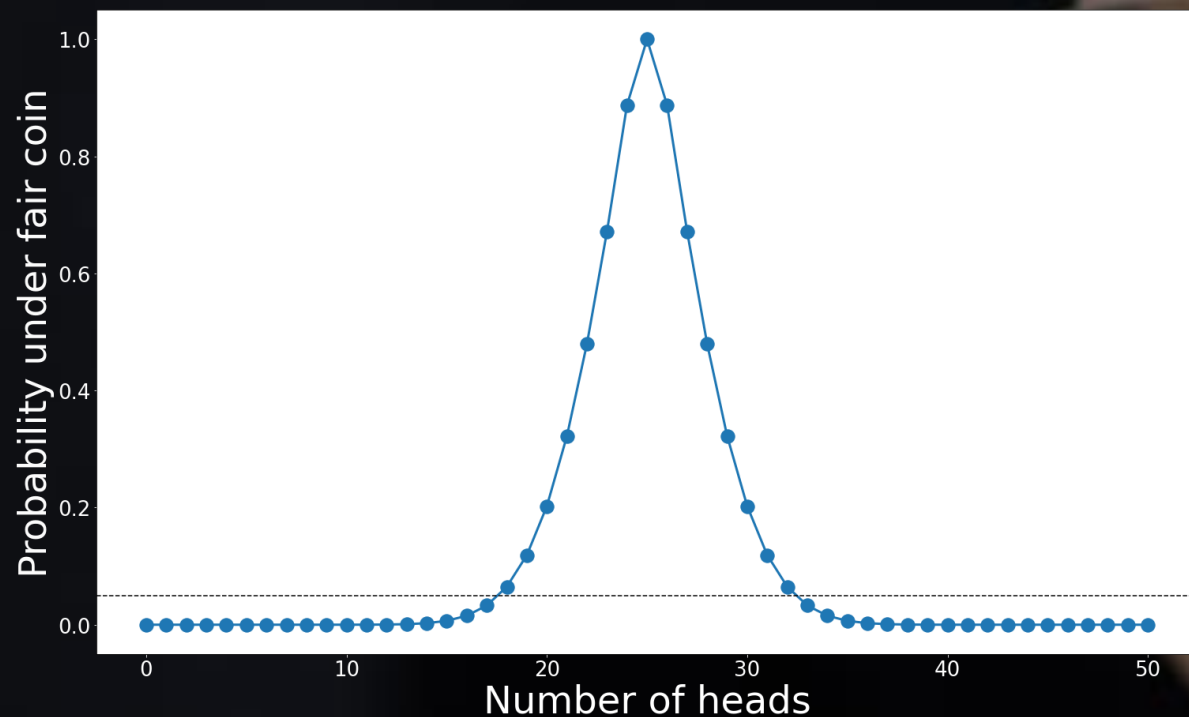**45 heads; 5 tails**

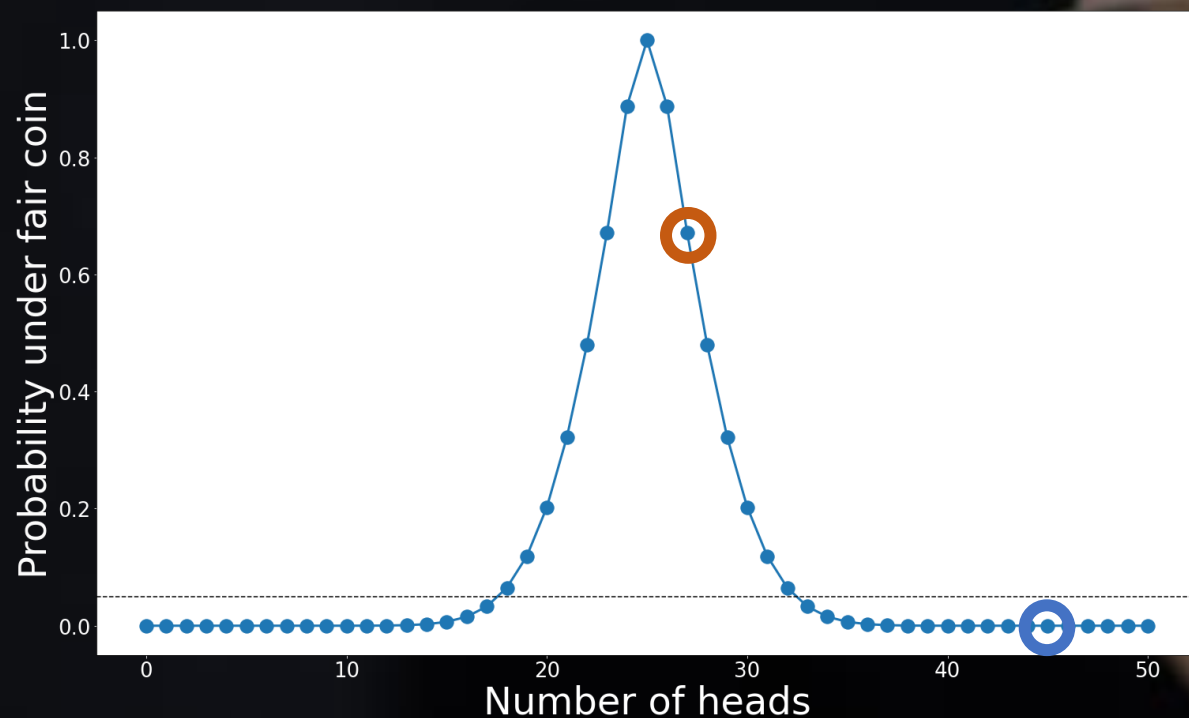# Is this coin fair?

