Applications of RCT in Labor Economics: Gender Gap in Labor Market

Prof. Tzu-Ting Yang
楊子霆

Institute of Economics, Academia Sinica
中央研究院經濟研究所

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Gender Gap in Labor Market: Facts and Theoretical Framework

Gender Gap in Labor Market

Facts

- Gender inequality in earnings and wage rates continues to be substantial in all countries
  - Although the gap considerably converged over the last century
  - The process of convergence has slowed down

Gender Gap in Labor Market

Facts

Francine D. Blau and Lawrence M. Kahn (2017), "**The Gender Wage Gap: Extent, Trends, and Explanations**", Journal of Economic Literature, 55(3), 789–865

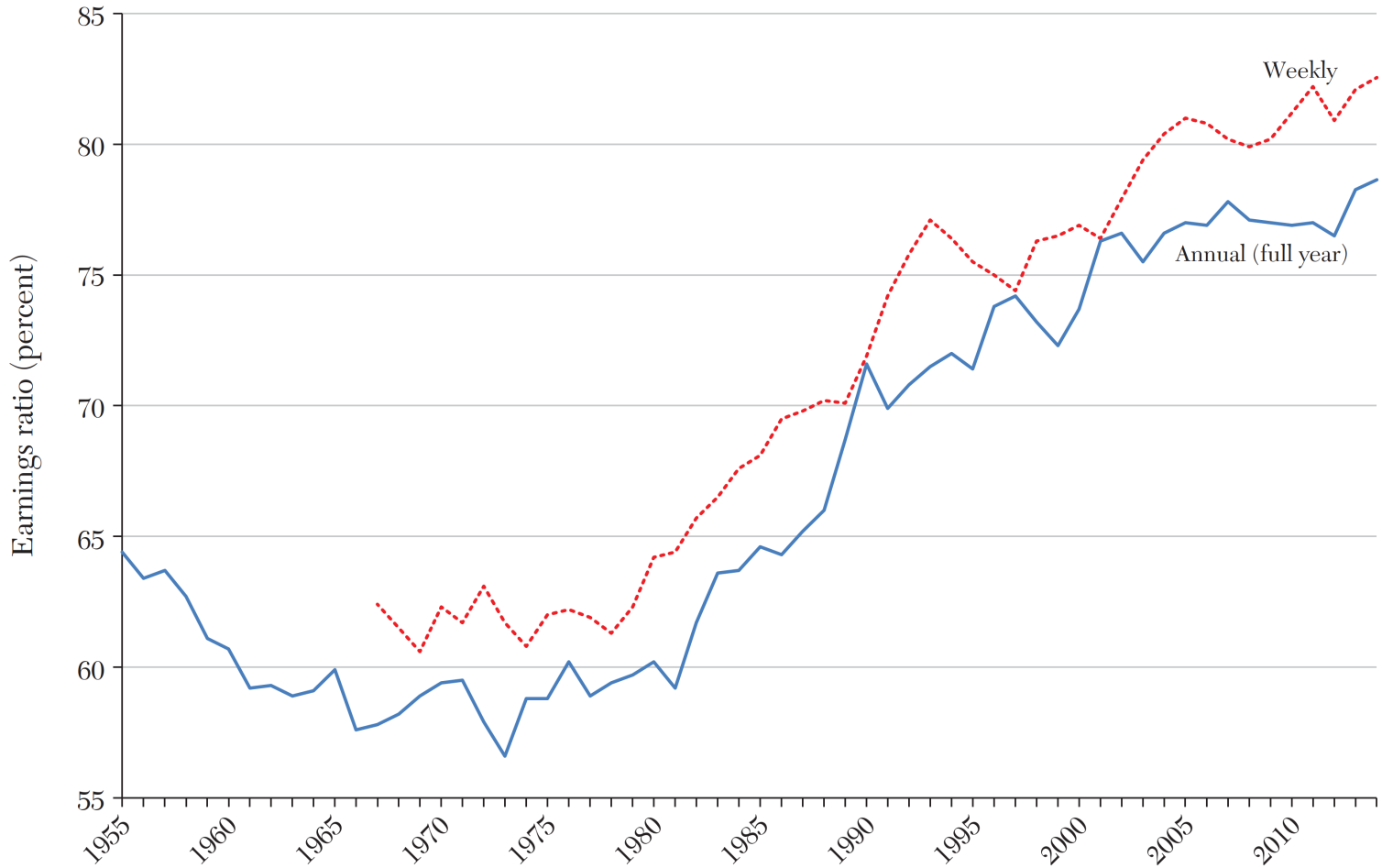
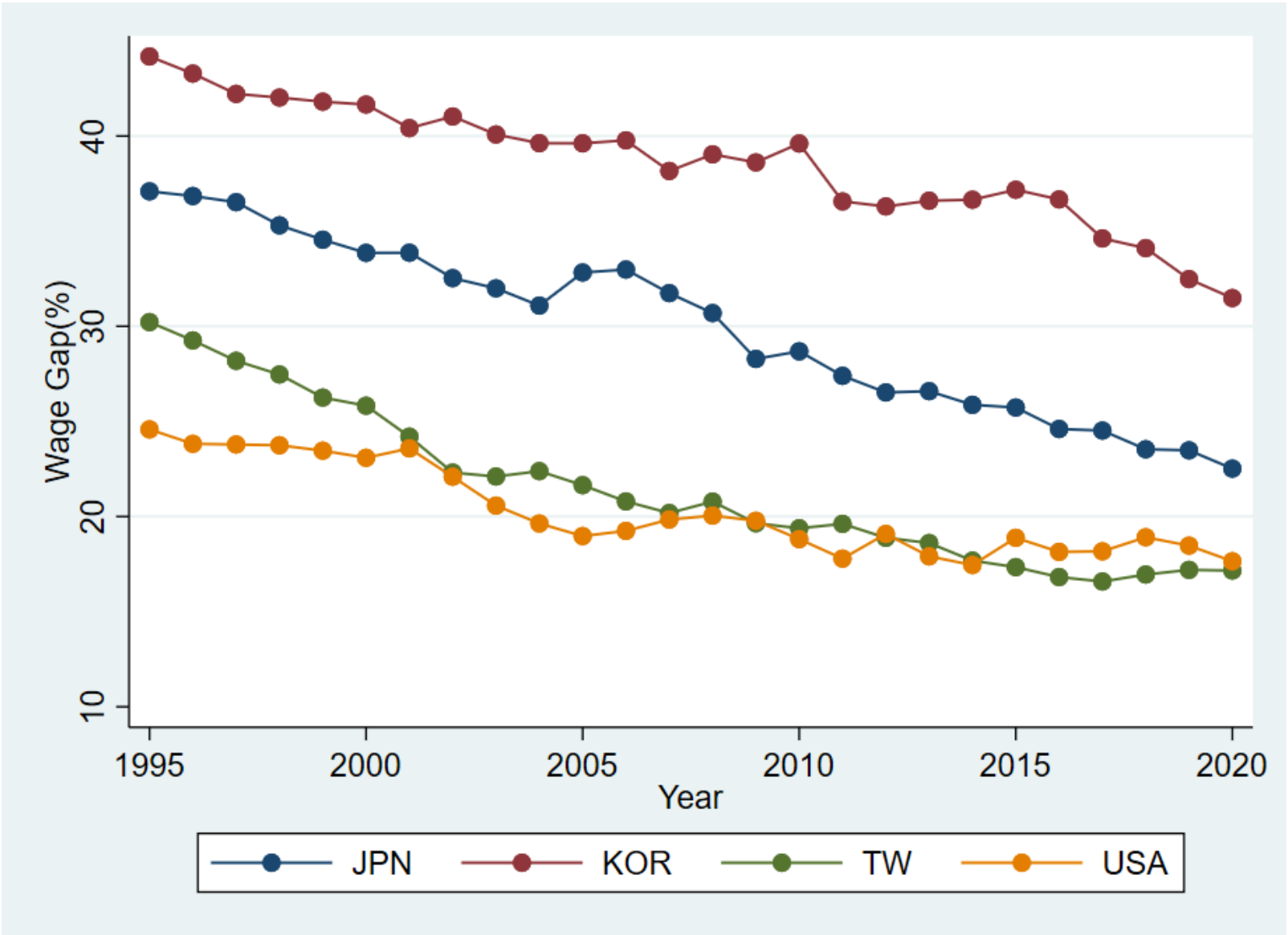


