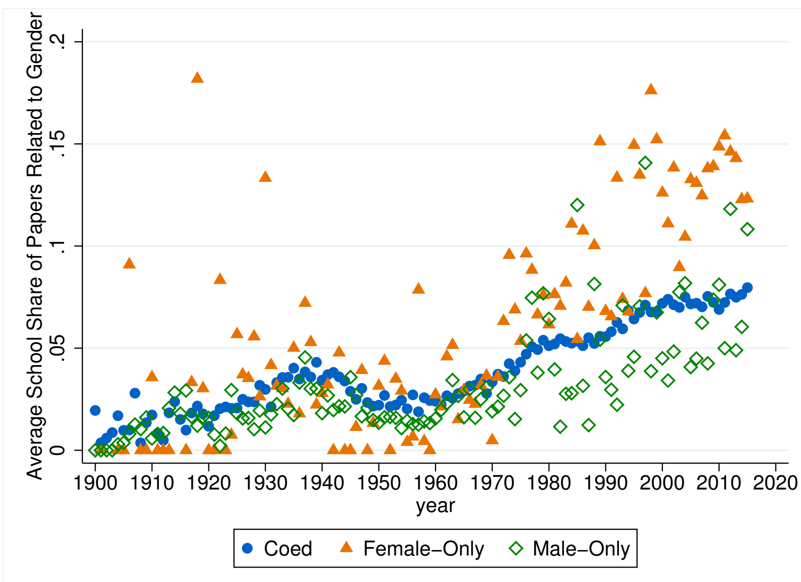
Online Appendix for "Undergraduate Gender Diversity and the Direction of Scientific Research"

Francesca Truffa   Ashley Wong

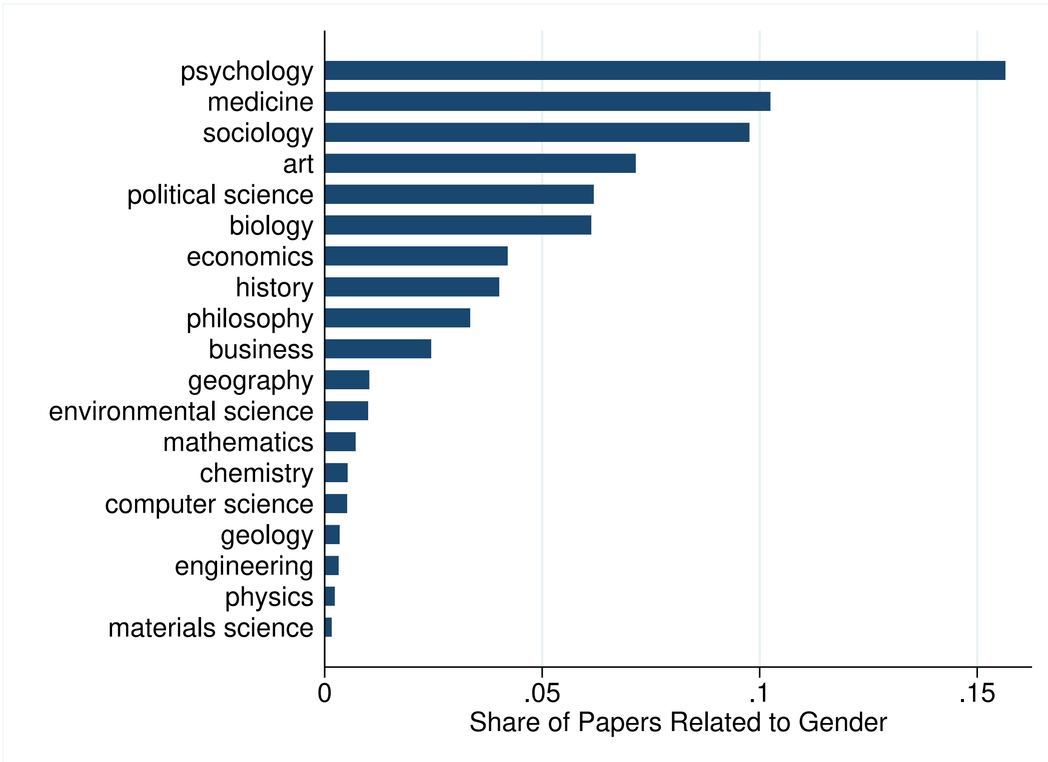
A Additional Figures and Tables

Figure A.1: Trends in Gender-Related Research by Coeducational Status, 1900–2015



Notes: Figure A.1 plots the average share of papers related to gender published across all bachelors, masters, or Ph.D.-granting universities in the United States from 1900 to 2015 by their coeducational status. Blue denotes universities that are coeducational during that year. Orange denotes female-only universities and green denotes male-only universities. Data on gender-related research come from Microsoft Academic Graph from 1900 to 2015. We discard observations with less than 10 total papers written in that year prior to averaging.

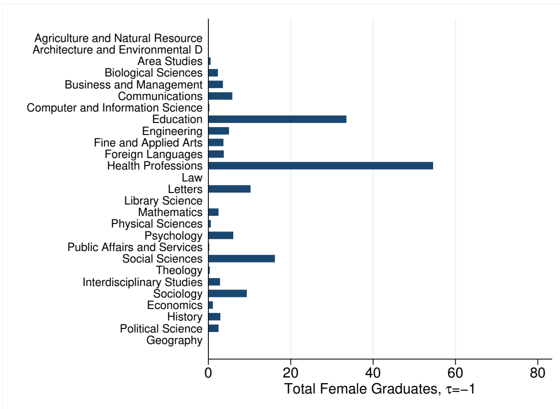
Figure A.2: Gender Related Share of Papers by Field



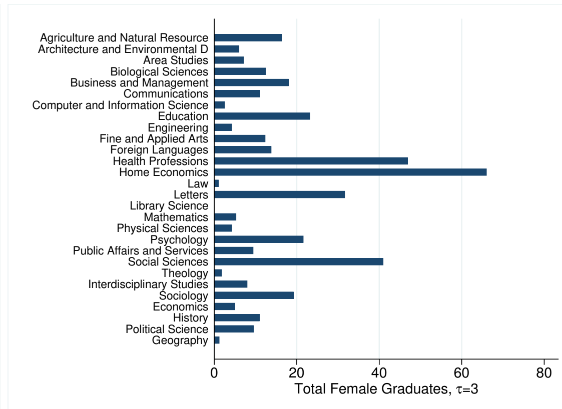
Notes: Figure A.2 shows the share of gender related papers by fields in all bachelor's, master's, or Ph.D.-granting universities in the United States between 1900 and 2015.

Figure A.3: Total Female Graduates by Major Before and After Coeducation

(a) $\tau = -1$



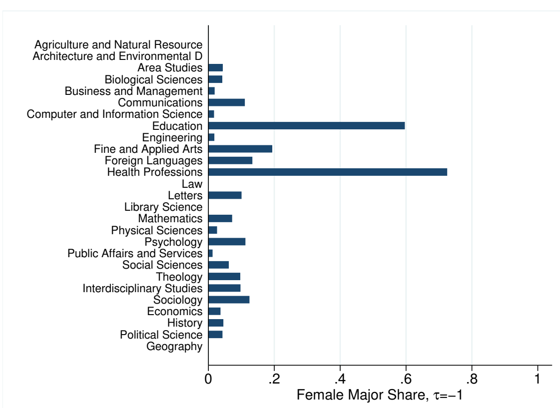
(b) $\tau = 3$



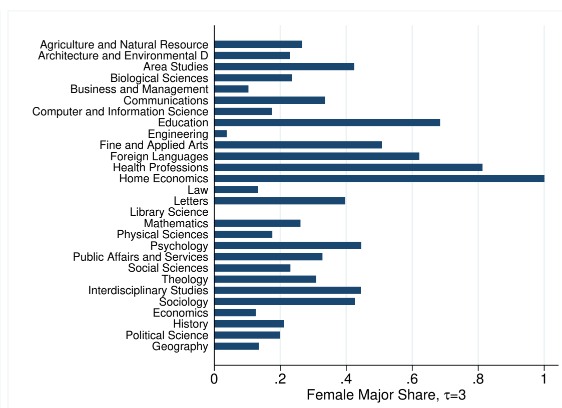
Notes: Figure A.3 shows the total number of female graduates by major one year before coeducation (Figure A.3a) and three years after coeducation (Figure A.3b).

Figure A.4: Share of Female Graduates by Major Before and After Coeducation

(a) $\tau = -1$



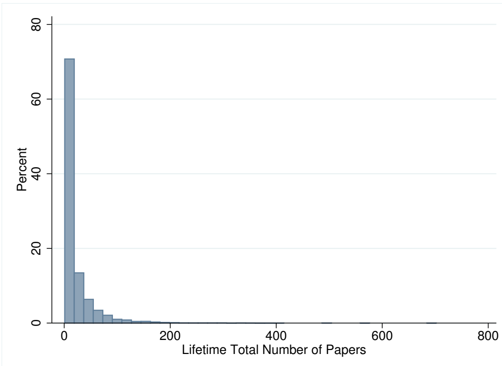
(b) $\tau = 3$



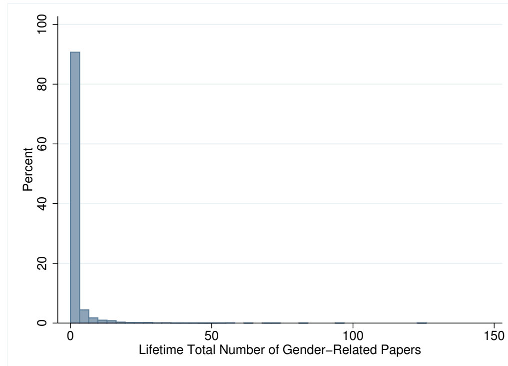
Notes: Figure A.4 shows the share of female graduates by major one year before coeducation (Figure A.4a) and three years after coeducation (Figure A.4b).

Figure A.5: Distribution of Lifetime Research Output

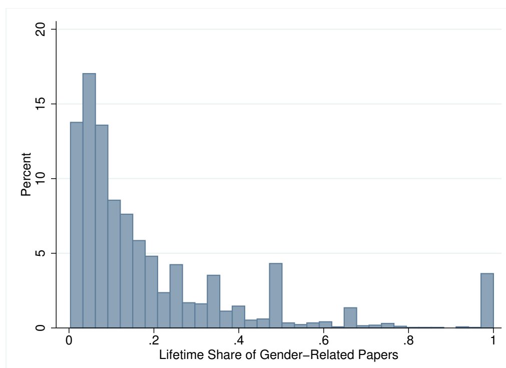
(a) Total Number of Papers



(b) Total Number of Gender-Related Papers



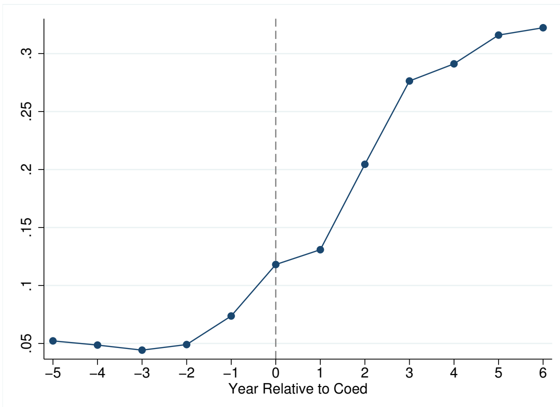
(c) Share of Gender-Related Papers (Conditional on Writing At Least One Gender-Related Paper)



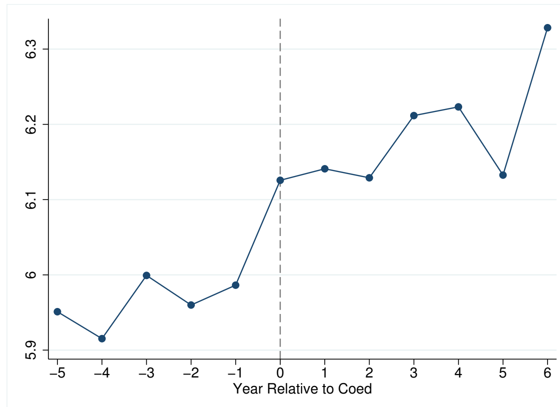
Notes: Figure A.5 plots distribution of lifetime research output of researchers that were active one year prior to coeducation. Figure A.5c is restricted to researchers who have written at least one gender-related research paper in their lifetime.