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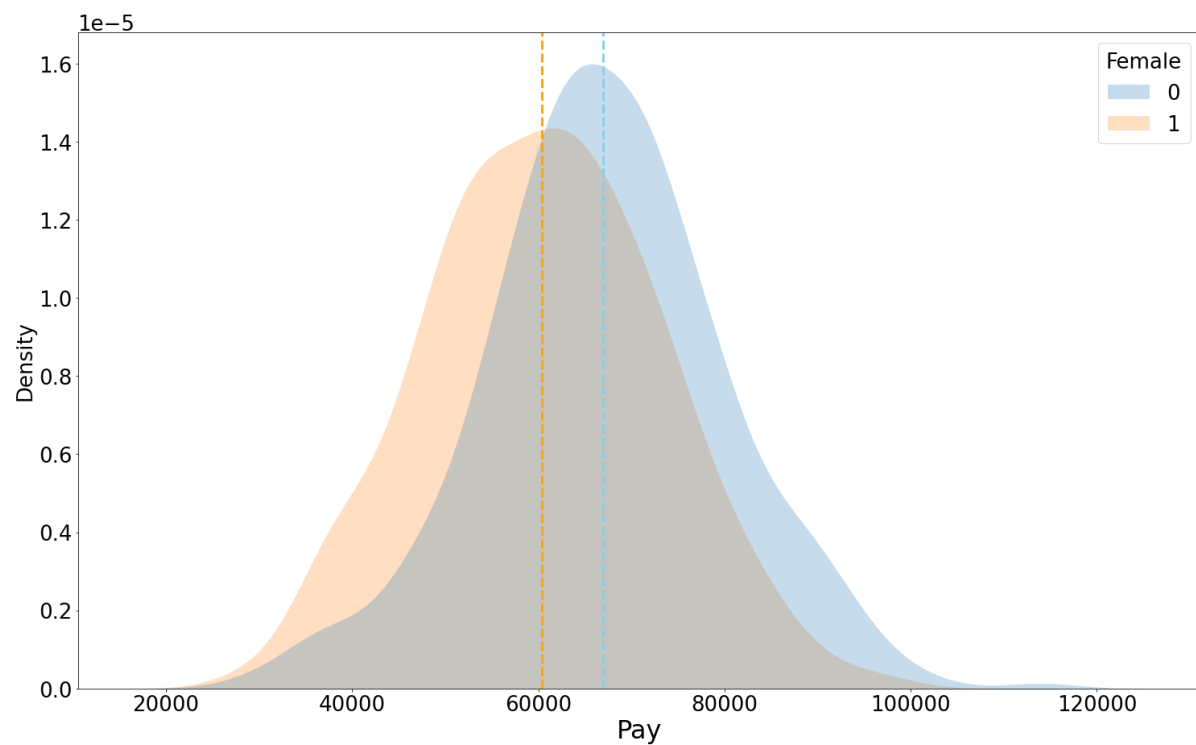**45 heads; 5 tails**
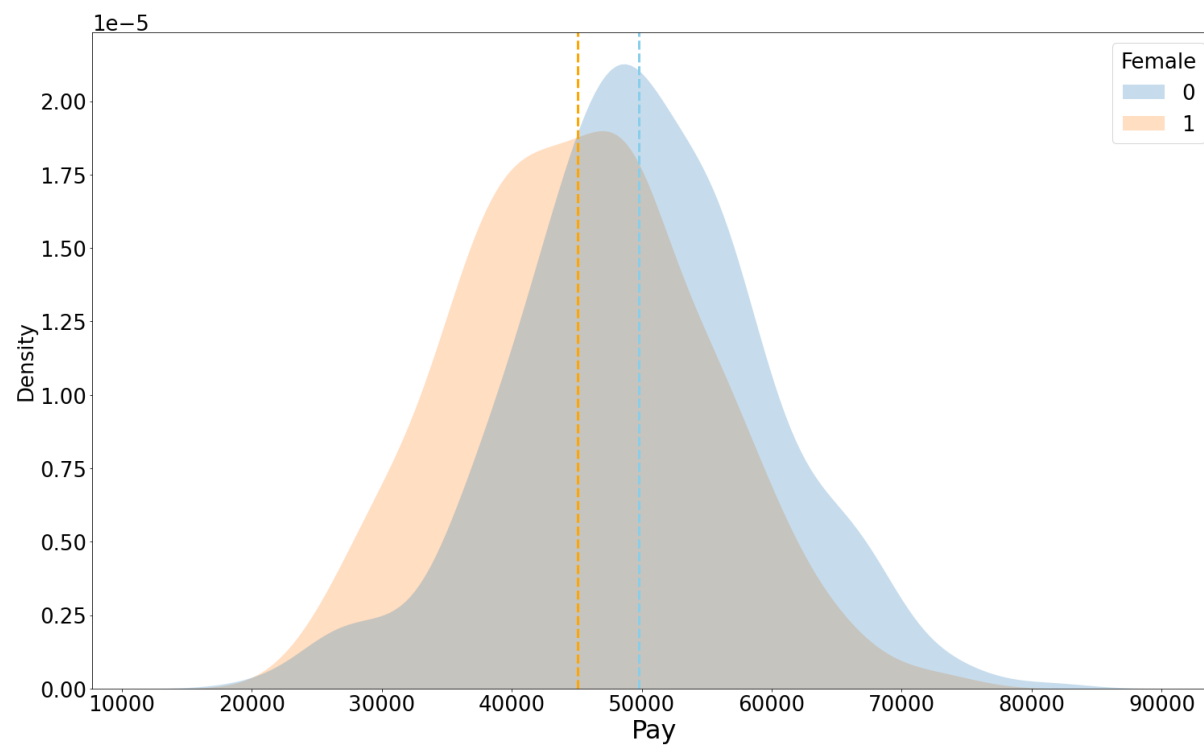
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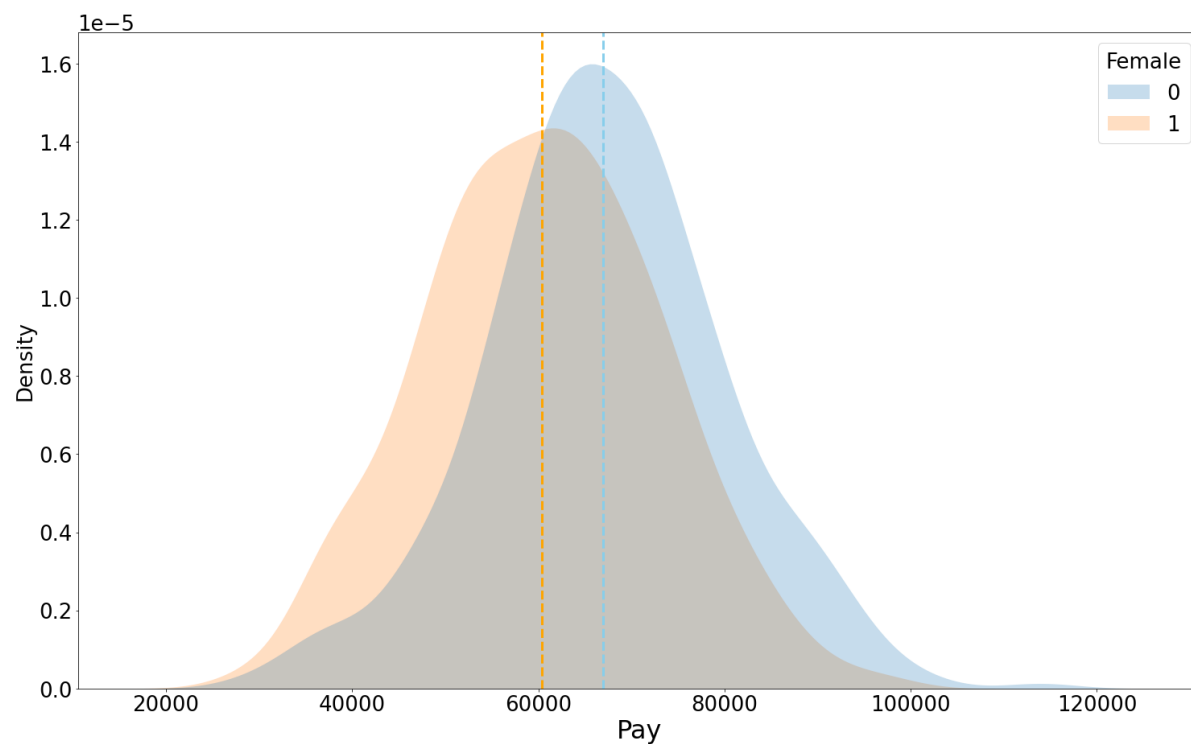**23 heads; 27 tails**
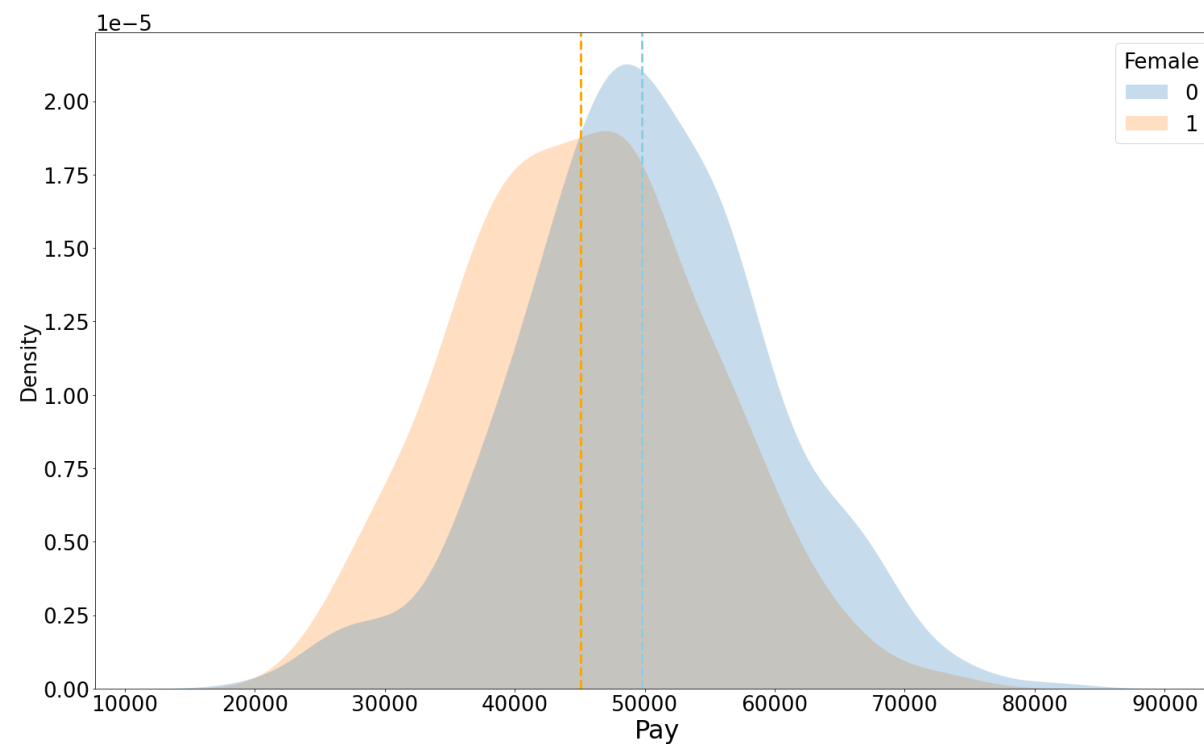
45 heads; 5 tails

