The Ohio State University

Department of Sociology

College Education, Employment Divergences, and the Gender Wage Gap

By

Mei-Yu Kuo

M.A. Thesis

Committee Members:
Vincent J. Roscigno (Chair),
Hui Zheng,
Rachel Dwyer,
Fangqi Wen

January 2025

Contents

Abstract

Gender and workplace stratification literatures consistently highlight wage inequalities for women compared to men. While partly due to occupational segregation and the devaluation of women's work, these inequalities may also be sequential, tied to post-secondary educational backgrounds and divergences in labor market attachment over time. Drawing on NLSY97 data, I uniquely analyze gender wage disparities, field of study in college, and the impact of labor market attachment and detachment. Findings reveal significant differences across college majors: applied non-STEM and applied STEM degrees appear to be tied to stronger labor market attachment, yet women benefit less from applied non-STEM degrees compared to men—an inequality likely related to the concentration of women in care-centered majors. Although applied STEM degrees offer comparable advantages to men and women, women's significant underrepresentation in such fields means that these advantages are disproportionately realized by men. Further analysis of wage gaps reveals that: (1) wage disparities across college majors can be partially explained by divergent degree of labor market attachment after earning a bachelor's degree, and (2) earnings gains associated with greater labor market attachment are nearly double for men what they are for women. I conclude by discussing these patterns and what they mean for gendered labor market disparities, but also for conceptions of education-labor market connections.

Introduction

In most countries, including the United States, the gender pay gap has narrowed since the 1970s, though it remains a significant issue (Our World in Data, 2018). Between 1970 and 2018, the women-to-men ratio of hourly wages increased from 0.61 to 0.83 but has stagnated since the 1990s, with the largest disparities observed among the top 10% of earners (England, Levine, & Mishel, 2020). This is despite the fact that women have been increasingly outpacing men in college completion (England et al, 2020; Yavorsky et al., 2019). It may be the case that credential and labor market disparities across the life course—i.e., through college, in the transition from higher education to employment, and relative to labor market attachment over time—might be at least partly responsible.

Most research on the gender wage gap has concentrated on the gendered STEM pipeline as a key source of unequal earnings. Specifically, scholars have analyzed disparities in college majors, particularly the persistence and completion of STEM degrees, as well as resulting gender segregation in occupations and industries (Kim, Tamborini, and Sakamoto; 2015; Mann & DiPrete, 2013; VanHeuvelen & Quadlin, 2021). Fewer studies, however, have explored how educational choices made during emerging adulthood shape individuals' long-term labor market experiences and attachments in particular. This is somewhat surprising as labor market attachment has long been a focal point for economists and family scholars investigating women's occupational downgrading (Becker, 1985). More recently, this focus has expanded to include the growing prevalence of time-demanding, disproportionately high-paying occupations and the systemic advantages men enjoy in these roles, including their capacity to overwork (Cha & Weeden, 2014; Goldin, 2014).

Literatrue Review

Write your methods here. In this tutorial you can use this already made file

to add examples of figures and tables and explore knitr and kableExtra functionalities!

Gender and Earning Gap

123

Gender Discrimination in the Labor Market

123

Hypothesis

1. abc
2. bcd

Data and Method

Write your methods here. In this tutorial you can use this already made file

to add examples of figures and tables and explore knitr and kableExtra functionalities!

Results

Some more guidlines from the School of Geosciences.

This section should summarise the findings of the research referring to all figures, tables and statistical results (some of which may be placed in appendices). - include the primary results, ordered logically - it is often useful to follow the same order as presented in the methods. - alternatively, you may find that ordering the results from the most important to the least important works better for your project. - data should only be presented in the main text once, either in tables or figures; if presented in figures, data can be tabulated in appendices and referred to at the appropriate point in the main text.

Often, it is recommended that you write the results section first, so that you can write the methods that are appropriate to describe the results presented. Then you can write the discussion next, then the introduction which includes the relevant literature for the scientific story that you are telling and finally the conclusions and abstract – this approach is called writing backwards.