Figure A.6: Female Bachelor's Degrees Share and Log Bachelor's Degrees Around Coeducation Date

(a) Female Share of Bachelor's Degrees

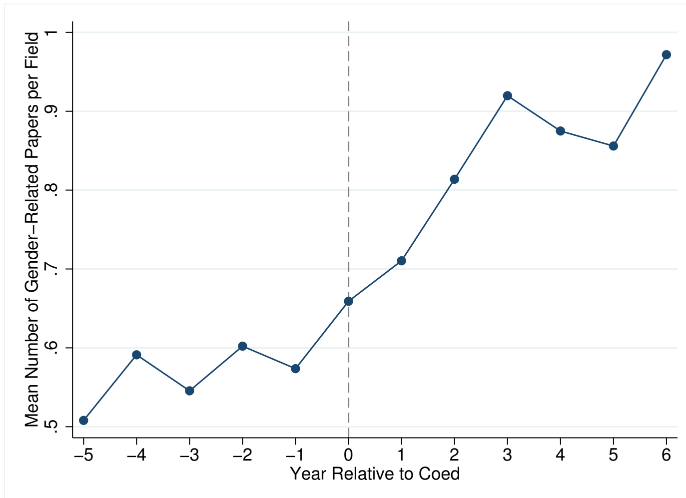


(b) Log Bachelor's Degrees Awarded



Notes: Figure A.6 plots the average female share of bachelor's degrees and log total bachelor's degrees awarded across universities that switched to coeducation in the years before and after the event. The data on female share of bachelor's degrees and log total bachelor's degrees awarded come from the degrees completion series of the HEGIS/IPEDS database available from 1965 to 1998.

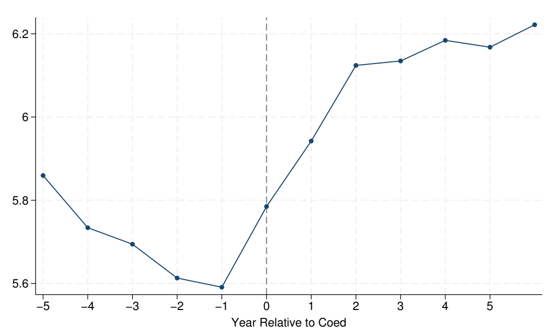
Figure A.7: Number of Gender-Related Research Publications Around Coeducation Date



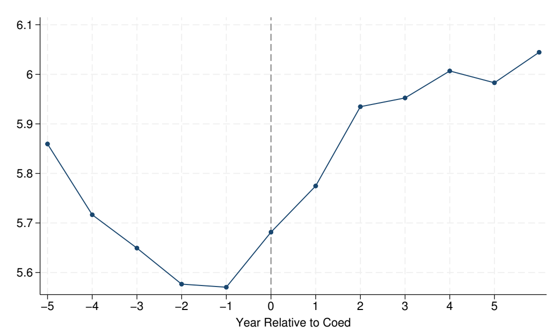
Notes: Figure A.7 plots the average number of gender-related papers across school-subfields in universities that switched to coeducation in the years before and after the event. Data on gender-related research comes from Microsoft Academic Graph for the years between 1950 and 2005.

Figure A.8: Descriptive Dynamics for Student Quality

(a) High School GPA



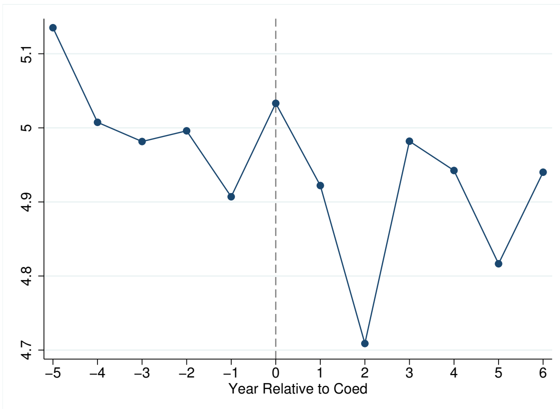
(b) High School GPA (Male Students Only)



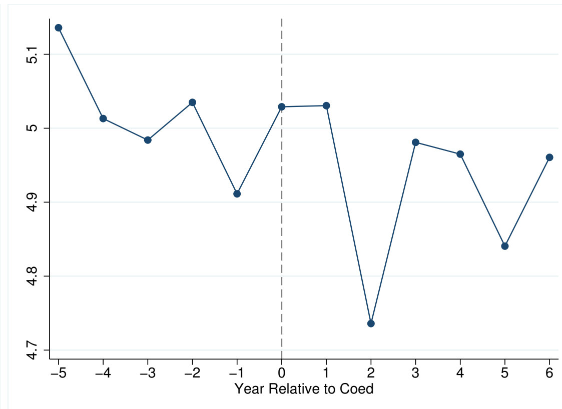
Notes: Data on high school GPA come from the CIRP Freshman Survey Trends from 1966-1992 made available by HERI Data Archives Higher Education Research Institute (1966–2006). High school GPA is reported on a scale of 1 to 8, where 1 is equivalent to a D average and 8 is equivalent to an A or A- average.

Figure A.9: Descriptive Dynamics for School Financial Outcomes Around Coeducation

(a) Log Total Expenditures Per Student



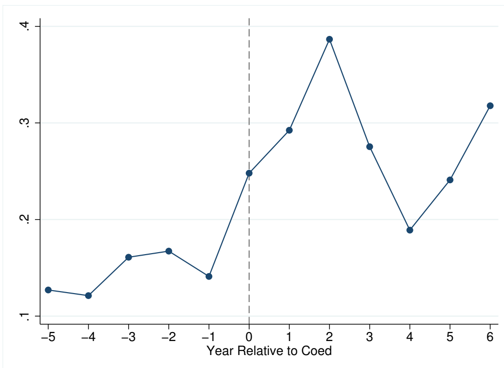
(b) Log Revenue Per Student



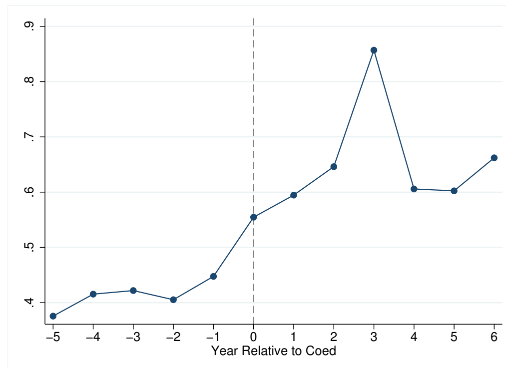
Notes: Figure A.9 plots the log total expenditures per student and log revenue per student across universities that switched to coeducation in the years before and after the event. The data on log total expenditures per student and log revenue per student come from the financial series of the HEGIS/IPEDS database available from 1968 to 1986. Expenditures and revenues are deflated to 1982-84 dollars (U.S. Bureau of Labor Statistics, 2019).

Figure A.10: Trends in Number of Gender-Related Research Publications by Year of Coeducation (5-Year Bins)