Unadjusted pay gap: 10%   Unadjusted pay gap: 10%

Unadjusted pay gap: 10%
($P = 1.5 * 10^{-13}$)

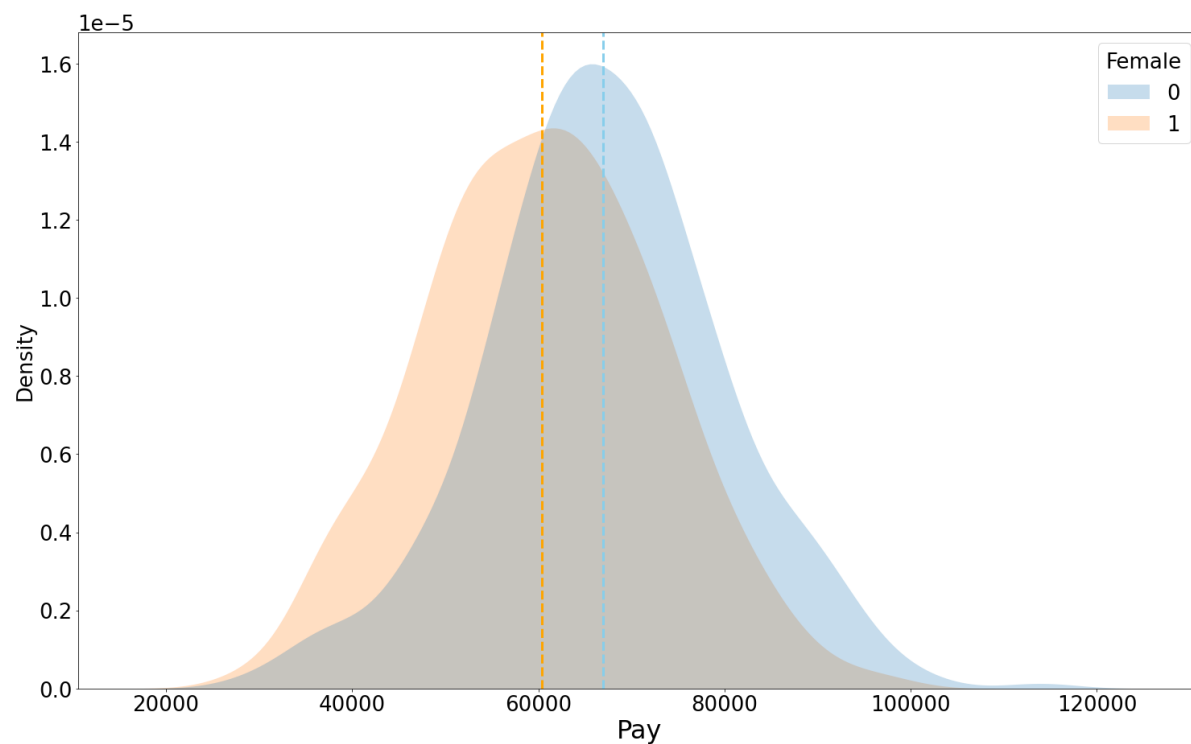Unadjusted pay gap: 10%
($P = 7.5 * 10^{-12}$)