Figure 1. Female-to-Male Earnings Ratios of Full-Time Workers 1955–2014

Gender Gap in Labor Market

Facts



Gender Gap in Labor Market

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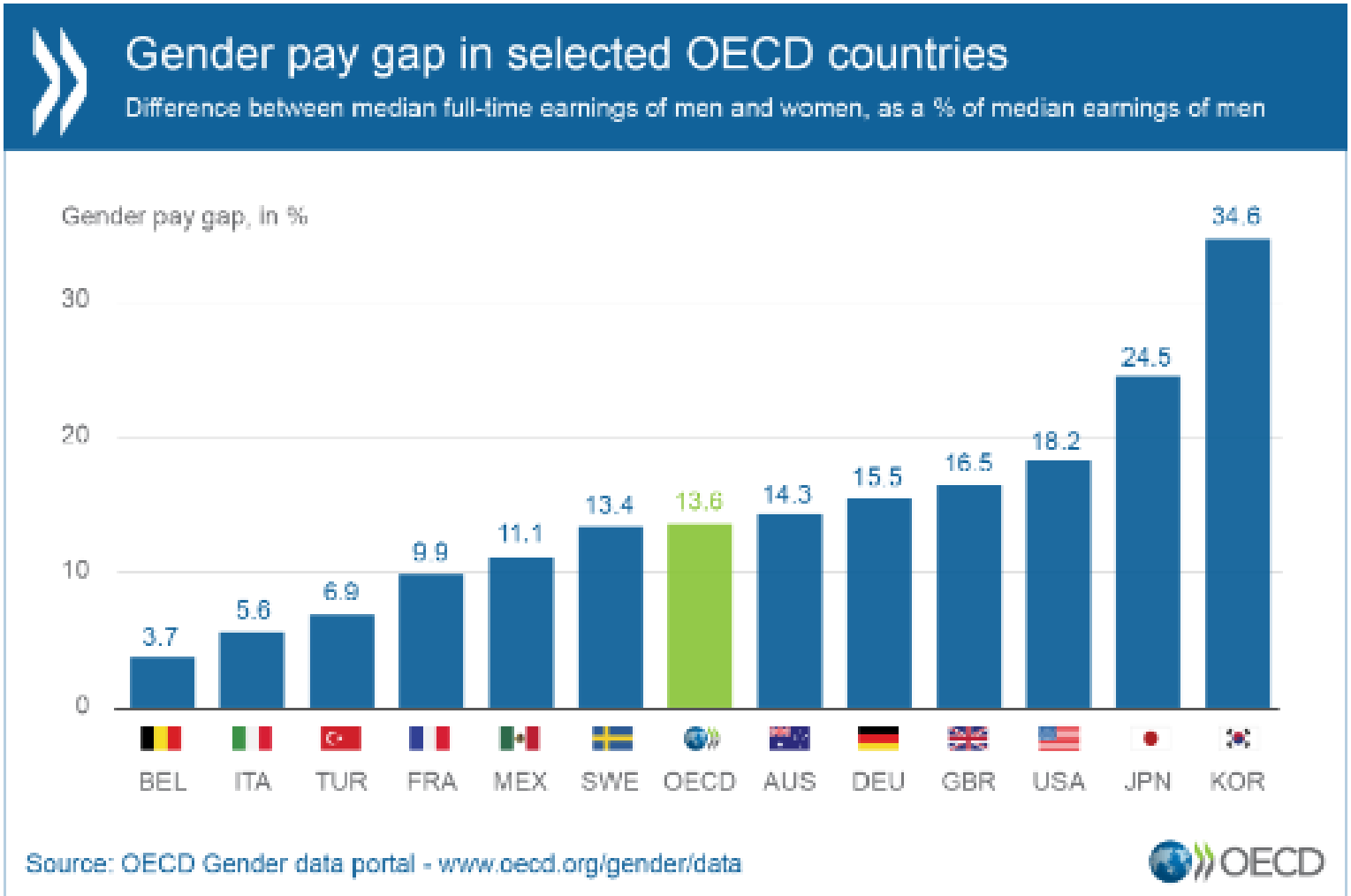


Gender Gap in Labor Market

Theoretical Framework: Becker's taste-based model

- Becker's taste-based model:
  - Becker (1957), Charles and Guryan (2008)
- Becker conceptualized discrimination as a taste
  - The discriminatory tastes were held by employers, coworkers, and customers or clients
  - In order to compensate for the disutility of employing women, discriminatory employers will only hire women at a sufficient wage discount

Gender Gap in Labor Market

Theoretical Framework: Becker's taste-based model

- Predictions from Becker's taste-based model:
  - Competitive forces should reduce or eliminate employer discrimination in the long run
  - The least discriminatory firms hire more lower-priced female labor
  - They have lower costs of production and should drive the more discriminatory firms out of business