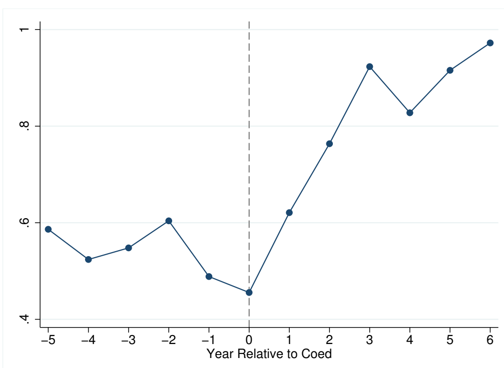
(a) 1960–1964



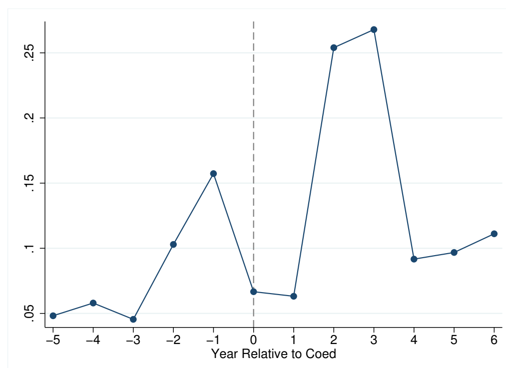
(b) 1965–1969



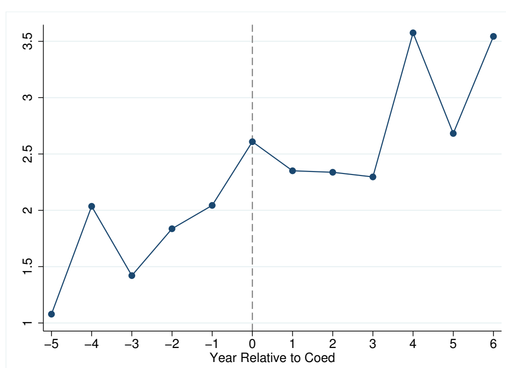
(c) 1970–1974



(d) 1975–1979

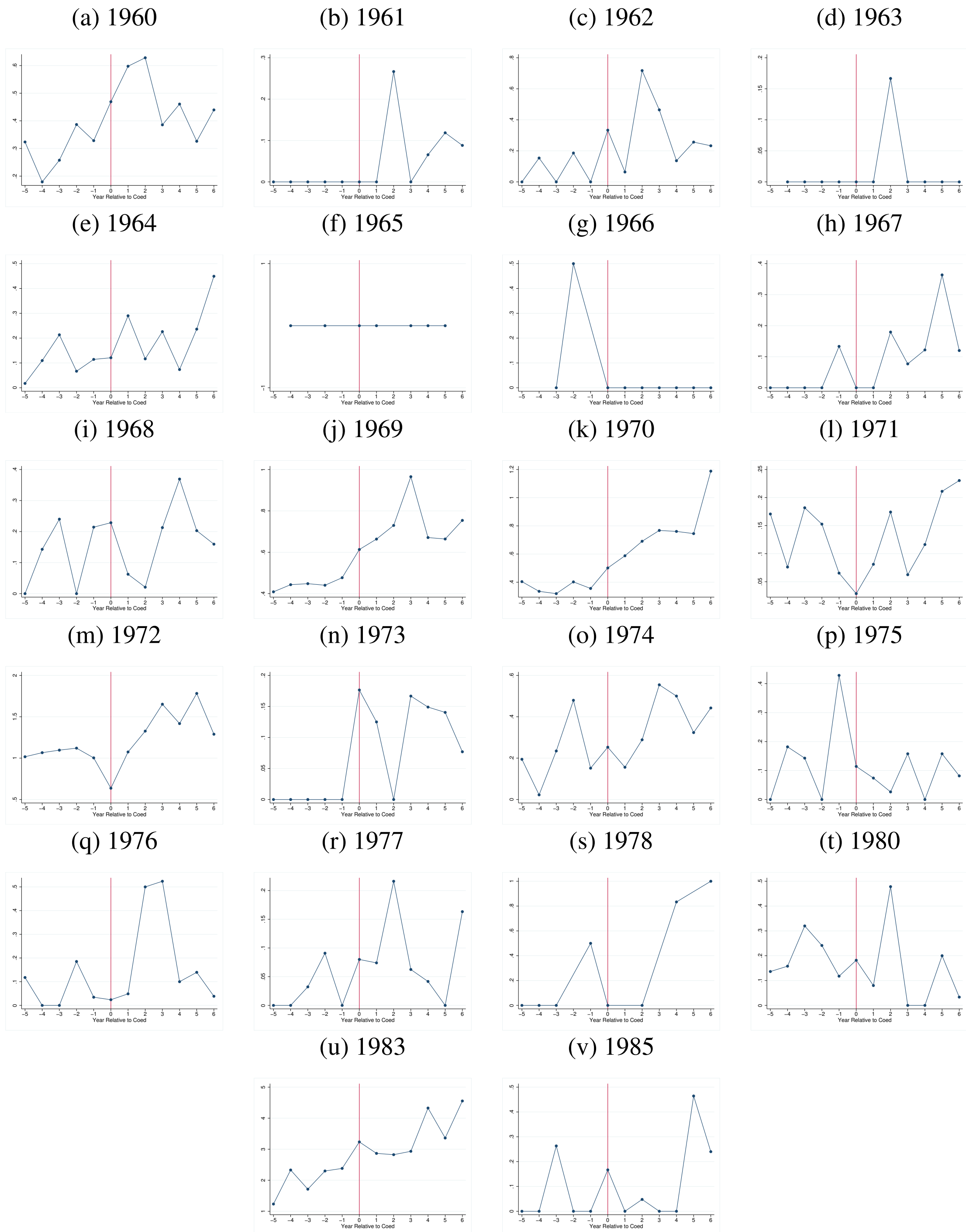


(e) 1980–1985



Notes: Figure A.10 plots the average number of gender-related papers by 5-year cohorts (based on year of coeducation) across school-subfields in universities that switched to coeducation in the years before and after the event. Data on gender-related research comes from Microsoft Academic Graph for the years between 1950 and 2005. The number of schools in each graph is as follows: 1960–1964: 9, 1965–1969: 22, 1970–1974: 35, 1975–1979: 6, 1980-1985:4.

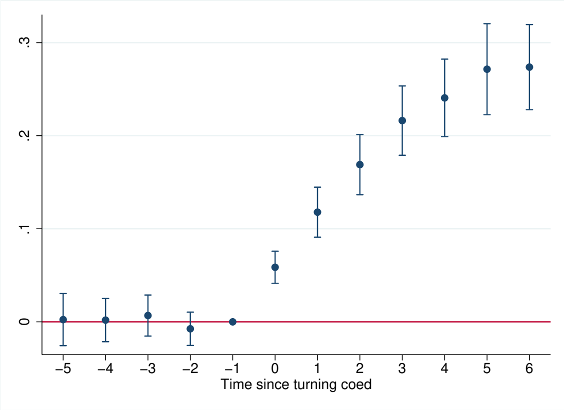
Figure A.11: Trends in Number of Gender-Related Research Publications by Year of Coeducation



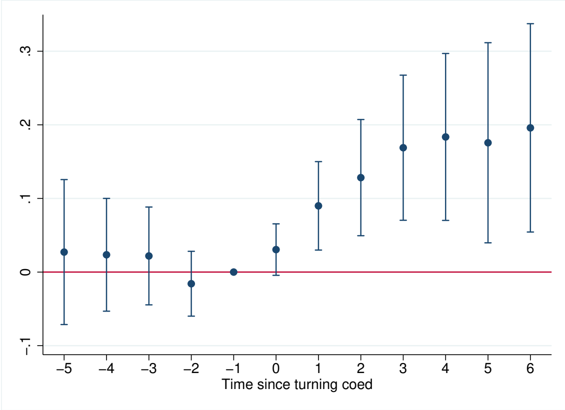
Notes: Figure A.11 plots the average number of gender-related papers by year of coeducation across school-subfields in universities that switched to coeducation in the years before and after the event. Data on gender-related research comes from Microsoft Academic Graph for the years between 1950 and 2005. The number of schools in each graph is as follows: 1960: 2, 1961: 2, 1962: 2, 1963: 1, 1964: 2, 1965: 1, 1966: 1, 1967: 1, 1968: 6, 1969: 13, 1970: 14, 1971: 9, 1972: 6, 1973: 3, 1974: 3, 1975: 1, 1976: 2, 1977: 2, 1978: 1, 1980: 1, 1983: 2, 1985: 1.

Figure A.12: Effect of Turning Coed on Enrollment

(a) Female Enrollment Share



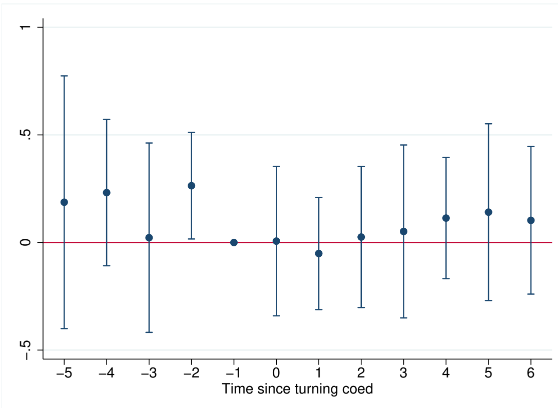
(b) Log Total Enrollment



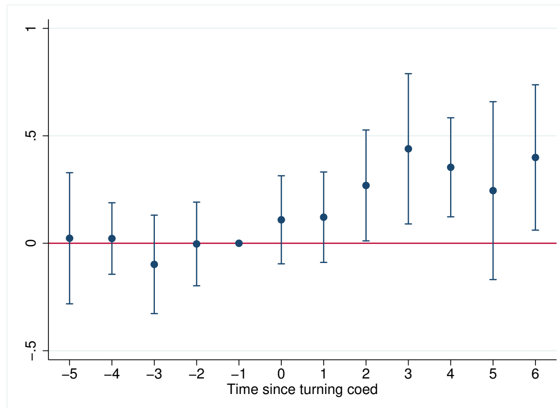
Notes: These figures plot the event time coefficients and their 95% confidence intervals from estimating equation (1) for the outcome variables, female share of enrollment and log total enrollment. All specifications are estimated using OLS. In the specifications, we include school fixed effects and year fixed effects. We cluster at the school level. Data on enrollment comes from HEGIS/IPEDS available from 1968 to 1998.

Figure A.13: Effect of Turning Coed on Gender-Related Publications by Subcomponents

(a) Number of Gender-Related Papers (Titles)

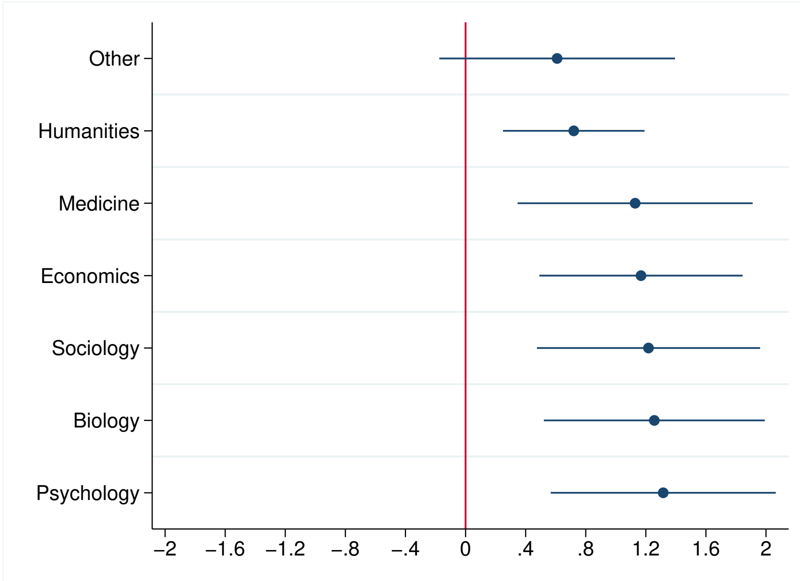


(b) Number of Gender-Related Papers (Abstracts)



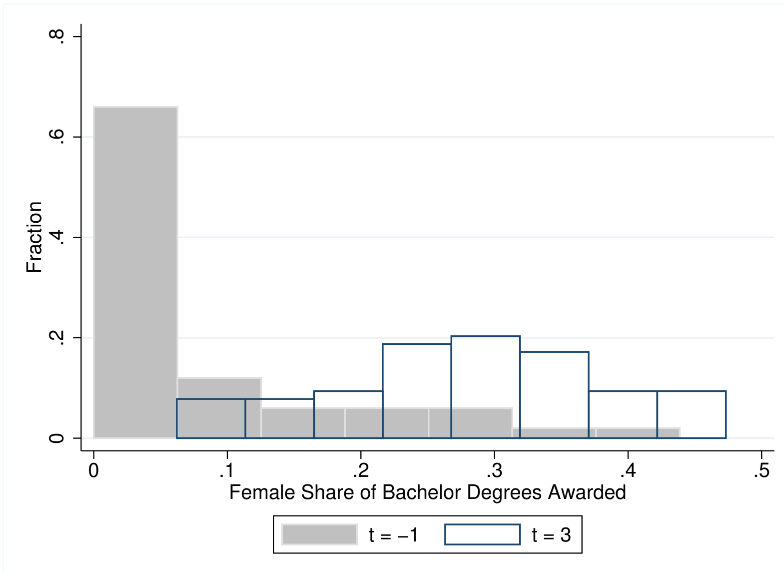
Notes: These figures plot the event time coefficients and their 95% confidence intervals from estimating equation (1) for the number of gender-related research publications using alternative definitions. The outcome variable in Figure A.13a is the number of gender-related papers based on the titles and the outcome variable in Figure A.13b is the number of gender-related papers based on the abstracts. All specifications are estimated using conditional fixed effects Poisson models. In the specifications, we include the school-subfield fixed effects, year fixed effects, and discipline-by-year fixed effects. We also control for total publications, total publications with an abstract, and the average abstract length at the school-subfield. We cluster at the school level.

Figure A.14: Effect of Turning Coed on Gender-Related Papers by Field



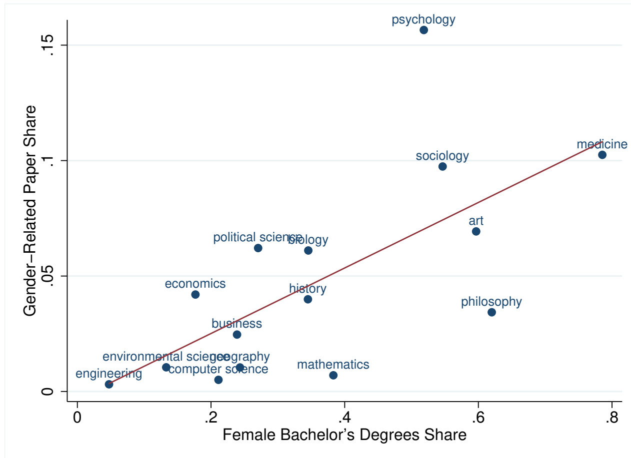
Notes: This figure plots the average effects for years 3 to 6 and their 95% confidence intervals from estimating a modified version of equation (1) in which we interact the event time dummies with a categorical variable for each field of study. The outcome variable is the number of gender-related papers. The specification is estimated using a conditional fixed effects Poisson model. In the specification, we include the school-subfield fixed effects and year fixed effects. We also control for total publications, total publications with an abstract, and the average abstract length at the school-subfield. We cluster at the school level.