Key concepts for understanding research on the wage gap and pay equity analysis

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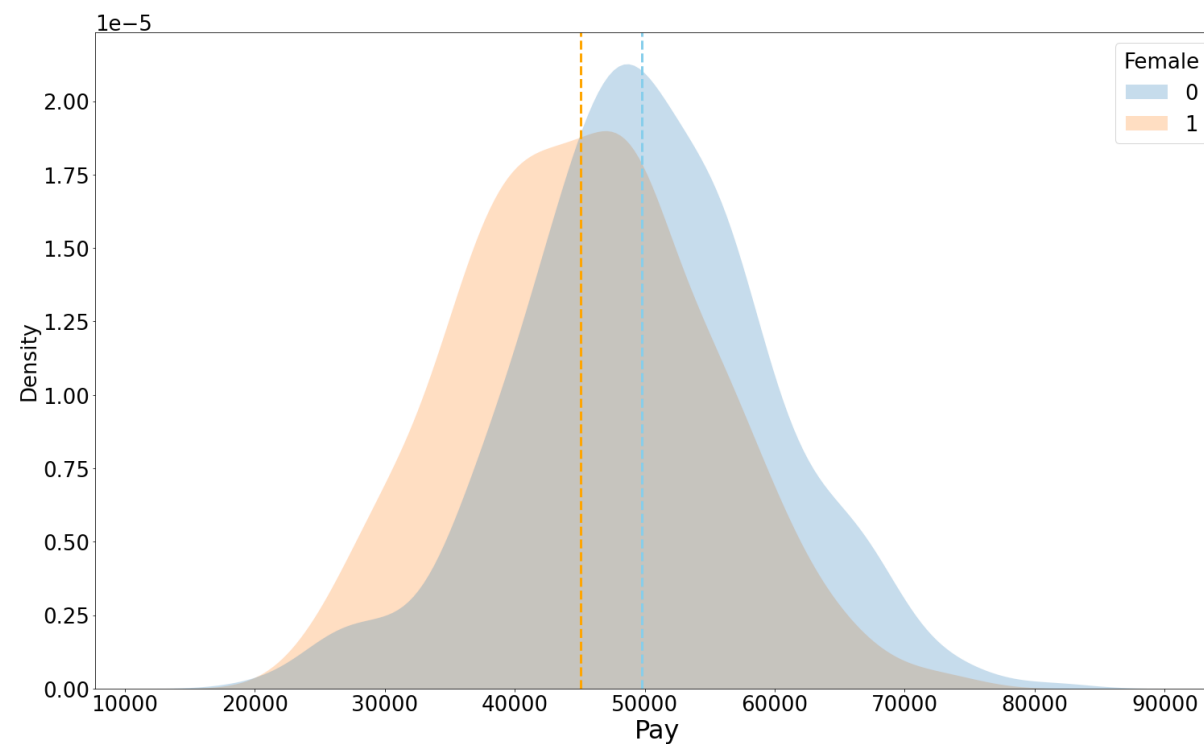
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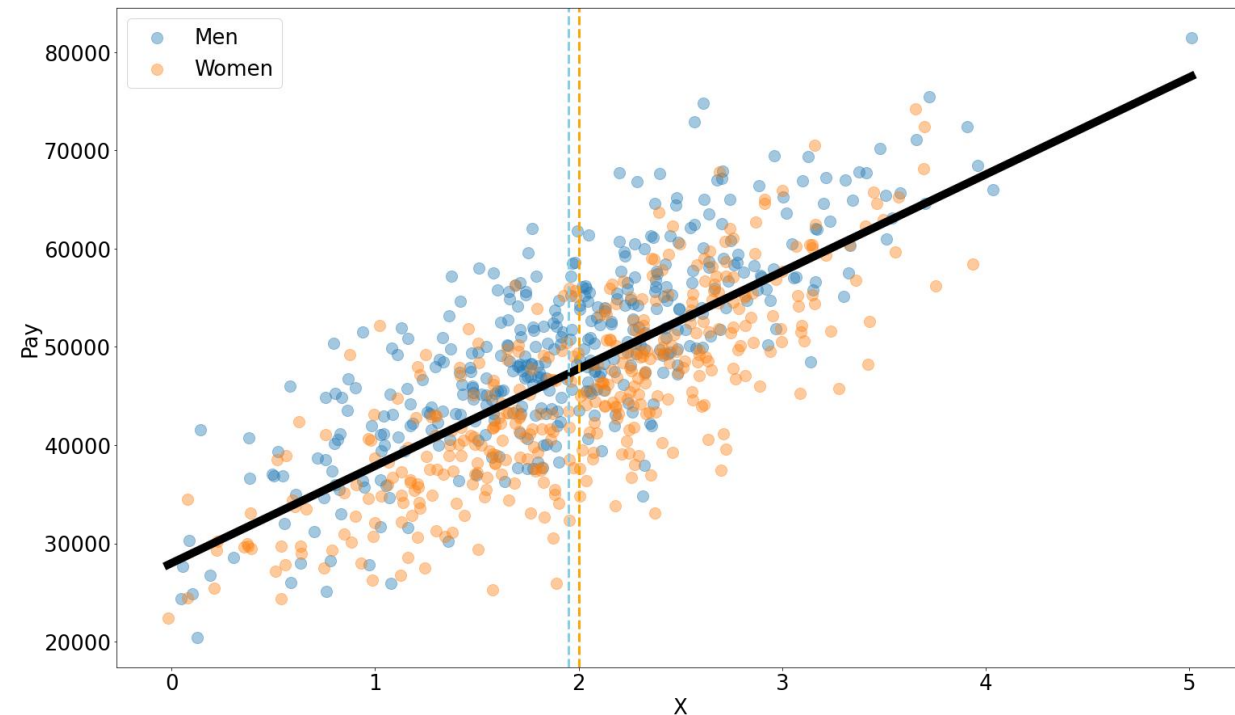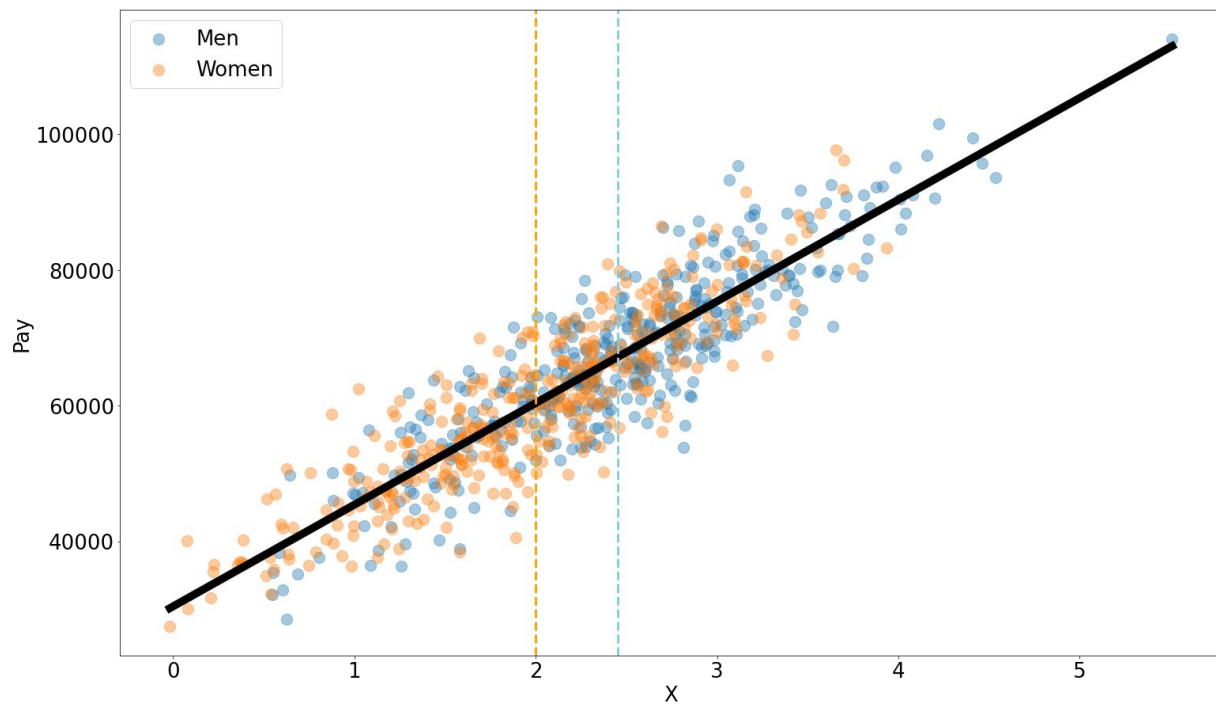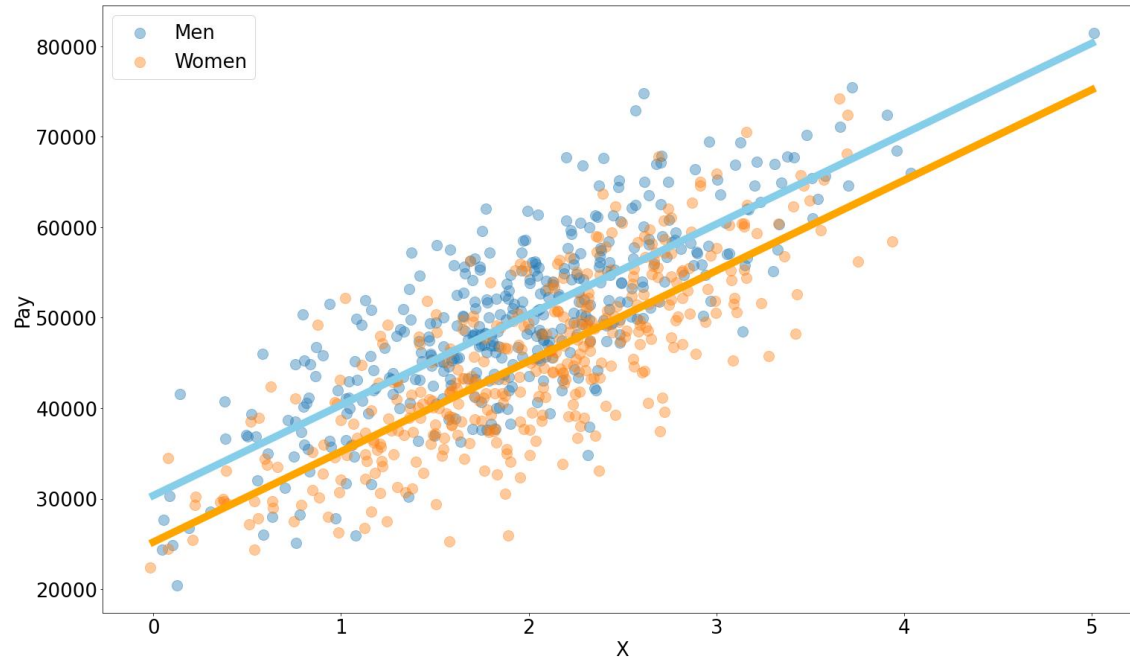
Adjusted pay gap: 10%
(P = 8.6 * 10^{-32})
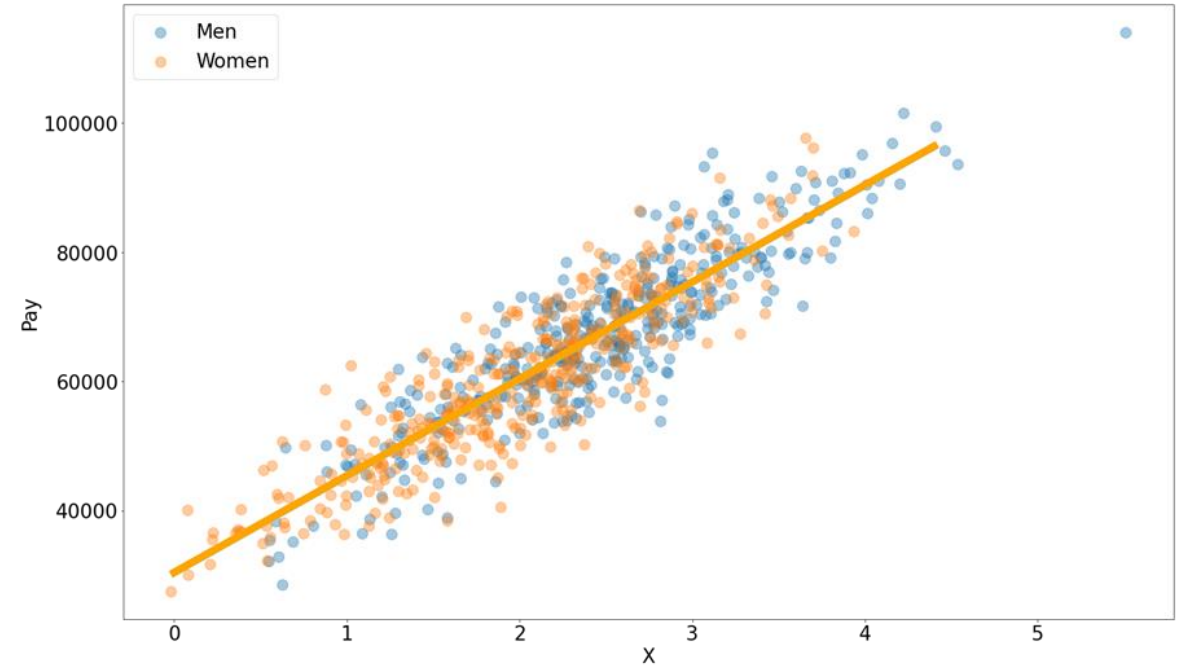
Adjusted pay gap: -0.0009%
(P = 0.899)