Gender Gap in Labor Market

Theoretical Framework: Statistical discrimination model

- Statistical discrimination model:
  - Phelps (1972), Arrow (1973)
- Assume there is uncertainty and imperfect information when hiring people
- Employers make hiring decisions on the basis of the **average** characteristics of the group
  - Suppose the average labor productivity of women is lower than that of men
  - As a consequence, firms may pay women less even if the specific woman indeed has higher productivity

Gender Gap in Labor Market

Theoretical Framework: Statistical discrimination model

- If statistical discrimination is accompanied by feedback effects
- This could result in persistent discriminatory pay differences
  - For example, employers incorrectly expect that women are more likely to quit their jobs, they may respond by giving women less firm-specific training
  - Female workers might also invest less in their human capital given employers' responses

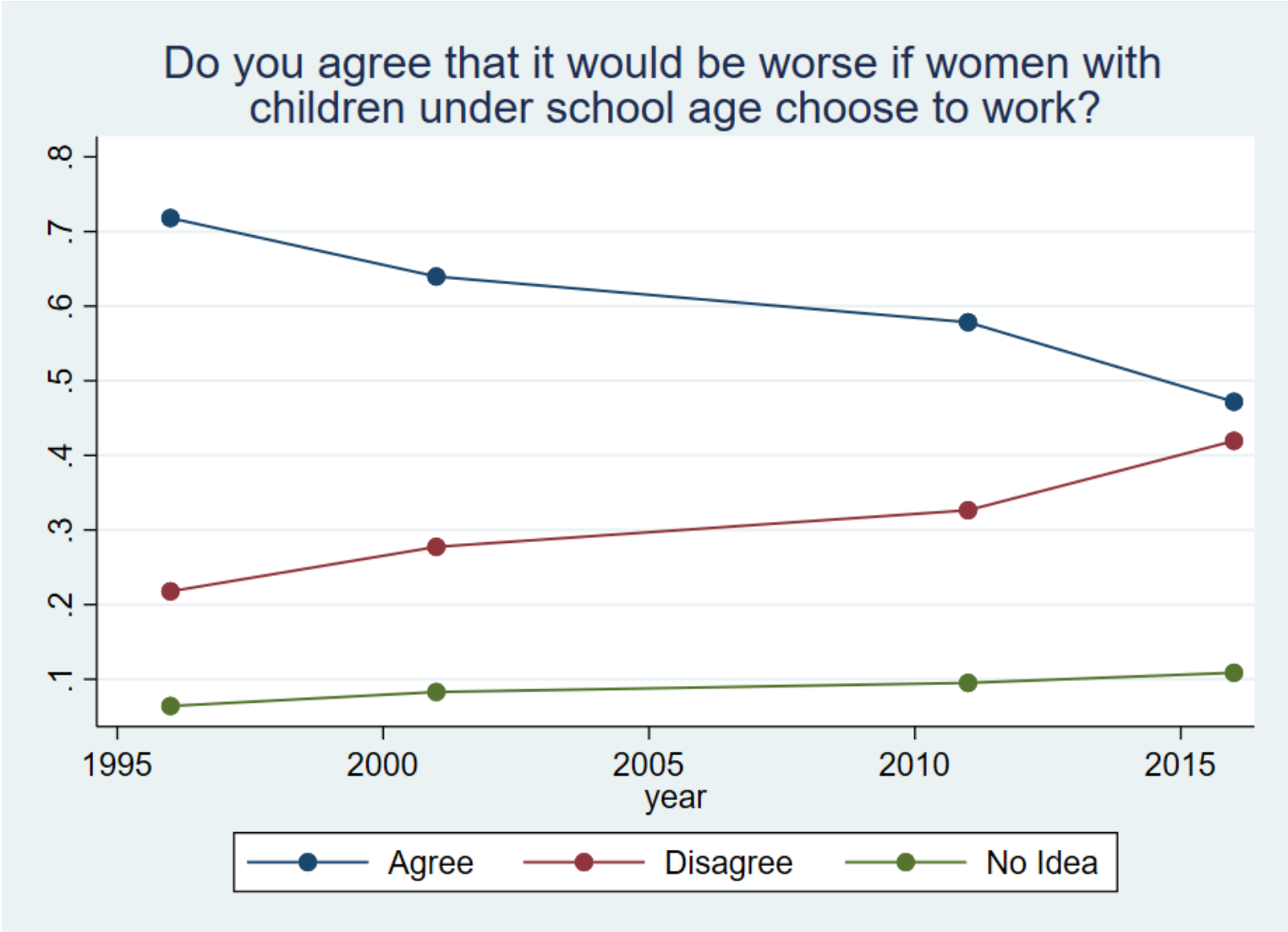
Gender Gap in Labor Market

Theoretical Framework: Social Norm

- Labor economists have become increasingly interested in the effect of **social norms** on gander earnings gap
  - Akerlof and Kranton (2000), Bertrand, Kamenica, and Pan (2015), Bertrand (2020)
- Women's labor market decisions may be shaped by powerful gendered stereotypes about roles and skills
  - Gender norms could change people's behavior because of the perceived cost of deviating from gender expectations
  - This may help explain why, for example, women who earn more than their husbands do more (not less) housework