Figure A.15: Distribution of Female Bachelor's Degrees Share Awarded



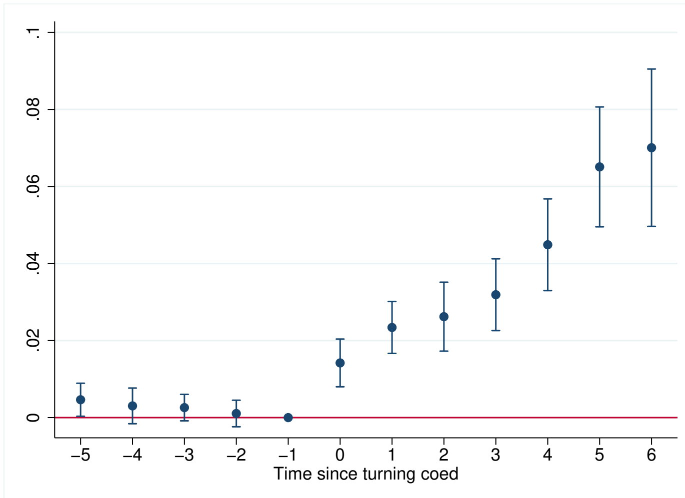
Notes: This figure plots the histogram for the female share of bachelor's degrees awarded at $\tau = -1$ and at $\tau = 3$. Data on bachelor's degrees awarded come from HEGIS/IPEDS data from 1965 to 1998. Prior to the policy, the vast majority of the universities were less than 10% female. A smaller number of schools had a higher female student share. This is partly driven by the consolidation of male-only universities and women's colleges. For example, St John's University of New York and Fordham University both had "initial" female bachelor's degrees share of greater than 30%. However, St John's University of New York transitioned to coeducation by merging with Notre Dame College (New York), a private women's college in 1971. Similarly, Fordham College at Rose Hill became coeducational in 1974 when it merged with Thomas More College. In these cases, data entries of the two schools have been combined in HEGIS, but the true female share of bachelor's degrees awarded prior to coeducation was likely close to 0%. Post reform, the distribution shows considerable variation in the female share of bachelor's degrees awarded. The share of female students ranged from as low as 6% to 47%.

Figure A.16: Relationship between Female Bachelor's Degrees Share and Share of Publications Related to Gender Across Fields of Study



Notes: This figure plots the relationship between female bachelor's degrees share and share of publications related to gender across fields of study. The sample period is from 1950-2005 and the data sample consists of universities that were already coed or never turned coed.

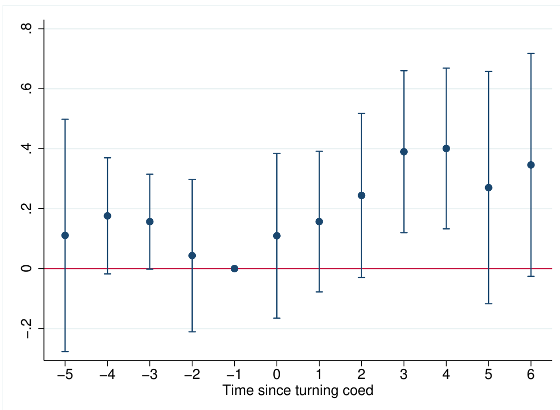
Figure A.17: Likelihood of Prior Interests in Gender Topics



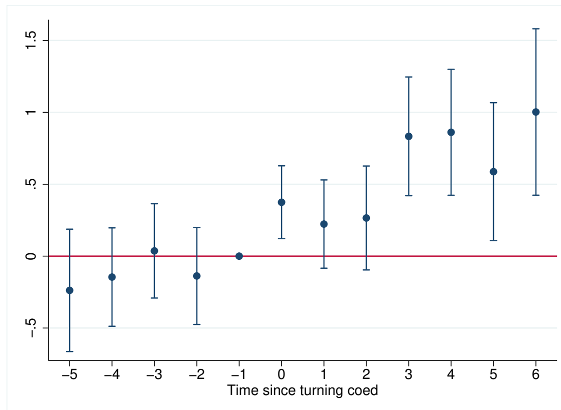
Notes: This figure plots the event time coefficients and their 95% confidence intervals from estimating equation (1). The dependent variable is an indicator for having prior interests in gender topics. Researchers interested in gender are defined as those who have either written a gender-related paper, referenced a gender-related paper, or co-authored with a person who has written a gender-related paper at least once before the policy change. Estimation at the researcher level using OLS. In the specification, we include school fixed effects, year fixed effects, and discipline-by-year fixed effects. We cluster at the school level.

Figure A.18: Effect of Turning Coed on Gender-Related Research by Incumbent Researchers and Gender

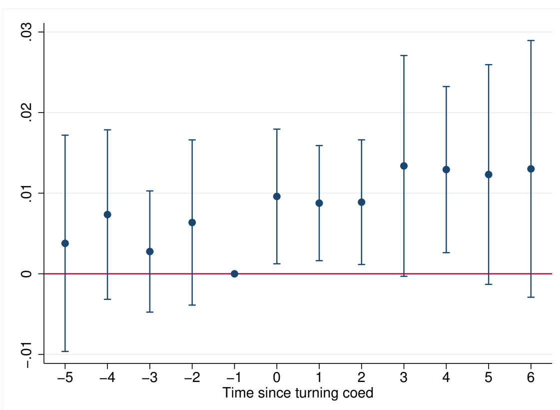
(a) Number of Gender-Related Papers (Males)



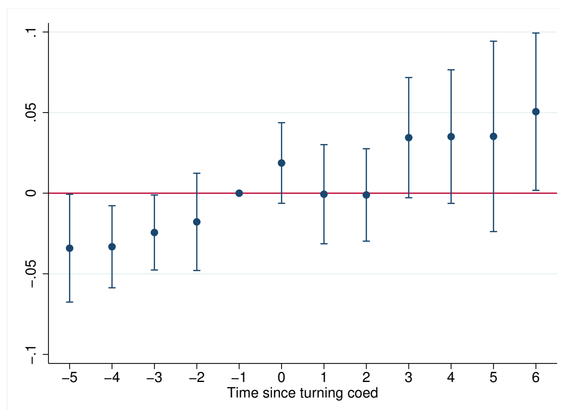
(b) Number of Gender-Related Papers (Females)



(c) Gender-Related Share (Males)



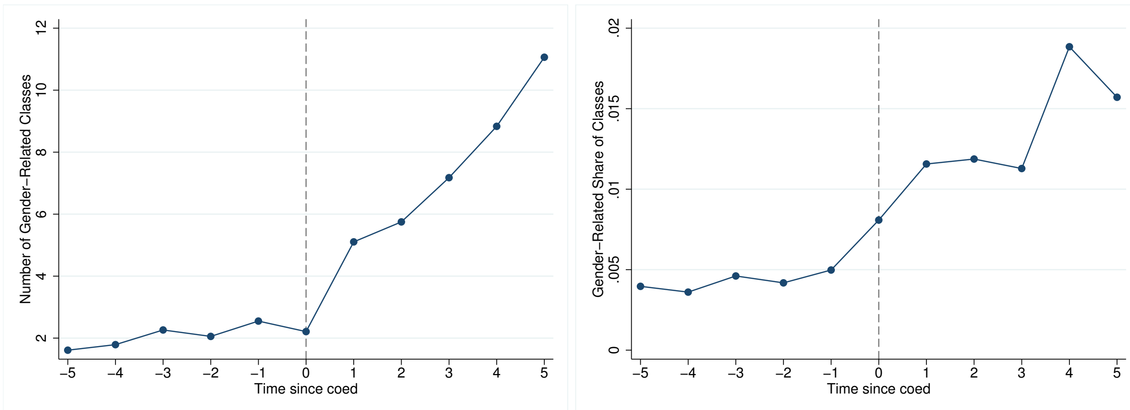
(d) Gender-Related Share (Females)



Notes: Figure A.18 plots the event time coefficients and their 95% confidence intervals from estimating (1) for incumbent researchers, defined as researchers who have published one paper at the school prior to $\tau = -1$. The dependent variables are number of gender-related publications (Figures A.18a and A.18b) and share of papers related to gender (Figures A.18c and A.18d). The specifications with the outcome number of gender-related papers are estimated using a Poisson model separately by gender. The specifications with the outcome gender-related share of papers are estimated using OLS separately by gender. All specifications include incumbent researcher fixed effects and year fixed effects. We also control for total publications, total publications with an abstract, and the average abstract length at the school-subfield. Standard errors are clustered at the school level.

Figure A.19: Trends in Course Offerings Related to Gender

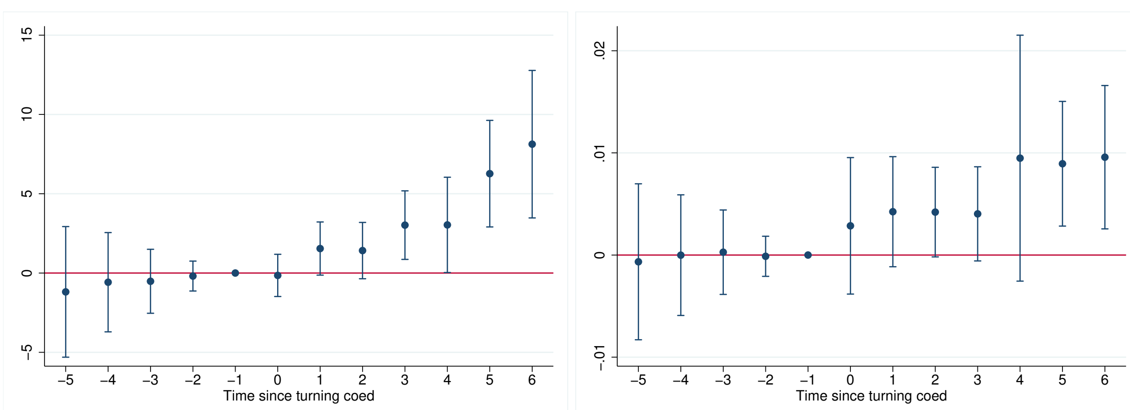
(a) Number of Gender-Related Classes (b) Gender-Related Share of Classes



Notes: This figure uses data from the course catalogue dataset we compiled (Truffa and Wong, 2024*b*). The sample includes the 22 universities for which we collected information on course offerings and course description.

Figure A.20: Effect of Turning Coed on Class Offerings Related to Gender

(a) Number of Gender-Related Classes (b) Share of Classes Related to Gender



Notes: These figures plot the event time coefficients and their 95% confidence intervals from estimating equation (1) for number of gender-related classes and share of classes related to gender. 95% confidence intervals are shown. In the specification, we include school fixed effects and year fixed effects fixed effects. We cluster at the school level. Data on courses are available for 22 universities with course description data.