$$Pay_i = \alpha + \beta^1 X_i + \beta^2 Female_i + \epsilon_i$$

$$Pay_i = \alpha + \beta^1 X_i + \boxed{\beta^2} Female_i + \epsilon_i$$

$$P(\beta^2 = 0) = ?$$

Female-to-Male Earnings Ratio: 1960 to 2020
(Full-time, year-round workers, aged 15 and older)
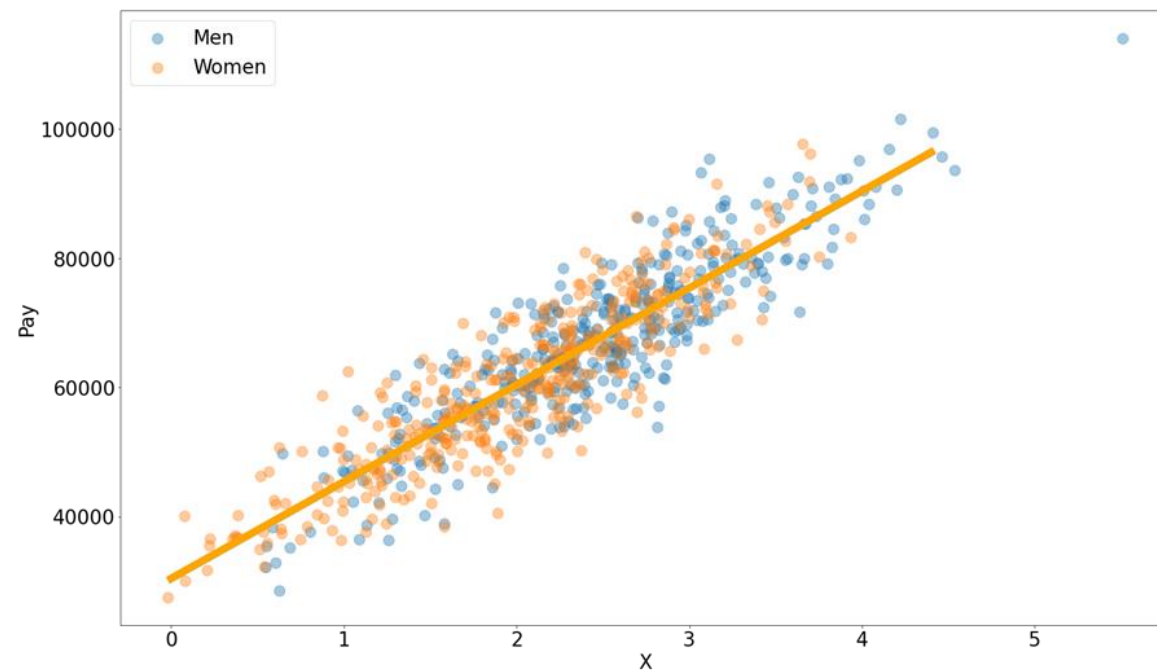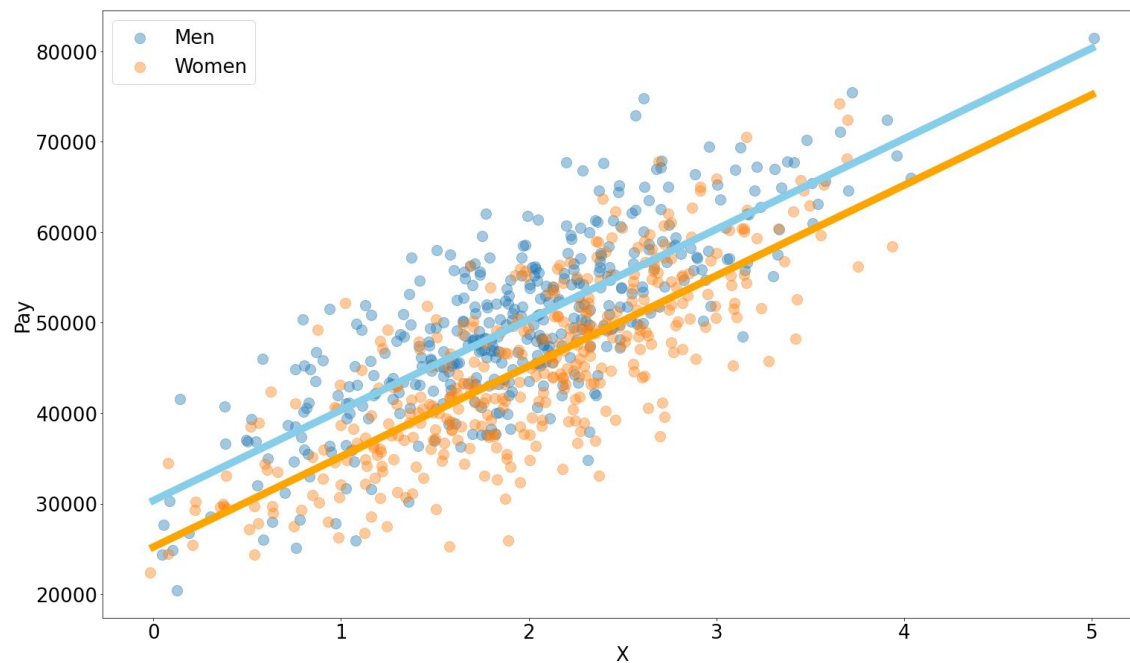
Ratio in percent