Gender Norms in Taiwan

Facts



Gender Norms in Taiwan

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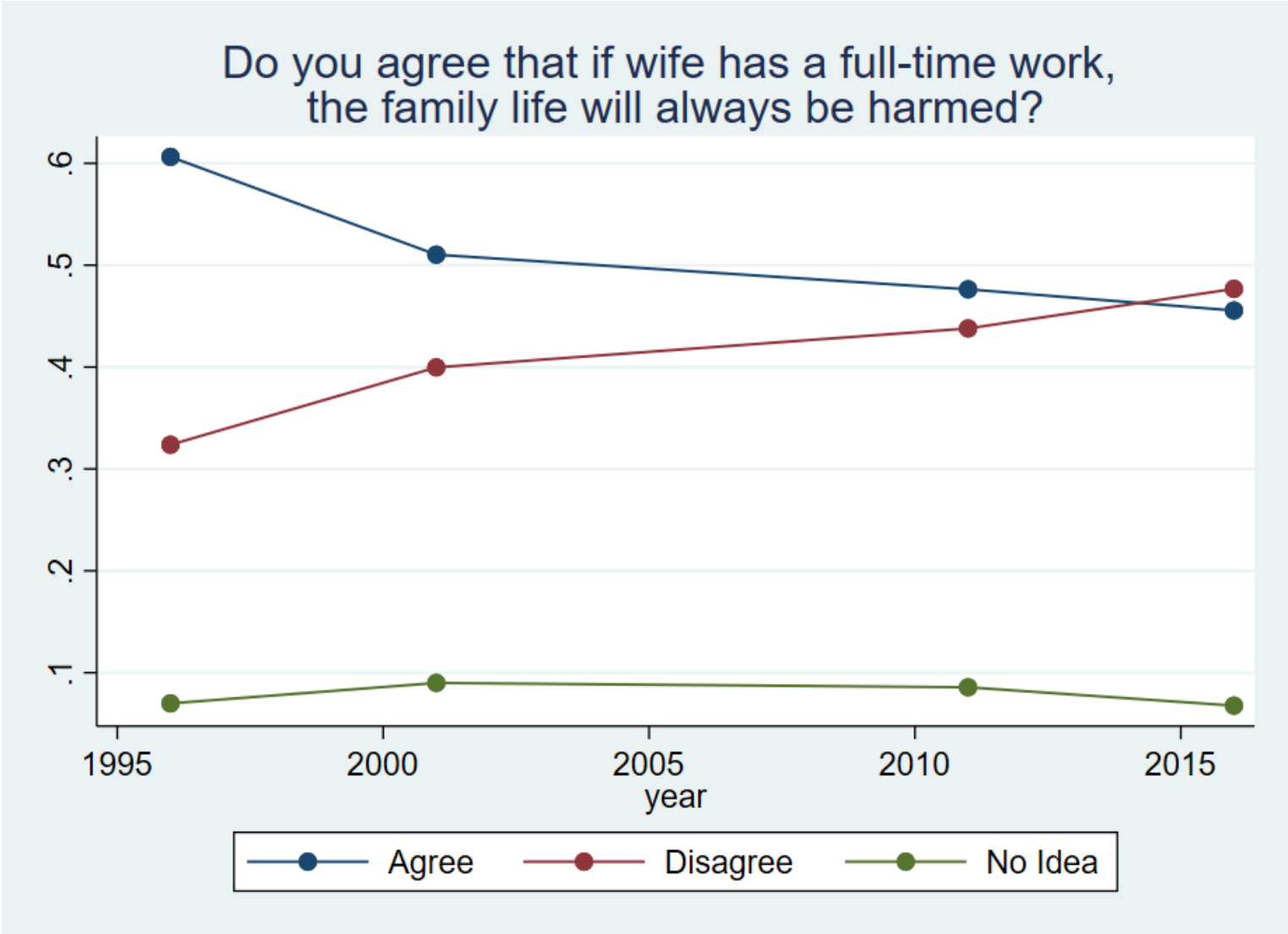

Gender Norms in Taiwan

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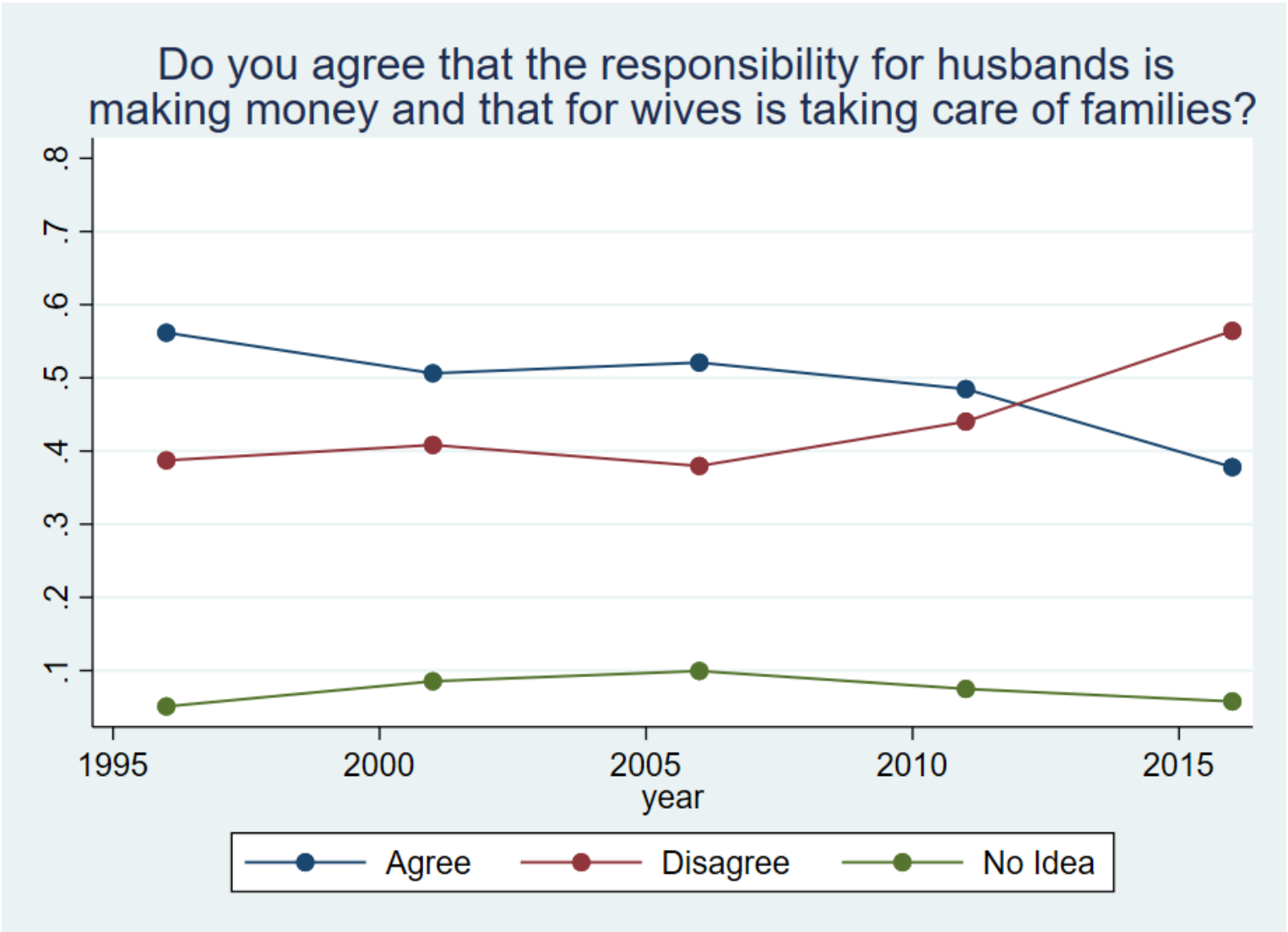

Empirical Example 1: Leonardo Bursztyn, Thomas Fujiwara, and Amanda Pallais (2017)

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Marriage Market Incentives

Leonardo Bursztyn, Thomas Fujiwara, and Amanda Pallais (2017) "**'Acting Wife': Marriage Market Incentives and Labor Market Investments**", AER

- They want to examine the effect of marriage market incentives on labor market investments.