Table A.1: List of Schools that Turned Coed

	School	Year Turn Coed
1	Case Western Reserve University	1960
2	Saint Francis College	1960
3	Catholic University Of America	1961
4	Santa Clara University	1961
5	Centre College Of Kentucky	1962
6	Texas A&M University	1962
7	St Marys University	1963
8	Brown University	1964
9	University Of San Francisco	1964
10	Saint Martin's College	1965
11	Saint Peter's College	1966
12	University Of New England	1967
13	Babson College	1968
14	John Carroll University	1968
15	Marist College	1968
16	Regis College	1968
17	Siena College	1968
18	Villanova University	1968
19	Franklin And Marshall College	1969
20	Georgetown University	1969
21	Kenyon College	1969
22	Princeton University	1969
23	Rockhurst College	1969
24	Saint Mary's College	1969
25	Trinity College	1969
26	Tulane University Of Louisiana	1969
27	University Of The South	1969
28	Washington & Jefferson College	1969
29	Wesleyan University	1969
30	Xavier University	1969
31	Yale University	1969
32	Boston College	1970
33	Colgate University	1970
34	Fairfield University	1970
35	La Salle University	1970
36	Lafayette College	1970
37	Providence College	1970
38	Rutgers University New Brunswick	1970
39	Saint Edward's University	1970
40	Saint Joseph's University	1970

Table A.1: List of Schools that Turned Coed – Continued

	School	Year Turn Coed
41	Saint Mary's College Of California	1970
42	Saint Michael's College	1970
43	Union College	1970
44	University Of Virginia-Main Campus	1970
45	Williams College	1970
46	Bowdoin College	1971
47	Lehigh University	1971
48	Loras College	1971
49	Loyola College	1971
50	Mount St Mary's University	1971
51	Randolph-Macon College	1971
52	Saint John Fisher College	1971
53	St John's University-New York	1971
54	Stevens Institute Of Technology	1971
55	College Of The Holy Cross	1972
56	Dartmouth College	1972
57	Davidson College	1972
58	Johns Hopkins University	1972
59	University Of Notre Dame	1972
60	Wofford College	1972
61	Loyola Marymount University	1973
62	Manhattan College	1973
63	University Of Scranton	1973
64	Fordham University	1974
65	Norwich University	1974
66	Saint Anselm College	1974
67	Amherst College	1975
68	United States Military Academy	1976
69	United States Naval Academy	1976
70	College Of Saint Thomas	1977
71	Hamilton College	1977
72	United States Coast Guard Academy	1978
73	Haverford College	1980
74	Columbia University In The City Of New York	1983
75	Saint Vincent College	1983
76	Washington And Lee University	1985

Notes: This table provides the list of schools that turned coed and their associated year of turning coed in chronological order. Data from the Coeducation College Database was compiled and generously provided by Goldin and Katz (2011).

Table A.2: Descriptive Statistics for Included versus Excluded Universities

(a) HEGIS Outcomes

	(1) Included Schools	(2) Excluded Schools	(3) Difference p-value in parentheses
Private	0.93	1.00	0.07
	(0.25)	(0.00)	(0.41)
Carnegie Classification			
Doctoral/Research Universities	0.28	0.10	-0.18
	(0.45)	(0.32)	(0.23)
Masters Colleges and Universities	0.34	0.30	-0.04
	(0.48)	(0.48)	(0.79)
Baccalaureate Colleges	0.32	0.30	-0.02
	(0.47)	(0.48)	(0.92)
Year of Opening	1850.89	1905.20	54.31
	(51.16)	(58.00)	(0.00)
Religious Affiliation			
Catholic	0.45	0.40	-0.05
	(0.50)	(0.52)	(0.78)
Presbytarian	0.05	0.10	0.05
	(0.22)	(0.32)	(0.55)
Methodist	0.03	0.00	-0.03
	(0.16)	(0.00)	(0.61)
Lutheran	0.00	0.00	0.00
	(0.00)	(0.00)	(.)
Baptist	0.00	0.00	0.00
	(0.00)	(0.00)	(.)
Nonsectarian	0.33	0.10	-0.23
	(0.47)	(0.32)	(0.14)
Total Degrees	539.48	113.78	-425.70
	(451.24)	(82.01)	(0.01)
Share of Revenue from Gifts	106.94	62.67	-44.27
	(101.00)	(45.58)	(0.30)
Total Current Revenue	143.38	119.25	-24.13
	(156.00)	(77.63)	(0.67)

Table A.2: Descriptive Statistics for Included versus Excluded Universities — Continued

(b) Research Outcomes

	(1) Included Schools	(2) Excluded Schools	(3) Difference p-value in parentheses
Total Papers	127.59	0.00	-127.59
	(336.60)	(0.00)	(0.24)
Total Gender-Related Papers	4.08	0.00	-4.08
	(14.22)	(0.00)	(0.37)
Total Papers from Female Researchers	19.39	0.00	-19.39
	(65.03)	(0.00)	(0.35)
Total Researchers	193.79	0.50	-193.29
	(495.99)	(0.58)	(0.44)
Female Researcher Share	0.12	0.00	-0.12
	(0.17)	(0.00)	(0.34)

Notes: Table A.2 presents the balance table for the 76 universities included in our sample compared to the 11 universities that were excluded because they did not have any research production in the humanities, social sciences, biology, medicine, or environmental science in the five years prior to the coeducation date: Pennsylvania State University - Mont Alto Campus (1963), Widener University - Pennsylvania Campus (1966), Biscayne College (1968), Illinois Benedictine College (1968), Delaware Valley College of Science and Agriculture (1969), Nichols College (1970), Christian Brothers College (1970), Menlo College (1971), Saint Mary's Seminary and University (1973), Webb Institute of Naval Arch (1978), and Westminster College (1979). All statistics are measured in the year prior to coeducation. Research outcomes are measured for all fields including non gender-related fields, such as physics and chemistry.

Table A.3: Summary Statistics

(a) Baseline $\tau = -1$ Summary Statistics at the School Level

	Mean	SD	Observations
Private	0.93	(0.25)	76
Carnegie Classification			
Doctoral/Research Universities	0.28	(0.45)	76
Masters Colleges and Universities	0.34	(0.48)	76
Baccalaureate Colleges	0.32	(0.47)	76
Other	0.07	(0.25)	76
Year of Opening	1850.89	(51.16)	76
Total Bachelor Degrees Awarded	539.48	(451.24)	50
Female Bachelor Degrees Share	0.07	(0.11)	50
Total Fall Enrollment	2496.04	(1995.81)	54
Female Fall Enrollment Share	0.06	(0.11)	54
Total Faculty	138.76	(217.20)	29
Female Faculty Share	0.08	(0.06)	20
Total Assistant Professors	50.35	(72.97)	26
Female Assistant Professor Share	0.13	(0.09)	19
Number of Papers	127.59	(336.60)	76
Number of Gender-Related Papers	4.08	(14.22)	76
Gender-Related Paper Share	0.03	(0.07)	67
Number of Gender-Related Papers (Gender-Related Fields)	4.01	(14.09)	76
Number of Female-Focused Medical Papers	1.33	(4.43)	76
Number of Researchers	193.79	(495.99)	76
Female Researcher Share	0.12	(0.17)	74

Notes: Table A.3a reports the summary statistics at the school level for the year prior to the first full year of coeducation. Data on Carnegie classification, years of opening as well as private/public status of the university come from HEGIS. Data on degrees awarded and fall enrollment come from the HEGIS/IPEDs database and are available for the years 1965-1998 and 1968-1998, respectively. The faculty data series come from HEGIS for the years 1971-1985. Data on papers and researchers come from the MAG database and are available for all the years between 1950 and 2005. Number of researchers is identified by assuming the researcher is at the university in all years between first and last publication date. Note that the difference in number of observations across research outcomes come from the fact that some universities published zero papers in the year prior to coeducation. School-level research outcomes are measured for all fields, including non gender-related fields, such as physics and chemistry.

Table A.3: Summary Statistics – Continued

(b) Baseline $\tau = -1$ Summary Statistics at the School-Subfield Level

	Mean/SD
Number of Researchers	7.18
	(18.94)
Female Researcher Share	0.10
	(0.22)
Number of Papers	9.25
	(26.40)
Number of Gender-Related Papers	0.57
	(2.76)
Number of Gender-Related Papers (Titles)	0.19
	(0.95)
Number of Gender-Related Papers (Abstracts)	0.49
	(2.52)
Gender Paper Share	0.04
	(0.15)
School-Subfield Observations	2146

Notes: In Table A.3b, we report summary statistics at the school-subfield level for the year prior to the first full year of coeducation. For this table, we only include the gender-related fields defined in Section 3.4. Data comes from the MAG database. Number of gender-related papers is the number of papers that contain one of the gender-related words we defined in Section 3.3 in the title or abstract. Gender-related paper share is the share of gender-related papers produced at the school-subfield.

Table A.3: Summary Statistics – Continued

(c) Baseline $\tau = -1$ Summary Statistics at the Researcher Level

	All	Male	Female
Years of Publication Experience	5.74	5.91	4.85
	(6.74)	(6.80)	(6.32)
Years at Turn Coed School	5.61	5.76	4.80
	(6.67)	(6.74)	(6.27)
Number of Papers	1.02	1.05	0.89
	(1.35)	(1.40)	(1.08)
Any Gender-Related Paper	0.05	0.04	0.07
	(0.21)	(0.20)	(0.26)
Number of Gender-Related Papers	0.05	0.05	0.08
	(0.27)	(0.26)	(0.32)
Share of Gender-Related Papers	0.05	0.05	0.09
	(0.21)	(0.20)	(0.28)
Researcher Observations	8319	6974	1345

Notes: In Table A.3c, we report summary statistics at the researcher level for all gender, for male researchers only and for female researchers only in the year before the school turned coed. We define years of publication experience to be the number of years since first publication for each researcher. Years at turn coed school is the number of years of experience at the school that turns coed.

Table A.4: Correlates of Year of Turning Coed

	(1) Year Turn Coed	
	β	SE
Private	-2.259	(2.710)
Carnegie Classification		
Doctoral/Research Universities	-1.058	(1.305)
Masters Colleges and Universities	-1.785	(0.966)
Baccalaureate Colleges	1.038	(1.209)
Year of Opening	-0.024	(0.011)
Religious Affiliation		
Catholic	-1.322	(1.092)
Presbytarian	-2.153	(1.992)
Methodist	1.243	(0.671)
Nonsectarian	2.132	(1.265)
Total Degrees (1965)	0.001	(0.002)
Share of Revenue from Gifts (1969)	-0.013	(0.005)
Total Current Revenue (1969)	0.000	(0.001)
Total Papers (1960)	0.003	(0.005)
Total Gender-Related Papers (1960)	0.173	(0.167)
Female Paper Share (1960)	-0.483	(3.360)
Total Researchers (1960)	0.002	(0.004)
Female Researcher Share (1960)	-4.727	(4.534)

Notes: Each coefficient and standard error reported come from a bivariate regression where the dependent variable is the year of coeducation and the independent variable is the corresponding school characteristic. Note that we do not have faculty data from HEGIS prior to 1971. Data on researchers come from MAG.

Table A.5: Effect of Turning Coed on Gender-Related Research by Gender

	Number of Gender-Related Papers		Number of Gender-Related Papers (Title)		Number of Gender-Related Papers (Abstract)	
	(1) Male	(2) Female	(3) Male	(4) Female	(5) Male	(6) Female
Years -5 to -2	0.081	-0.111	0.211	0.169	0.051	-0.220
	(0.079)	(0.122)	(0.137)	(0.248)	(0.089)	(0.091)
Years 0 to 2	0.170	0.124	-0.041	0.116	0.181	0.191
	(0.098)	(0.153)	(0.141)	(0.163)	(0.111)	(0.170)
Years 3 to 6	0.395	0.336	0.097	0.159	0.385	0.394
	(0.134)	(0.232)	(0.190)	(0.236)	(0.157)	(0.297)
Baseline Mean	0.43	0.48	0.14	0.19	0.38	0.39
Observations	53630	27123	41100	22249	46336	23677
Estimator	Poisson	Poisson	Poisson	Poisson	Poisson	Poisson

Notes: Table A.5 reports the average effects from estimating equation (1) on gender-related research outcomes by gender of the author. Each column reports estimates from a separate regression, estimated at the school-subfield level. Effect at event time $\tau = -1$ is normalized to 0. Baseline mean is the mean of the outcome variable at $\tau = -1$. The coefficient for Years -5 to -2 is the pre-period average of the coefficients for $\tau = -5$ to $\tau = -2$. The coefficient for Years 0 to 2 is the post-period average of the coefficients for $\tau = 0$, $\tau = 1$, and $\tau = 2$. Similarly, the coefficient for Years 3 to 6 is the average of the coefficients for $\tau = 3$ to $\tau = 6$. All regressions include school-subfield fixed effects, year fixed effects, and discipline-by-year fixed effects. We also control for total publications, total publications with an abstract, and the average abstract length at the school-subfield. All regressions are estimated using a conditional fixed-effect Poisson model at the school-subfield-year level. School-subfield groups without variation or less than two observations are dropped from the respective sample in Poisson models. Standard errors in parentheses are clustered at the school level.