Recession

Female-to-male earnings ratio

60.7%

83.0%

Notes: Workers aged 15 and older as of March of the following year with earnings. The data for 2017 and beyond reflect the implementation of an updated processing system. The data for 2013 and beyond reflect the implementation of the redesigned income questions.
Source: U.S. Census Bureau, Current Population Survey, 1961 to 2021 Annual Social and Economic Supplements (CPS ASEC).

United States® Census Bureau

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Women's-to-men's earnings ratio, by race and Hispanic ethnicity, for wage and salary workers who usually worked full time, 2000–21 annual averages
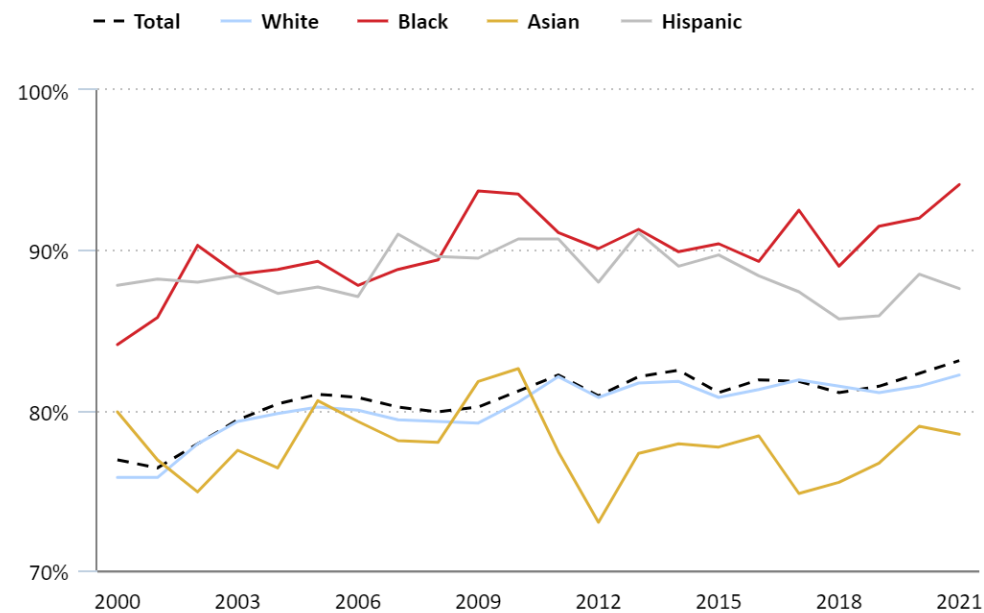
- - Total — White — Black — Asian — Hispanic

Click legend items to change data display. Hover over chart to view data.
Source: U.S. Bureau of Labor Statistics.

Median usual weekly earnings of full-time wage and salary workers by race, Hispanic or Latino ethnicity, and sex, third quarter 2021
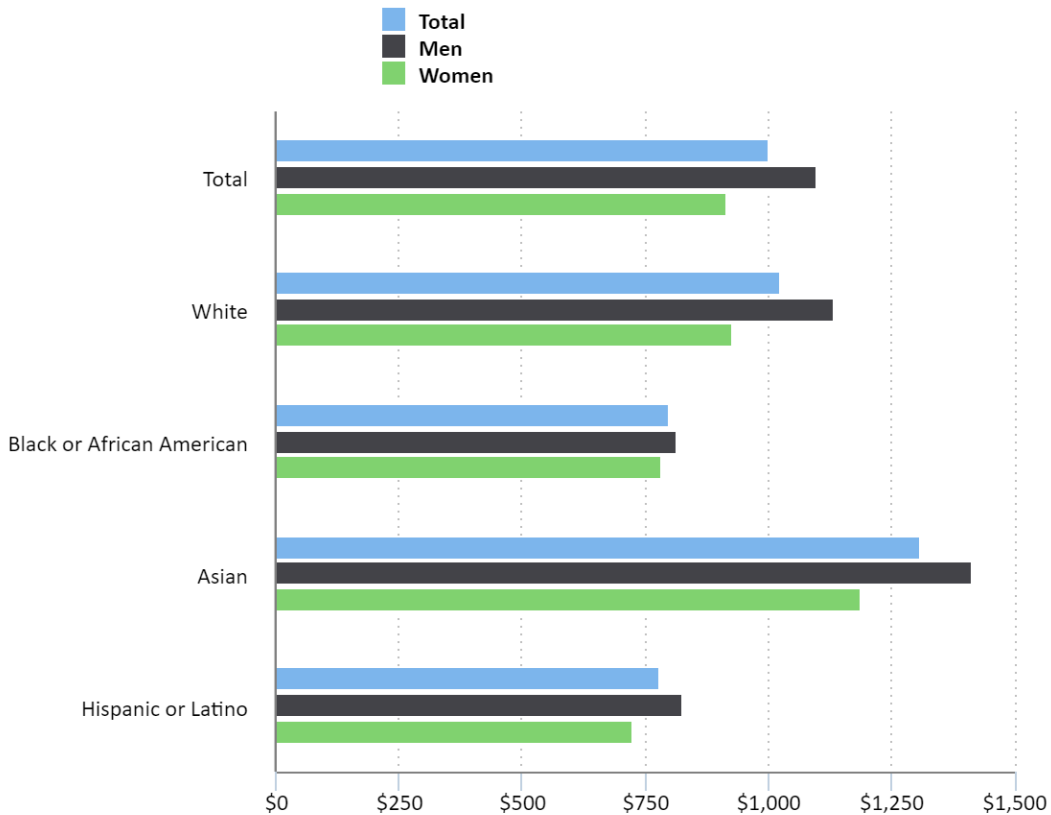
- Total
- Men
- Women

Click legend items to change data display. Hover over chart to view data.
Source: U.S. Bureau of Labor Statistics.