Empirical Example 1: Leonardo Bursztyn, Thomas Fujiwara, and Amanda Pallais (2017)

Motivation

- Do single women **avoid career-enhancing actions** because these actions could signal personality traits, like ambition?
- Since these features are undesirable in the marriage market
  - Bertrand et al. (2015): It is relatively unlikely that a woman will earn more than her husband, and when she does, marital satisfaction is lower and divorce is more likely
  - Folke and Rickne (2016): Promotions increase the chance of divorce for women, but not for men.

Empirical Example 1: Leonardo Bursztyn, Thomas Fujiwara, and Amanda Pallais (2017)

Motivation

- Single women may thus face a trade-off:
  - Actions that lead to **professional success** might be sanctioned in the marriage market because they **signal ambition** and assertiveness.
- Single women might try to improve their marriage options by "acting wife."

Empirical Example 1: Leonardo Bursztyn, Thomas Fujiwara, and Amanda Pallais (2017)

Motivation

- The authors test for the existence and the implications of this trade-off by studying students in an elite U.S. MBA program.
  - Graduate school is a natural place to study this trade-off.
  - Many students are both investing in their professional career and looking for a long-term partner.
- They conducted a field experiment to test this trade-off

Field Experiment

- There are two types of experiments
  1. Lab experiment
     - An experiment conducted under highly controlled conditions (laboratory)
     - Usually let individuals play some games in the computers as a proxy for the real-world treatment
  2. Field experiment
     - A experiment used to test a hypothesis in a natural setting, such as a school or a workplace
     - This type of experiment allows researchers to observe the effects of treatment in a real-world setting

Empirical Example 1: Leonardo Bursztyn, Thomas Fujiwara, and Amanda Pallais (2017)

Experimental Design

- On the first day of the MBA program, a career counselor asked students to complete a questionnaire about their job preferences for their summer internships.
  - This questionnaire asked about students desired compensation, hours of work, and days per month of travel.
  - It also asked students to rate their leadership abilities and professional ambition.

Empirical Example 1: Leonardo Bursztyn, Thomas Fujiwara, and Amanda Pallais (2017)

Experimental Design

- The answer to this questionnaire can impact their placement of summer internships
- Summer internships would affect their post-graduation job offer
    - They will answer these questions seriously

Empirical Example 1: Leonardo Bursztyn, Thomas Fujiwara, and Amanda Pallais (2017)

Experimental Design

- They created two versions of the instructions of questionnaire
- Which version a student received was **randomized**
  - **Public version**: students were also told that "**your**" answers will be discussed in the career class
  - **Private version**: students were told that "**anonymized**" answers will be discussed in the career class
- Two versions only differed by one word ("your" v.s. "anonymized")

Empirical Example 1: Leonardo Bursztyn, Thomas Fujiwara, and Amanda Pallais (2017)

Experimental Design

Appendix Figure 3. Primary Experiment Questionnaire

The information on this survey will help the career office get to know you and help it find the right fit for your first-year internship. This information will not be shared with employers, so please express your true preferences, not just what you think employers want to hear. This information will be shared with your career advisor and [your/anonymized] answers will be discussed during the [name of career class].

UID Number: _____ **Name:** _____

Gender Identity (Optional): Male Female Other _____ **Age:** _____

Marital Status: Single In a serious relationship Cohabiting Engaged Married

Do you have children, either biological or adopted? Yes No

What industries are you interested in working in? List these below.

Tell us about any geographic preferences.

For the questions below, please circle only one answer.

What is your desired compensation level in your first year after graduation? Include base pay, performance pay, and equity, but not the signing bonus.

Under $75,000 $75,000-$100,000 $100,000-$125,000 $125,000-$150,000 $150,000-$175,000

$175,000-$200,000 $200,000-$225,000 $225,000-$250,000 Above $250,000

How often are you willing to travel for work?

Rather not travel A few days a month 1-2 days a week

4-5 days a week As much as necessary

How many hours per week are you willing to work on a regular basis?

Empirical Example 1: Leonardo Bursztyn, Thomas Fujiwara, and Amanda Pallais (2017)

Results

Table 3. Randomization Assessment by Subgroup
Primary Experiment

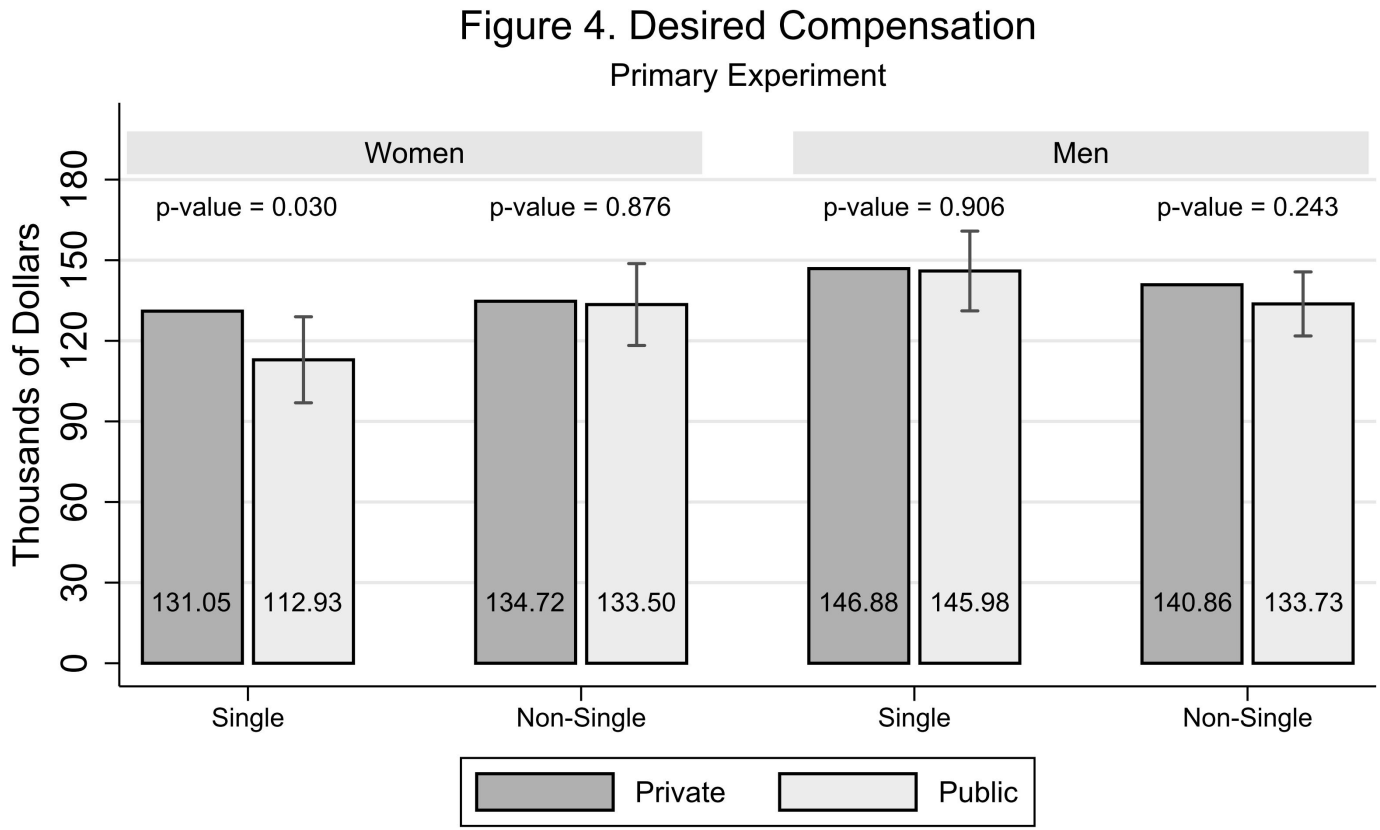
	Private Treatment	Public Treatment	p-Value of Difference	Private Treatment	Public Treatment	p-Value of Difference
	A. Single Women			B. Non-Single Women		
Age	27.4	27.2	0.715	27.7	27.3	0.483
Has Children	3.3%	0.0%	0.338	0.0%	0.0%	-
GMAT Score	703	712	0.205	701	700	0.974
Years of Work Experience	5.0	4.8	0.644	5.0	4.9	0.743
U.S. Citizen	61.3%	55.2%	0.638	77.8%	64.0%	0.282
Observations	31	29	60	27	25	52
	C. Single Men			D. Non-Single Men		
Age	27.5	27.7	0.471	28.4	28.9	0.350
Has Children	0.0%	0.0%	-	12.1%	17.2%	0.418
GMAT Score	719	719	0.924	720	720	0.929
Years of Work Experience	5.3	5.2	0.876	5.4	5.5	0.824
U.S. Citizen	58.3%	71.4%	0.165	65.7%	51.6%	0.103
Observations	48	56	104	67	64	131