Table A.6: Effect of Turning Coed on Gender-Related Research Written by New Researchers by Gender

	Number of Gender-Related Papers		Number of Gender-Related Papers (Title)		Number of Gender-Related Papers (Abstract)	
	(1) Male	(2) Female	(3) Male	(4) Female	(5) Male	(6) Female
Years -5 to -2	0.332	-0.166	0.555	0.156	0.234	-0.278
	(0.143)	(0.161)	(0.202)	(0.246)	(0.157)	(0.157)
Years 0 to 2	0.395	-0.099	0.217	0.324	0.387	0.021
	(0.144)	(0.273)	(0.291)	(0.386)	(0.155)	(0.278)
Years 3 to 6	0.730	0.323	0.426	0.409	0.697	0.563
	(0.195)	(0.404)	(0.365)	(0.685)	(0.215)	(0.442)
Baseline Mean	0.10	0.19	0.03	0.05	0.09	0.15
Observations	38173	22589	26791	16652	33619	19151
Estimator	Poisson	Poisson	Poisson	Poisson	Poisson	Poisson

Notes: This table reports the average effects from estimating equation (1) on gender-related research outcomes written by new researchers by gender of the author. New researchers are defined as those who have never published a paper at the university before. Each column reports estimates from a separate regression, estimated at the school-subfield level. Effect at event time $\tau = -1$ is normalized to 0. Baseline mean is the mean of the outcome variable at $\tau = -1$. The coefficient for Years -5 to -2 is the pre-period average of the coefficients for $\tau = -5$ to $\tau = -2$. The coefficient for Years 0 to 2 is the post-period average of the coefficients for $\tau = 0$, $\tau = 1$, and $\tau = 2$. Similarly, the coefficient for Years 3 to 6 is the average of the coefficients for $\tau = 3$ to $\tau = 6$. All regressions include school-subfield fixed effects, year fixed effects, and discipline-by-decade fixed effects. All regressions are estimated using a conditional fixed-effect Poisson model at the school-subfield-year level. School-subfield groups without variation or less than two observations are dropped from the respective sample in Poisson models. Standard errors in parentheses are clustered at the school level.

Table A.7: Effect of Turning Coed on Gender-Related Papers by Field

	(1) Years 0 to 2	(2) Years 3 to 6
Humanities	0.264	0.720
	(0.380)	(0.240)
Biology	1.452	1.257
	(0.502)	(0.375)
Medicine	1.323	1.129
	(0.477)	(0.399)
Psychology	1.482	1.316
	(0.390)	(0.382)
Sociology	0.982	1.218
	(0.483)	(0.379)
Economics	1.265	1.168
	(0.391)	(0.345)
Other	0.699	0.610
	(0.677)	(0.400)

Notes: This table reports the implied average effects for each field of study from estimating a modified version of equation (1) in which we interacted each event time dummy with a categorical variable for the field. The outcome variable is the total number of gender-related papers. The estimates for Years 0 to 2 is the post-period average of the coefficients for $\tau = 0$, $\tau = 1$, and $\tau = 2$. Similarly, the coefficient for Years 3 to 6 is the average of the coefficients for $\tau = 3$ to $\tau = 6$. The specification is estimated using a conditional fixed effects Poisson model and includes school-subfield fixed effects, year fixed effects, and discipline-by-year fixed effects. We also control for total publications, total publications with an abstract, and the average abstract length at the school-subfield. Due to the small sample size, we grouped together arts, philosophy, and history as "humanities". Economics includes both economics and business. Other fields include environmental science and political science. Standard errors in parentheses are clustered at the school level.

Table A.8: Heterogeneity by Change in Female Share of Bachelor's Degrees Awarded from $\tau = -1$ to $\tau = 3$

	(1) Gender-Related Papers
Years 0 to 2	0.335
	(0.358)
Years 0 to 2 × Above Median	0.933
	(0.362)
Years 3 to 6	0.478
	(0.711)
Years 3 to 6 × Above Median	0.719
	(0.382)
Baseline Mean	0.574
Observations	24709
Estimator	Poisson

Notes: This table reports the average effects from estimating equation (1) on the total number of gender-related papers with an interaction term for whether the university is above the median in the distribution of the change in female bachelor's degree share from $\tau = -1$ to $\tau = 3$. Universities with an above median change in female enrollment on average experienced an increase of 28 percentage points in the share of female bachelor's degrees awarded. In comparison, universities with a below median change on average experienced an increase of 11 percentage points. Effect at event time $\tau = -1$ is normalized to 0. Baseline mean is the mean of the outcome variable at $\tau = -1$. The coefficient for Years 0 to 2 is the post-period average of the coefficients for $\tau = 0$, $\tau = 1$, and $\tau = 2$. Similarly, the coefficient for Years 3 to 6 is the average of the coefficients for $\tau = 3$ to $\tau = 6$. All regressions include school-subfield fixed effects, year fixed effects, and discipline-by-decade fixed effects. Note that due to the smaller sample, the Poisson only converges with discipline-by-decade fixed effects and not with field-by-year. We also control for total publications, total publications with an abstract, and the average abstract length at the school-subfield. All regressions are estimated using a conditional fixed-effect Poisson model at the school-subfield-year level. School-subfield groups without variation or less than two observations are dropped from the respective sample in Poisson models. Standard errors in parentheses are clustered at the school level.

Table A.9: Effect of Turning Coed on Total Faculty and Researchers

	(1) HEGIS Total Faculty	(2) MAG Total Researchers
Years -5 to -2	-45.459	5.436
	(59.593)	(10.627)
Years 0 to 2	-20.255	-1.758
	(26.882)	(10.159)
Years 3 to 6	-7.053	-0.060
	(33.836)	(35.158)
Baseline Mean	191.62	193.79
Observations	1643	2842
Estimator	OLS	OLS

Notes: This table reports the average effects from estimating equation (1) on total number of faculty and number of researchers. Each column reports estimates from a separate regression. Effect at event time $\tau = -1$ is normalized to 0. Baseline mean is the mean of the outcome variable at $\tau = -1$. The coefficient for Years -5 to -2 is the pre-period average of the coefficients for $\tau = -5$ to $\tau = -2$. The coefficient for Years 0 to 2 is the post-period average of the coefficients for $\tau = 0$, $\tau = 1$, and $\tau = 2$. Similarly, the coefficient for Years 3 to 6 is the average of the coefficients for $\tau = 3$ to $\tau = 6$. All regressions include school fixed effects and year fixed effects. All regressions are estimated using OLS. Standard errors in parentheses are clustered at the school level.

Table A.10: Effect of Turning Coed on Share of Researchers in Female-Dominated Fields

	(1) Share of Researchers in Female-Dominated Fields
Years 0 to 2	0.003
	(0.021)
Years 3 to 6	0.013
	(0.037)
Baseline Mean	0.415
Observations	2701
Estimator	OLS

Notes: This table reports the average effects from estimating equation (1) on the share of researchers in female-dominated fields. We classify as female-dominated the fields in which women were over-represented in the sample of universities that already switched to coeducation prior to our sample period. These fields are medicine, philosophy, art, sociology and psychology. Effect at event time $\tau = -1$ is normalized to 0. Baseline mean is the mean of the outcome variable at $\tau = -1$. The coefficient for Years 0 to 2 is the post-period average of the coefficients for $\tau = 0$, $\tau = 1$, and $\tau = 2$. Similarly, the coefficient for Years 3 to 6 is the average of the coefficients for $\tau = 3$ to $\tau = 6$. The regression includes school fixed effects and year fixed effects. The specification is estimated using OLS at the school level. Standard errors in parentheses are clustered at the school level.

Table A.11: Effect of Turning Coed on Total Papers at the Researcher Level

	(1) Total Papers
Years -5 to -2	-0.002
	(0.012)
Years 0 to 2	-0.001
	(0.014)
Years 3 to 6	0.022
	(0.022)
Baseline Mean	0.90
Observations	490071
Estimator	OLS

Notes: This table reports the average effects from estimating equation (1) on total number of papers, measured at the researcher level. Effect at event time $\tau = -1$ is normalized to 0. Baseline mean is the mean of the outcome variable at $\tau = -1$. The coefficient for Years -5 to -2 is the pre-period average of the coefficients for $\tau = -5$ to $\tau = -2$. The coefficient for Years 0 to 2 is the post-period average of the coefficients for $\tau = 0$, $\tau = 1$, and $\tau = 2$. Similarly, the coefficient for Years 3 to 6 is the average of the coefficients for $\tau = 3$ to $\tau = 6$. All regressions include school fixed effects and year fixed effects. All regressions are estimated using OLS at the researcher level. Standard errors in parentheses are clustered at the school level.

Table A.12: Effect of Turning Coed on Total Papers at the Researcher Level by Female-Dominated Fields

	Total Papers	
	(1) Researcher in Female-Dom. Field	(2) Researcher in Male-Dom. Field
Years -5 to -2	0.001	-0.007
	(0.017)	(0.016)
Years 0 to 2	-0.001	-0.001
	(0.014)	(0.014)
Years 3 to 6	0.010	0.044
	(0.030)	(0.032)
Baseline Mean	0.90	0.90
Observations	271094	218975
Estimator	OLS	OLS

Notes: This table reports the average effects from estimating equation (1) on total number of papers, measured at the researcher level. The sample in Column (1) is restricted to only researchers in female-dominated fields while the sample in Column (2) is restricted to non female-dominated fields. Effect at event time $\tau = -1$ is normalized to 0. Baseline mean is the mean of the outcome variable at $\tau = -1$. The coefficient for Years -5 to -2 is the pre-period average of the coefficients for $\tau = -5$ to $\tau = -2$. The coefficient for Years 0 to 2 is the post-period average of the coefficients for $\tau = 0$, $\tau = 1$, and $\tau = 2$. Similarly, the coefficient for Years 3 to 6 is the average of the coefficients for $\tau = 3$ to $\tau = 6$. All regressions include school fixed effects and year fixed effects. All regressions are estimated using OLS at the researcher level. Standard errors in parentheses are clustered at the school level.