"Adjusting the Gap"

- Estimates for the current adjusted pay gap range from 5% to 1%
  - If a man makes $60k/year, a woman will make $59.4k - $57k

- For women without children, some estimate there is no adjusted pay gap

- In class, we already showed how these models that rely on correlation can produce unreliable estimates depending on the causal structure of variables

- Also, there's an ever-ongoing debate about **which** variables to include and **what it means** that adjusted gaps are smaller than unadjusted ones
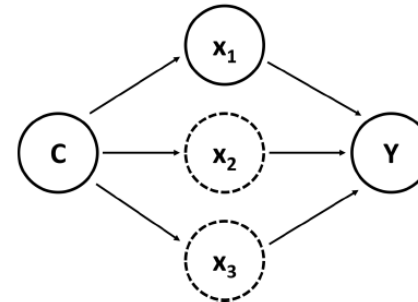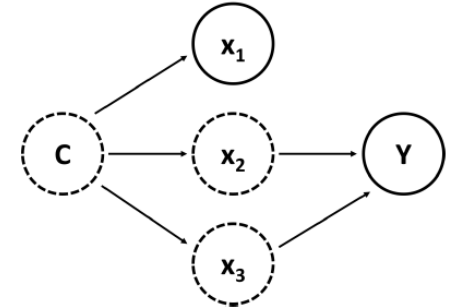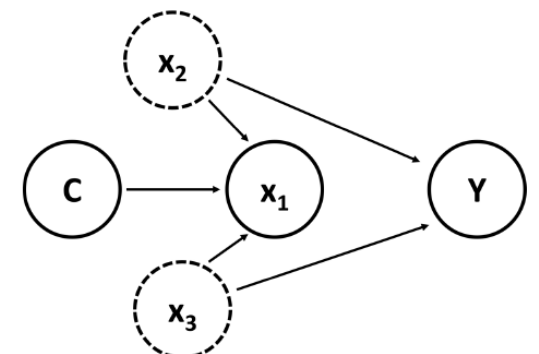
Discrimination Within Firms

Three Types of Discrimination
(Petersen and Saporta 2014)

1. **Within-job discrimination**: "…women receive lower wages in than men within a given occupation within a given establishment." (p. 853)
   A. (Relatively) easy to catch
   B. Unlikely to account for much of the gender pay gap

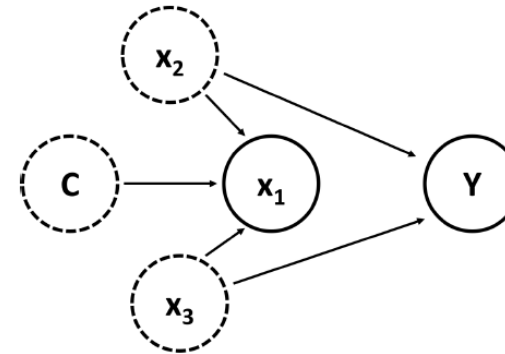2. **Allocative discrimination**: "…women are differentially allocated to occupations and establishments that differ in the wages they pay. This involves discrimination in the matching process at the point of hire, in subsequent promotions, and through differential dismissal" (p. 853)
   A. More difficult to catch
   B. Likely to account for more of the gender pay gap

3. **Valuative discrimination**: "…female-dominated occupations are paid lower wages than male-dominated ones, although skill requirements and other wage-relevant factors are the same."
   A. This is difficult to show convincingly
   B. Like to account for much of the gender pay gap

(Alleged) Allocative Discrimination at Google

- From the lawsuit's initial filing: "Plaintiffs allege that Google has violated and continues to violate the Unfair and Unlawful Business Practices Act … in the following ways: (a) assigning women to lower "Levels" (i.e., salary bands) than it assigns men; (b) assigning women to jobs that do not compensate as highly as those populated largely by men; (c) promoting women more slowly and at lower rates than it promotes men" (Ellis vs. Google, 2017)

- Google settles this suite in June with $118 million
  - Agrees to let outsiders evaluate their pay practices
  - Have outsiders report on whether they follow their recommendations

Allocative Discrimination in Assignments

MITSloan
Management Review

Assignments Are Critical Tools to Achieve Workplace Gender Equity

Work assignments can be a powerful means of propelling employees' growth but — unless managed deliberately — they can also undermine efforts to build a diverse workforce.

Erin Macke, Gabriela Gall Rosa, Shannon Gilmartin, and Caroline Simard · January 04, 2022

Women are often over-looked for tasks that are beneficial for careers (large, visible, and important)

Very few organizations even measure this (creating a permissive opportunity structure)

Valuative Discrimination in CS

- Software development used to be
  - relatively popular among women (in 1970, 25% of workers were women, making it the 129th out of 388 occupations)
  - fairly well paid ($63.7k in 2022 dollars; ranked 76th out of 338)
- Software development now
  - Relatively unpopular among women (in 2020, 21% women; ranked 206/388)
  - Very well paid ($116.8k in 2022 dollars; ranked 19 out of 338)
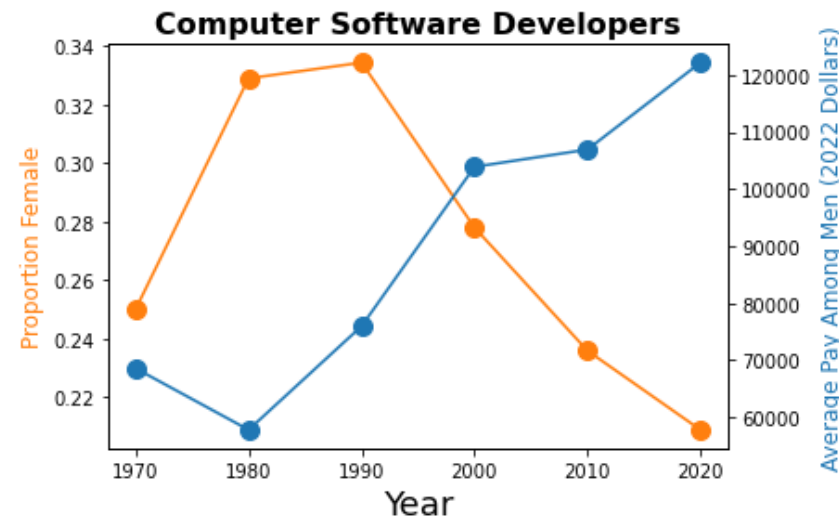
NOTE: Data from a random sample of the American Community Survey
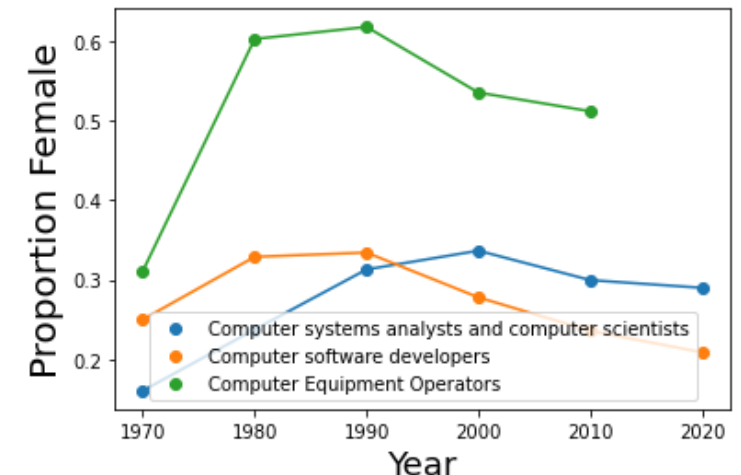
NOTE: Data from a random sample of the American Community Survey