Notes: The first and second columns of each panel contain the means of each demographic variable for the sample indicated by the panel among those in the private and public treatments, respectively. The third column shows the p-value of the difference in the means from a two-tailed t-test. *Non-Single* students are those who are in serious relationships, cohabiting, engaged, or married.

Empirical Example 1: Leonardo Bursztyn, Thomas Fujiwara, and Amanda Pallais (2017)

Results

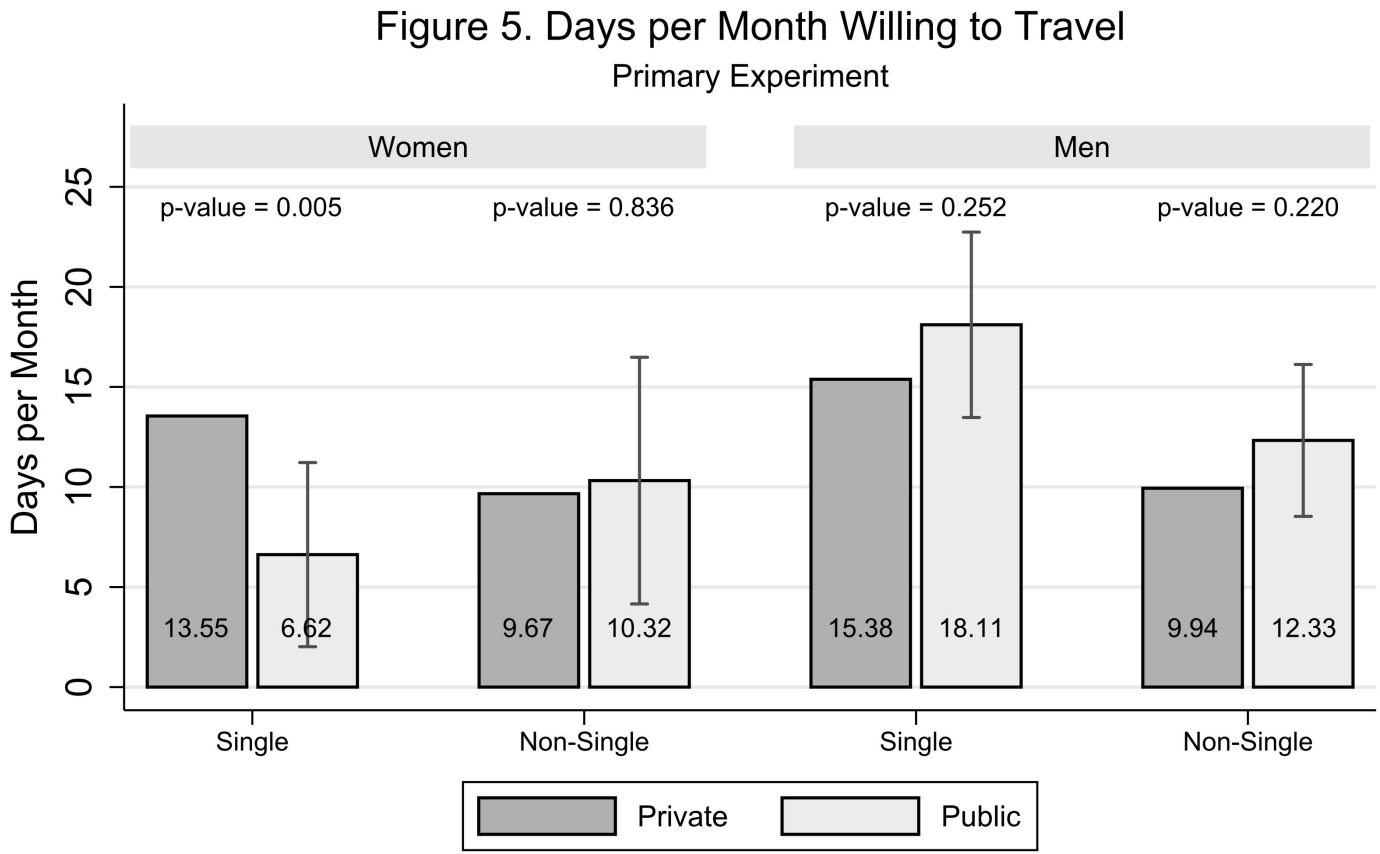
- Q: their desired compensation in their first year after graduation



Empirical Example 1: Leonardo Bursztyn, Thomas Fujiwara, and Amanda Pallais (2017)