Table A.13: Effect of Turning Coed on Gender Composition of the Faculty

	(1) Female Faculty Share	(2) Female Asst. Professor Share	(3) Female Assoc. Professor Share	(4) Female Full Professor Share
Years -5 to -2	0.008	0.012	0.001	0.009
	(0.022)	(0.036)	(0.026)	(0.013)
Years 0 to 2	0.013	0.015	0.010	-0.003
	(0.011)	(0.017)	(0.018)	(0.008)
Years 3 to 6	0.020	0.048	0.006	0.005
	(0.013)	(0.021)	(0.026)	(0.010)
Baseline Mean	0.08	0.13	0.06	0.01
Observations	1635	1629	1629	1629
Estimator	OLS	OLS	OLS	OLS

Notes: Table A.13 reports the average effects from estimating equation (1) for female faculty outcomes. Each column reports estimates from a separate regression. Effect at event time $\tau = -1$ is normalized to 0. Baseline mean is the mean of the outcome variable at $\tau = -1$. The coefficient for Years -5 to -2 is the pre-period average of the coefficients for $\tau = -5$ to $\tau = -2$. The coefficient for Years 0 to 2 is the post-period average of the coefficients for $\tau = 0$, $\tau = 1$, and $\tau = 2$. Similarly, the coefficient for Years 3 to 6 is the average of the coefficients for $\tau = 3$ to $\tau = 6$. Data comes from HEGIS faculty data. All regressions include school fixed effects and year fixed effects. All regressions are estimated using OLS at the school level. Standard errors in parentheses are clustered at the school level.

Table A.14: Effect of Turning Coed on Gender Composition of Researchers (MAG)

	(1) Female Researcher Share	(2) Female Young Researcher Share
Years -5 to -2	0.00413	0.00415
	(0.00749)	(0.0125)
Years 0 to 2	-0.010	-0.019
	(0.010)	(0.014)
Years 3 to 6	-0.006	0.002
	(0.021)	(0.029)
Baseline Mean	0.12	0.13
Observations	16373	14432
Estimator	OLS	OLS

Notes: This table reports the average effects from estimating equation (1) on the share of female researchers at the school by field level. Young researchers are those with less than 5 years of publication experience. Each column reports estimates from a separate regression. Effect at event time $\tau = -1$ is normalized to 0. Baseline mean is the mean of the outcome variable at $\tau = -1$. The coefficient for Years -5 to -2 is the pre-period average of the coefficients for $\tau = -5$ to $\tau = -2$. The coefficient for Years 0 to 2 is the post-period average of the coefficients for $\tau = 0$, $\tau = 1$, and $\tau = 2$. Similarly, the coefficient for Years 3 to 6 is the average of the coefficients for $\tau = 3$ to $\tau = 6$. All regressions include school fixed effects, year fixed effects, and discipline-by-year fixed effects. All regressions are estimated using OLS at the school by field level. Standard errors in parentheses are clustered at the school level.

Table A.15: Effect of Turning Coed on Probability of Having Prior Interests in Gender

	(1) Any Prior Interest in Gender-Related Topics
Years 0 to 2	0.021
	(0.003)
Years 3 to 6	0.053
	(0.007)
Baseline Mean	0.021
Observations	129241
Estimator	OLS

Notes: This table reports the average effects from estimating equation (1) on an indicator for having prior interests in gender topics. Researchers interested in gender are defined as those who have either written a gender-related paper, referenced a gender-related paper, or co-authored with a person who has written a gender-related paper at least once before the policy change. Effect at event time $\tau = -1$ is normalized to 0. Baseline mean is the mean of the outcome variable at $\tau = -1$. The coefficient for Years 0 to 2 is the post-period average of the coefficients for $\tau = 0$, $\tau = 1$, and $\tau = 2$. Similarly, the coefficient for Years 3 to 6 is the average of the coefficients for $\tau = 3$ to $\tau = 6$. Estimation is at the researcher level. All regressions include incumbent researcher fixed effects, school fixed effects, and year fixed effects. All regressions are estimated using OLS at the school level. Standard errors in parentheses are clustered at the school level.

Table A.16: Effect of Turning Coed for Incumbent Researchers by Gender

	Gender-Related Papers		Gender-Related Share	
	(1) Male	(2) Female	(3) Male	(4) Female
Years -5 to -2	0.122	-0.121	0.005	-0.027
	(0.092)	(0.134)	(0.004)	(0.012)
Years 0 to 2	0.170	0.288	0.009	0.006
	(0.121)	(0.118)	(0.003)	(0.011)
Years 3 to 6	0.352	0.821	0.013	0.039
	(0.153)	(0.219)	(0.006)	(0.021)
Baseline Mean	0.05	0.08	0.05	0.09
Observations	50463	10255	66887	11071
Estimator	Poisson	Poisson	OLS	OLS

Notes: Table A.16 reports the average effects from estimating equation (1) on gender-related research outcomes restricted to incumbent researchers, defined as researchers who have published one paper at the school prior to $\tau = -1$. Each column reports estimates from a separate regression. Regressions for each gender are estimated separately. Effect at event time $\tau = -1$ is normalized to 0. Baseline mean is the mean of the outcome variable at $\tau = -1$. The coefficient for Years 0 to 2 is the post-period average of the coefficients for $\tau = 0$, $\tau = 1$, and $\tau = 2$. Similarly, the coefficient for Years 3 to 6 is the average of the coefficients for $\tau = 3$ to $\tau = 6$. All specifications include incumbent researcher fixed effects and year fixed effects. We also control for total publications, total publications with an abstract, and the average abstract length at the school-subfield. Columns (1) and (2) are estimated using a conditional fixed-effect Poisson model at the researcher level. Researcher groups without variation or less than two observations are dropped from the respective sample in Poisson models. Columns (3) and (4) are estimated using OLS. Standard errors in parentheses are clustered at the school level.

Table A.17: Effect of Turning Coed on Number and Share of Classes Related to Gender

	(1) Number of Gender-Related Classes	(2) Gender-Related Class Share
Years -5 to -2	-0.620	-0.000
	(1.259)	(0.002)
Years 0 to 2	0.937	0.004
	(0.703)	(0.003)
Years 3 to 6	5.112	0.008
	(1.524)	(0.003)
Baseline Mean	2.55	0.00
Observations	373	373
Estimator	OLS	OLS

Notes: This table reports the average effects from estimating equation (1) on number of gender-related classes (Column (1)) and share of classes related to gender (Column (2)). Effect at event time $\tau = -1$ is normalized to 0. Baseline mean is the mean of the outcome variable at $\tau = -1$. The coefficient for Years -5 to -2 is the pre-period average of the coefficients for $\tau = -5$ to $\tau = -2$. The coefficient for Years 0 to 2 is the post-period average of the coefficients for $\tau = 0$, $\tau = 1$, and $\tau = 2$. Similarly, the coefficient for Years 3 to 6 is the average of the coefficients for $\tau = 3$ to $\tau = 6$. All regressions include school fixed effects and year fixed effects. All regressions are estimated using OLS at the school level. Data on courses are available for 22 universities with course description data. Standard errors in parentheses are clustered at the school level.

Table A.18: Gender-Related Research in Psychology

	(1) Gender-Related Papers
Years 0 to 2	-0.165
	(0.164)
Years 0 to 2 × Experimental	0.890
	(0.199)
Years 3 to 6	-0.210
	(0.223)
Years 3 to 6 × Experimental	0.626
	(0.165)
Baseline Mean	0.54
Observations	18031
Estimator	Poisson

Notes: This table reports the average effects from estimating a modified version of equation (1) in which we interact the event time dummies with an indicator variable for experimental research. We classify a paper as experimental if it contains one of the words "experiment", "lab", "participant", "treat", or "control" in the title or abstract. The outcome variable is the total number of gender-related papers. The sample is restricted to psychology papers. Effect at event time $\tau = -1$ is normalized to 0. Baseline mean is the mean of the outcome variable at $\tau = -1$. The coefficient for Years -5 to -2 is the pre-period average of the coefficients for $\tau = -5$ to $\tau = -2$. The coefficient for Years 0 to 2 is the post-period average of the coefficients for $\tau = 0$, $\tau = 1$, and $\tau = 2$. Similarly, the coefficient for Years 3 to 6 is the average of the coefficients for $\tau = 3$ to $\tau = 6$. The regression includes school-subfield fixed effects, year fixed effects, and experimental research-by-year fixed effects. We also control for total publications, total publications with an abstract, and the average abstract length at the school-subfield. The specification is estimated using a conditional fixed-effect Poisson model. School-subfield groups without variation or less than two observations are dropped from the respective sample in Poisson models. Standard errors in parentheses are clustered at the school level.

Table A.19: Experimental Gender-Related Research in Medicine and Biology

	(1) Medicine	(2) Biology
Years 0 to 2	0.050	0.288
	(0.085)	(0.156)
Years 0 to 2 × Experimental	-0.065	-0.325
	(0.141)	(0.217)
Years 3 to 6	0.351	0.523
	(0.119)	(0.240)
Years 3 to 6 × Experimental	-0.155	-0.091
	(0.118)	(0.196)
Baseline Mean	0.85	0.36
Observations	34121	22535
Estimator	Poisson	Poisson

Notes: This table reports the average effects from estimating a modified version of equation (1) in which we interact the event time dummies with an indicator variable for experimental research. We classify a paper as experimental if it contains one of the words "experiment", "lab", "participant", "treat", or "control" in the title or abstract. The outcome variable is the total number of gender-related papers. The sample is restricted to papers in medicine (column 1) and in biology (column 2), respectively. Effect at event time $\tau = -1$ is normalized to 0. Baseline mean is the mean of the outcome variable at $\tau = -1$. The coefficient for Years -5 to -2 is the pre-period average of the coefficients for $\tau = -5$ to $\tau = -2$. The coefficient for Years 0 to 2 is the post-period average of the coefficients for $\tau = 0$, $\tau = 1$, and $\tau = 2$. Similarly, the coefficient for Years 3 to 6 is the average of the coefficients for $\tau = 3$ to $\tau = 6$. The regression includes school-subfield fixed effects, year fixed effects, and experimental research-by-year fixed effects. We also control for total publications, total publications with an abstract, and the average abstract length at the school-subfield. The specification is estimated using a conditional fixed-effect Poisson model. School-subfield groups without variation or less than two observations are dropped from the respective sample in Poisson models. Standard errors in parentheses are clustered at the school level.

Table A.20: Effect of Turning Coed on Co-Authorship with Female Researchers among Incumbent Researchers

	Probability of Writing a Gender-Related Paper			Probability of Co-Authoring a Gender-Related Paper with a Female Researcher		
	(1) All	(2) Male	(3) Female	(4) All	(5) Male	(6) Female
Years -5 to -2	-0.001	0.003	-0.028	-0.001	0.000	-0.007
	(0.006)	(0.006)	(0.014)	(0.004)	(0.005)	(0.008)
Years 0 to 2	0.011	0.010	0.019	0.001	-0.001	0.010
	(0.005)	(0.006)	(0.015)	(0.002)	(0.002)	(0.010)
Years 3 to 6	0.021	0.016	0.062	0.009	0.007	0.021
	(0.008)	(0.008)	(0.022)	(0.005)	(0.004)	(0.014)
Baseline Mean	0.08	0.07	0.12	0.02	0.01	0.03
Observations	77958	66887	11071	77958	66887	11071
Estimator	OLS	OLS	OLS	OLS	OLS	OLS

Notes: This table reports the average effects from estimating equation (1) for two outcome variables: an indicator variable that takes value one if the researcher has published at least one gender-related paper in that year (Columns 1-3) and an indicator variable that takes value one if the researcher has at least one gender-related research paper co-authored with a female researcher (Columns 4-6). Each column reports estimates from a separate regression. Column (1) and (4) include the full sample of incumbent researchers. Columns (2) and (5) are restricted to only male incumbent researchers. Column (3) and (6) are restricted to only female incumbent researchers. Effect at event time $\tau = -1$ is normalized to 0. Baseline mean is the mean of the outcome variable at $\tau = -1$. The coefficient for Years -5 to -2 is the pre-period average of the coefficients for $\tau = -5$ to $\tau = -2$. The coefficient for Years 0 to 2 is the post-period average of the coefficients for $\tau = 0$, $\tau = 1$, and $\tau = 2$. Similarly, the coefficient for Years 3 to 6 is the average of the coefficients for $\tau = 3$ to $\tau = 6$. All regressions include incumbent researcher fixed effects and year fixed effects. We also control for total publications, total publications with an abstract, and the average abstract length at the school-subfield. All regressions are estimated using OLS. Standard errors in parentheses are clustered at the school level.