Discussion

the purpose of the discussion is to summarise your major findings and place them in the context of the current state of knowledge in the literature. When you discuss your own work and that of others, back up your statements with evidence and citations. - The first part of the discussion should contain a summary of your major findings (usually 2 – 4 points) and a brief summary of the implications of your findings. Ideally, it should make reference to whether you found support for your hypotheses or answered your questions that were placed at the end of the introduction. - The following paragraphs will then usually describe each of these findings in greater detail, making reference to previous studies. - Often the discussion will include one or a few paragraphs describing the limitations of your study and the potential for future research. - Subheadings within the discussion can be useful for orienting the reader to the major themes that are addressed.

```
library(Statamarkdown)
```

```
## Stata found at /Applications/Stata/StataSE.app/Contents/MacOS/StataSE
```

```
## The 'stata' engine is ready to use.
```

```
# ref
# https://users.ssc.wisc.edu/~hemken/Stataworkshops/Statamarkdown/stata-and-r-markdown
# note
# you may have to run all the codes on STATA first, test if they work, and then copy p
```

```
sysuse auto
summarize
tab1 foreign rep78
ttest mpg, by(foreign)
```

```
(1978 Automobile Data)

    Variable |        Obs        Mean    Std. Dev.       Min        Max
-------------+---------------------------------------------------------
        make |          0
       price |         74    6165.257    2949.496       3291      15906
         mpg |         74     21.2973    5.785503         12         41
       rep78 |         69    3.405797    .9899323          1          5
    headroom |         74    2.993243    .8459948        1.5          5
-------------+---------------------------------------------------------
       trunk |         74    13.75676    4.277404          5         23
      weight |         74    3019.459    777.1936       1760       4840
      length |         74    187.9324    22.26634        142        233
        turn |         74    39.64865    4.399354         31         51
displacement |         74    197.2973    91.83722         79        425
-------------+---------------------------------------------------------
  gear_ratio |         74    3.014865    .4562871       2.19       3.89
     foreign |         74    .2972973    .4601885          0          1


-> tabulation of foreign

   Car type |      Freq.     Percent        Cum.
------------+-----------------------------------
   Domestic |         52       70.27       70.27
    Foreign |         22       29.73      100.00
------------+-----------------------------------
      Total |         74      100.00

-> tabulation of rep78

     Repair |
```

Record 1978	Freq.	Percent	Cum.
1	2	2.90	2.90
2	8	11.59	14.49
3	30	43.48	57.97
4	18	26.09	84.06
5	11	15.94	100.00
Total	69	100.00	

Two-sample t test with equal variances

Group	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf.	Interval]
Domestic	52	19.82692	.657777	4.743297	18.50638	21.14747
Foreign	22	24.77273	1.40951	6.611187	21.84149	27.70396
combined	74	21.2973	.6725511	5.785503	19.9569	22.63769
diff	-4.945804	1.362162			-7.661225	-2.230384

diff = mean(Domestic) - mean(Foreign) t = -3.6308

Ho: diff = 0 degrees of freedom = 72

Ha: diff < 0 Pr(T < t) = 0.0003

Ha: diff != 0 Pr(|T| > |t|) = 0.0005

Ha: diff > 0 Pr(T > t) = 0.9997

Table and Figures

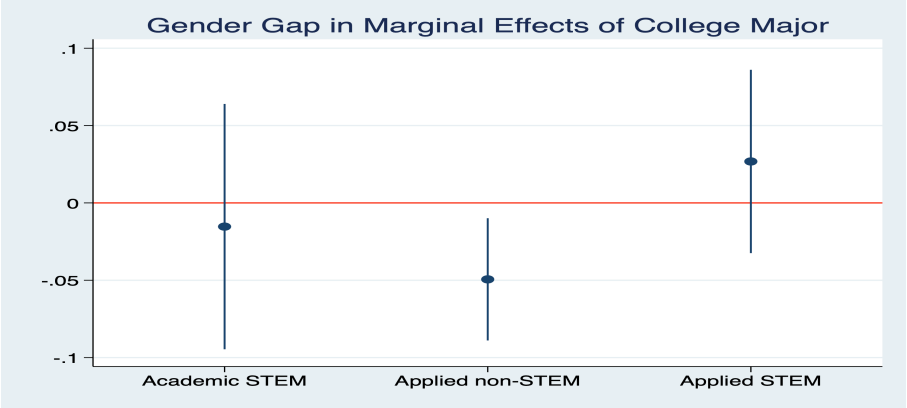

Figure 1: This is a sample image.