Results

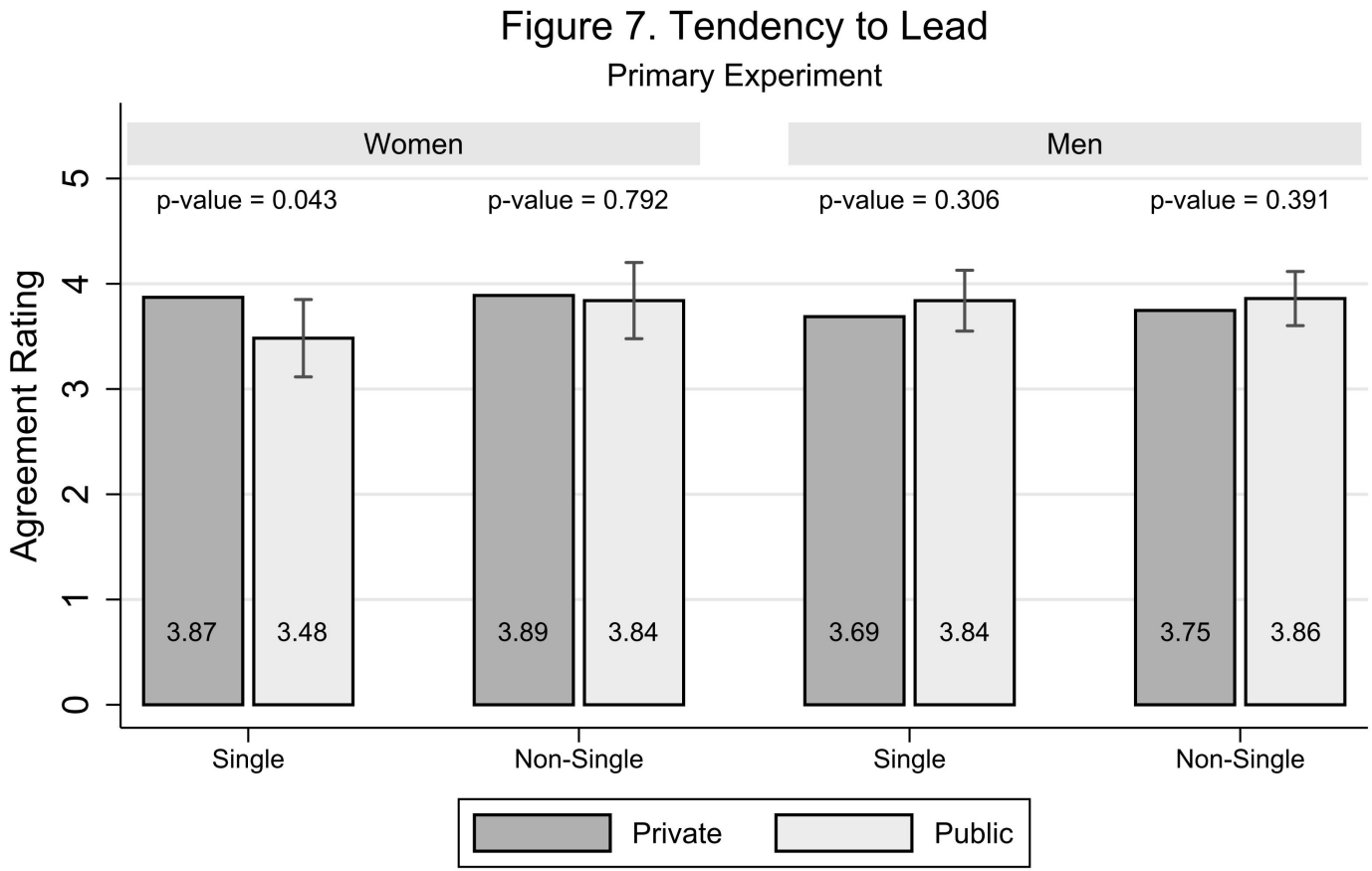
- Q: how often they are willing to travel for work.



Empirical Example 1: Leonardo Bursztyn, Thomas Fujiwara, and Amanda Pallais (2017)

Results

- Q: Students rated agreement with the statement "You tend to lead in your day-to-day interactions" on a 1-5 scale, where 1 is Strongly Disagree and 5 is Strongly Agree.