Other Cases of Valuative Discrimination

- In the state of Washington (1972), "stockroom attendants" (mostly men), made more than dental hygienists (mostly women)

- In Denver (1975), tree trimmers and sign painters (mostly men) were paid more than nurses (mostly women)

- In San Jose (mid-70s), washing cars for the city (done mostly by men) could earn you more money than being a secretary

Linda M. Blum

BETWEEN FEMINISM AND LABOR

The Significance of the Comparable
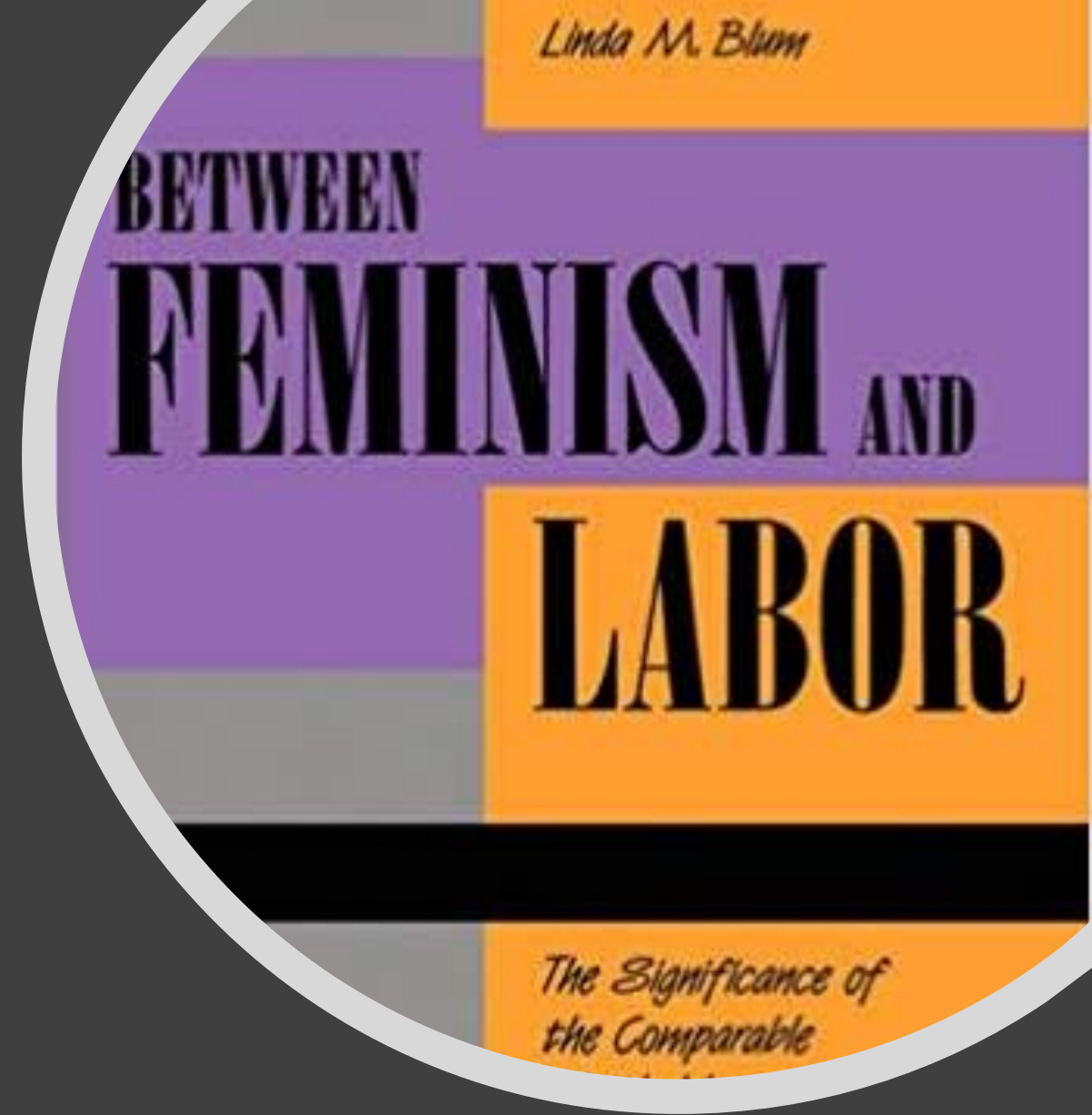
Shifting the Opportunity Structure

Accounting for the Gap: A Firm Study
Manipulating Organizational Accountability and
Transparency in Pay Decisions

Emilio J. Castilla
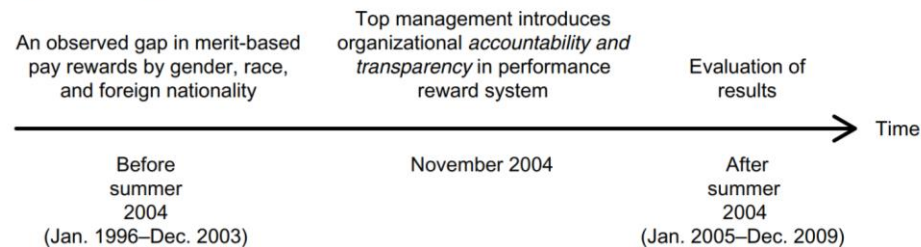MIT Sloan School of Management, Massachusetts Institute of Technology, Cambridge, Massachusetts 02142, ecastilla@mit.edu

Figure 3   Time Sequence of Key Events at ServiCo

An observed gap in merit-based pay rewards by gender, race, and foreign nationality

Top management introduces organizational *accountability and transparency* in performance reward system

Evaluation of results

Time

Before summer 2004 (Jan. 1996–Dec. 2003)

November 2004

After summer 2004 (Jan. 2005–Dec. 2009)

Accountability and transparency change the opportunity structure for discrimination

At this firm, Castilla saw the elimination of pay gaps for gender, race, and nationality after increasing these

Pay Equity Analysis

- Are workers in a particular organization being paid fairly?
- Simple idea…
    1. Decide on a set of "fair"/"neutral" characteristics folks should be paid based on (e.g., job title, hours worked, performance evaluations)
    2. Predict the pay of employees on the basis of these characteristics AND characteristics of concern (e.g., gender, race)
    3. If the coefficient(s) on these latter characteristics is (are) "significant", there's pay inequity.
    4. If the coefficient(s) isn't (aren't) "significant", there's no pay inequity
- Questions for the class….
    1. Which forms of discrimination should this uncover?
    2. Which forms of discrimination could this not possibly cover?
- There's also a fundamental issue with how statistical significance is used in this framework

Why Invest in Pay Equity?

- For companies doing business with the federal government, disparate pay is illegal in the US (Equal Pay Act, Title VII)
  - Otherwise, it depends on the state (e.g., in Alabama there are no such laws)
- Competition might poach your under-valued talent
- Many Americans (at least say they) don't want to work in a company with pay disparities
- You want everyone to agree that the pay structure is fair

Some additional notes on pay disparities

Beholding Inequality: Race, Gender, and Returns to Physical Attractiveness in the United States[1]

Ellis P. Monk, Jr., Michael H. Esposito, and Hedwig Lee

Trajectory Guarding: Managing Unwanted, Ambiguously Sexual Interactions at Work

Chloe Grace Hart

See you Thursday!