Table 1: Table 3. Gender, College Major, and Employment Movements, Multilevel Event History Model

	(1) pos		(2)		(3)		
main							
age_BA	.053***	(.002)	.053***	(.002)	.053***	(.002)	.035
age_BA X age_BA	-.004***	(.000)	-.004***	(.000)	-.004***	(.000)	-.00
African American	.003	(.013)	.004	(.013)	.003	(.013)	.01
Asian or Pacific Islander	-.005	(.027)	-.009	(.027)	-.009	(.027)	-.0
Hispanic	-.038**	(.015)	-.038**	(.014)	-.039**	(.014)	-.02
Other	-.018	(.028)	-.023	(.028)	-.023	(.028)	-.0
Northeast	.021	(.015)	.023	(.015)	.022	(.015)	.00
South	.011	(.013)	.011	(.013)	.010	(.013)	.01
West	-.022	(.014)	-.021	(.014)	-.021	(.014)	-.02
MSA	.037	(.030)	.036	(.030)	.036	(.030)	.02
Extractive and Other	.015	(.021)	.018	(.021)	.019	(.021)	.01
High-Wage Service	-.131***	(.013)	-.127***	(.013)	-.125***	(.013)	-.03
Low-Wage Service	-.121***	(.017)	-.116***	(.017)	-.116***	(.017)	-.089
Public Sector	.041*	(.020)	.048*	(.020)	.049*	(.020)	.048
Never been Employed	-.119***	(.019)	-.148***	(.023)	-.136***	(.024)	-.12
Women	-.061***	(.010)	-.055***	(.010)	-.032*	(.016)	.00
Academic STEM			.010	(.022)	.019	(.030)	.02
Applied non-STEM			.048***	(.011)	.085***	(.017)	.083
Applied STEM			.076***	(.015)	.079***	(.019)	.086
Women X Academic STEM					-.013	(.043)	-.0
Women X Applied non-STEM					-.057**	(.022)	-.04
Women X Applied STEM					.034	(.032)	.02
Married							.039
Women X Married							-.07
Women X Missing							.084
>=1 child in residence							.00
Women X >=1 child in residence							-.069
Constant	.693***	(.034)	.655***	(.035)	.641***	(.036)	.623
lns1_1_1							
Constant	-4.303***	(.046)	-4.288***	(.045)	-4.288***	(.045)	-4.51
lns1_1_2							
Constant	-1.720***	(.027)	-1.731***	(.027)	-1.735***	(.027)	-1.77
lnsig_e							
Constant	-.979***	(.006)	-.980***	(.006)	-.980***	(.006)	-1.02
Observations	32316		32316		32316		323
ll	-16357.870		-16341.699		-16336.642		-1466
aic	32761.741		32735.398		32731.284		29391
bic	32954.557		32953.364		32974.400		29684

Note: Standard errors are shown in parentheses. +p < .01; *p < .05; **p < .01; ***p < .001.

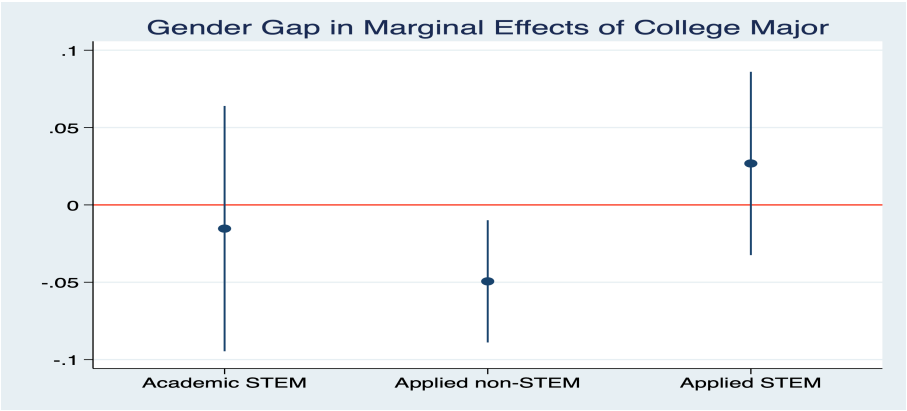

Figure 2: This is a sample image.

Appendix(ces)

Appendix A: additional tables

Insert content for additional tables here.

Appendix B: additional figures

Insert content for additional figures here.

Appendix C: code

Insert code (if any) used during your dissertation work here.

Reference

yello! Bibliography is not showing up.