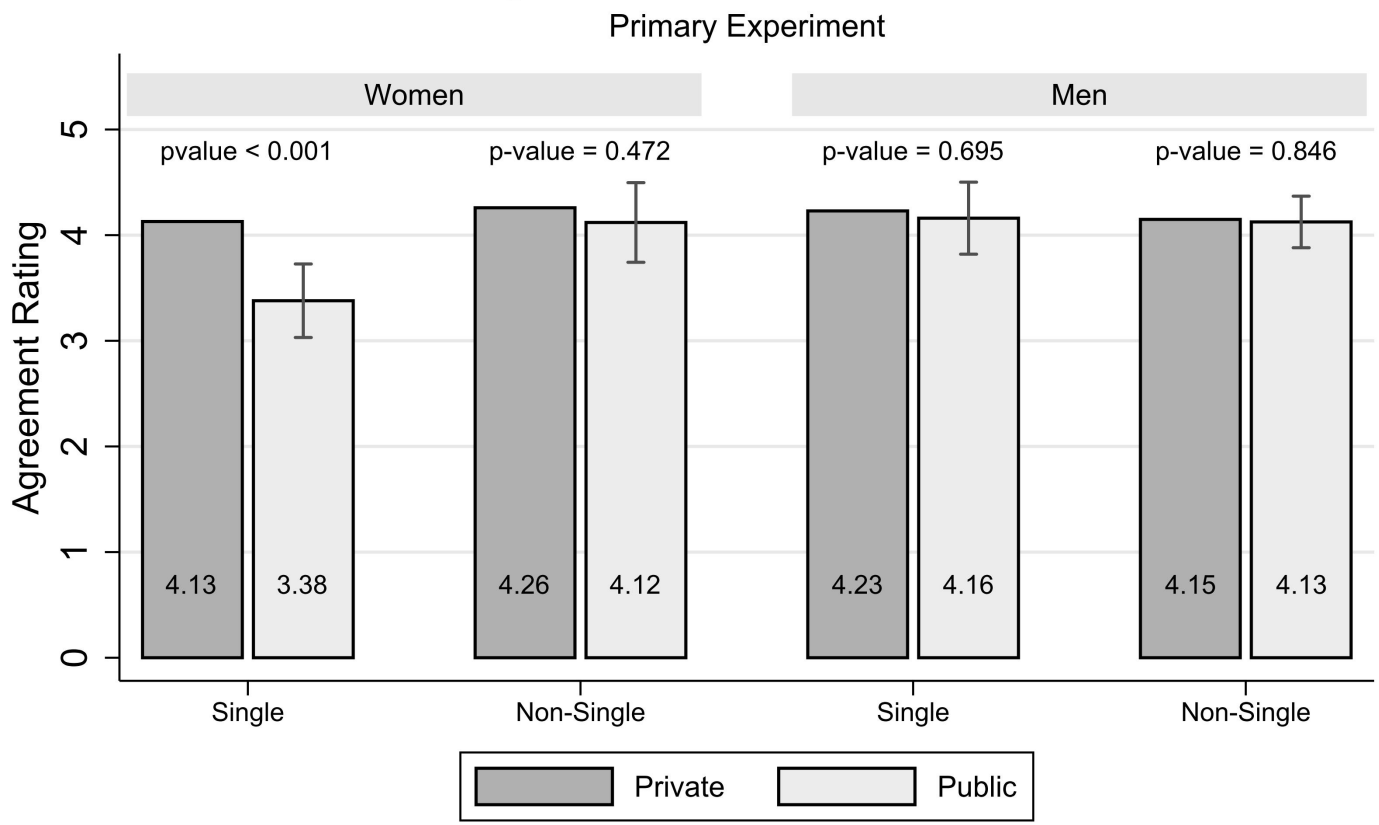


Empirical Example 1: Leonardo Bursztyn, Thomas Fujiwara, and Amanda Pallais (2017)

Results

- Q: Students rated agreement with the statement "You are more professionally ambitious than your most recent work colleagues" on a 1-to-5 scale, where 1 is Strongly Disagree and 5 is Strongly Agree.

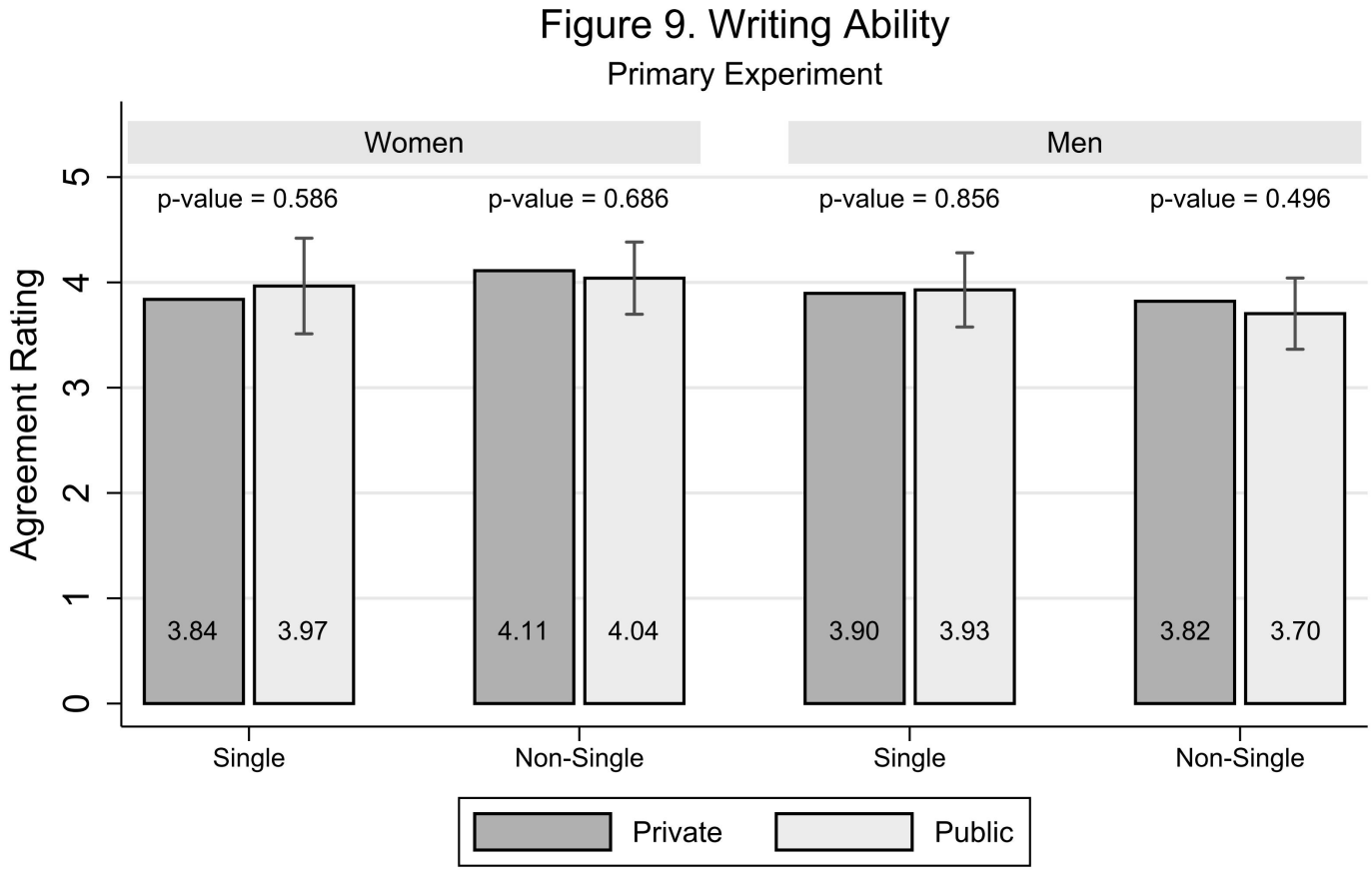
Figure 8. Professional Ambition



Empirical Example 1: Leonardo Bursztyn, Thomas Fujiwara, and Amanda Pallais (2017)

Results

- Q: Students rated agreement with the statement "You have above-average writing skills" on a 1-to-5 scale, where 1 is Strongly Disagree and 5 is Strongly Agree.



Empirical Example 1: Leonardo Bursztyn, Thomas Fujiwara, and Amanda Pallais (2017)

Experimental Design

- Their results have implications for understanding gender gaps in labor market outcomes
- Their results highlight the importance of social norms - particularly **what is differentially expected from a husband and a wife** - in explaining gender gaps

Threats to Validity of Randomized Experiments

Threats to Validity of Randomized Experiments

- **Internal validity:**
  - Can we estimate treatment effect for this particular sample?
  - We fail to do so when there are differences between treated and untreated sample

Most Common Threats to Internal Validity

- Failure of randomization
- Non-compliance with experimental protocol
- Attrition

Threats to Validity of Randomized Experiments

- **External validity:**
  - Can we extrapolate our estimates to other populations?
  - We fail to do so when the treatment effect is different outside the evaluation environment

Most Common Threats to External Validity

- Non-representative sample
- Non-representative program
  - The treatment differs in actual implementations
  - Actual implementations are not randomized (nor full scale)

Suggested Readings

- Chapter 1, Mastering Metrics: The Path from Cause to Effect
- Chapter 2, Mostly Harmless Econometrics