Table A.21: Effect of Turning Coed on Co-Authorship with Female Researchers among Incumbent Researchers

	Probability of Co-Authoring with a Female Researcher		
	(1) All	(2) Male	(3) Female
Years -5 to -2	0.006	0.004	0.009
	(0.005)	(0.005)	(0.015)
Years 0 to 2	0.004	-0.004	0.055
	(0.007)	(0.007)	(0.027)
Years 3 to 6	-0.005	-0.016	0.062
	(0.010)	(0.011)	(0.036)
Baseline Mean	0.16	0.15	0.20
Observations	77958	66887	11071
Estimator	OLS	OLS	OLS

Notes: This table reports the average effects from estimating equation (1) on an indicator variable that takes value one if the researcher has published at least one research paper co-authored with a female researcher in that year. Each column reports estimates from a separate regression. Column (1) and (4) include the full sample of incumbent researchers. Columns (2) and (5) are restricted to only male incumbent researchers. Column (3) and (6) are restricted to only female incumbent researchers. Effect at event time $\tau = -1$ is normalized to 0. Baseline mean is the mean of the outcome variable at $\tau = -1$. The coefficient for Years -5 to -2 is the pre-period average of the coefficients for $\tau = -5$ to $\tau = -2$. The coefficient for Years 0 to 2 is the post-period average of the coefficients for $\tau = 0$, $\tau = 1$, and $\tau = 2$. Similarly, the coefficient for Years 3 to 6 is the average of the coefficients for $\tau = 3$ to $\tau = 6$. All regressions include incumbent researcher fixed effects and year fixed effects. We also control for total publications, total publications with an abstract, and the average abstract length at the school-subfield. All regressions are estimated using OLS. Standard errors in parentheses are clustered at the school level.

B Data Appendix

B.1 Higher Education General Information Survey (HEGIS) and Integrated Postsecondary Education Data System (IPEDS)

Data on student enrollment, faculty, degrees awarded, and financial information come from the Integrated Postsecondary Education Data System (IPEDS) and its predecessor Higher

Education General Information Survey (HEGIS) collected by the United States Department of Education National Center for Education Statistics (NCES).[1] The HEGIS and IPEDS series provide comprehensive information on all public and private two-year and four-year colleges, universities and technical institutions that participate in the federal student financial aid programs as required by the Higher Education Act of 1965. The data series contain information on institution characteristics, enrollments, completions, faculty and staff, finances, among others.

For our analysis, we merge together the HEGIS data series on degrees awarded 1965 to 1984, faculty from 1971 to 1985, fall enrollment from 1968 to 1985, and finances from 1969 to 1984. Additionally, we extend the sample to include faculty data from 1986 to 1998, degrees data from 1985 to 1998, and finances from 1985 to 1986 from IPEDS. The earned degrees data series provide information on the degrees and other formal awards conferred by each institution by gender of the student and field of specialty. We utilize this dataset to look at changes in the female share of bachelor degrees awarded. The data on faculty contain information for each institution on number of faculty, salaries, and academic rank by contract length and gender. We pool together the total number of faculty by rank in both 9 month and 12 month contracts. Finally, the fall enrollment data contain information on total enrollments of full-time and part-time students by class level, sex, race, and first-time enrollment status. In our analysis, we focus on all full-time undergraduate enrollments.

Our main outcome measure for undergraduate gender composition will utilize data on undergraduate degrees awarded because the time series for fall enrollment data begins later. Specifically, we will examine the female share of bachelor degrees awarded and the log of total bachelor degrees awarded. We also provide results using the available fall enrollment data for full-time undergraduates to calculate female enrollment share.

Our outcome variable for faculty composition is the female share of all faculty including instructors, assistant professors, associate professors and full professors on either 9-month or 12-month contracts. Because we may expect schools to increase the number of female professors after turning coed, we also consider the female share of professors.

B.2 Microsoft Academic Graph

For our main outcome variables on gender-related research, we use the Microsoft Academic Graph (MAG) database (Sinha et al., 2015; Microsoft Research, 2018). MAG is a large database with information on over 207 million papers, linked to 250 million authors and their respective institutions. Each paper record can be linked to the field of study, author, affiliation of the author at time of publication, publication date, journal and abstract. Note

[1] HEGIS data series were accessed from the Inter-university Consortium for Political and Social Research (ICPSR) and IPEDS data were accessed from the NCES website.

that papers in this context include journal articles, books, conferences, and patents. We do not distinguish between these document types and refer to them as "papers". The data is aggregated from feeds from publishers and web-pages indexed by Microsoft search engine, Bing (Sinha et al., 2015). Therefore, we are likely to capture both published and working papers. Among the over 25,000 institutions represented in this dataset, we matched 87 out of 88 schools that turned coed between 1960 and 1990 in our sample.

We extracted information on all papers published by any researcher that was affiliated with the turning coed schools between 1950 and 2005. In our analysis, we only use observations of papers written at the turning coed institution. We also restrict our analysis to researchers who were ever at only one turning coed school.[2] These restrictions lead to a total number of 1,333,306 papers and 471,628 unique researchers. For some additional analyses, we also collected data for a sample of 453 schools that either opened as coeducational universities prior to 1940 or turned coed after the end of our sample period in 1990.

B.3 Gender of the Researcher

Because the gender of the researcher is not provided in the MAG database, we use name-matching algorithms to identify the gender of the researcher by comparing the first name of the author to four established names databases. These include the US Social Security Administration baby name data, US Census data in the Integrated Public Use Microdata Series, and census microdata from Canada, Great Britain, Denmark, Iceland, Norway, and Sweden from 1801 to 1910 created by the North Atlantic Population Project. We accessed these databases using the R package, "Gender" (`https://cran.r-project.org/web/packages/gender/gender.pdf`). The R package "Gender" classifies a name as female if at least 50% of the names are women. We also accessed the OpenGenderTracking Project (`http://opengendertracking.github.io`) accessed using the Python package "Gender-Detector" (`https://pypi.org/project/gender-detector/`). This algorithm gives a best guess of the ratio of genders of people with a given name. We use the default statistical significance threshold of 95. In our main analysis, we consider an author to be female if at least one of these sources identifies the name to be female.[3] We matched 93% of the researchers to a gender.

[2]Less than 5% of researchers were at more than one treated school.

[3]This methodology of identifying gender of researchers is perhaps less conservative than prior studies that also used similar algorithms to assign gender to researchers. For example, Kim and Moser (2021) uses only one of the algorithms ("Gender-Detector").

C Definition of Gender-Related Papers

C.1 Keywords-Based Approach

C.1.1 Set of Gender-Related Words

We define two sets of gender-related words such as "female", "woman", and "mother". The purpose of using a second list is to show that our results are not dependent on the data source from which the list of gender-related words is drawn. The first list of words is compiled from the data source, Datamuse API, a word-finding query search engine that is based on Google Books Ngrams data and other corpus-based datasets.[4] We selected the top 20 most related words as "gender" and for each of these words, we collected five synonyms. Following the literature that has emphasized "female-focused" research and innovations (Koning, Samila and Ferguson, 2020), we exclude male-related words because historically men are considered "standard" in research. The second list is broader and is compiled from an alternative website, RelatedWords.org, using keyword searches "gender", "woman", and "female". The website provides an open-source search engine for finding related words and relies on several algorithms to provide the results. Among them, it crawls through ConceptNet, which is a knowledge database that connects words and phrases of natural language (Speer, Chin and Havasi, 2017). We present both lists below. While we will utilize the first list of words as our main definition, we will show robustness to using the broader list of words in Section 5.2.2.

Main Definition

lady female females feminine femininity wife daughter wives daughters gender gendered girl girls homosexuality intersexual ladies maidenly matronly misogyny mothers sex sexes sexism sexist sexual sexuality sexualized sexually unisexual venereal woman womanhood womanly women

Broad Definition

female woman women gender girl pregnancy fertility domestic menopause sex sexual breastfeed sexes feminine marriage marital wife daughter females daughters wives marriages femininity feminism sexism sexist mother motherhood maternity matrilineal matrilineality matriarch matrilocal widow nursing childbirth abortion pregnant pregnancy married dowry maternal contraception birth maiden lady virginity midwife midwifery concubine mistress infant bride bridal maid sorority maternity bachelorette misogyny matron divorce wedding

For both versions, we implemented a keyword search methodology based on regular expressions. This approach allows for the matching of words regardless of their leading or trailing characters, thus maximizing the potential identification of relevant words. For

[4] Accessed via `https://www.datamuse.com/api/`.

example, “daughter” could also match “daughterly” or “stepdaughter”. However, to ensure accuracy and avoid false positives, we implemented a comprehensive refinement process. Specifically, we analyzed random samples to identify and remove words or phrases that were incorrectly identified as gender-related. We iterated on this process and refinement process several times. To further reduce false positives, we introduced specific conditions to exclude irrelevant matches. For example, “daughter” would not match “daughter cell”, a term in biology unrelated to gender. Similarly, “sex” would not match “sextant”, “gender” would not match “engender”, and “lady” or would not match “malady”. After implementing these conditions, we sampled 540 papers randomly to verify the accuracy of our approach.

C.2 Machine-Learning Approach

To classify gender-related papers, we first construct a training sample. The training sample of papers are selected from a 50% random sample of all papers written between 1950 and 2005 by researchers affiliated at 453 universities that were already coeducational prior to 1940 or switch to coeducation after 1990. The training sample of gender-related papers consists of 5,434 papers classified by MAG in the field of “gender studies” and 8,923 published in gender-related journals.[5] For non gender-related papers, we use 1,900,208 papers whose titles do not contain any of the words in a broad set of gender-related words. The use of a training sample with gender-related and non gender-related papers follow the same logic as in Dittmar and Seabold (2015) and Becker and Pascali (2018).

It is important to note that in comparison to the non gender-related papers, the papers that are classified as gender-related make up a small minority of the entire training sample. This can lead to poor performance in most machine learning techniques for identifying the minority class. To address this issue, we implement a data augmentation for the minority class, Synthetic Minority Oversampling Technique (Chawla et al., 2002), a method that creates synthetic examples of the gender-related papers in order to balance the class distribution. This method has been shown to have higher performance than oversampling the minority class or undersampling the majority class. Next, we transform the text of the titles into a matrix of TF-IDF (term frequency-inverse document frequency) features. Each row of the matrix refers to a specific paper title and each column of the matrix represents a possible word in the corpus of titles. The entries of the matrix capture the weighted frequency

[5]We identify gender-related journals if the title of the journal contains one of the following words: “female”, “woman”, “women”, “gender”, “girl”, “pregnancy”, “fertility”, “menopause”, “sex”, “sexual”, “sexuality”, “sexes”, “feminine”, “wife”, “daughter”, “females”, “daughters”, “wives”, “femininity”, “feminism”, “sexism”, “sexist”, “mother”, “motherhood”, “maternity”, “matrilineal”, “matrilineality”, “matriarch”, “matrilocal”, “widow”, “childbirth”, “abortion”, “pregnant”, “married”, “dowry”, “maternal”, “contraception”, “birth”, “maiden”, “lady”, “midwife”, “midwifery”, “concubine”, “mistress”, “bride”, “bridal”, “maid”, “sorority”, “bachelorette”, “misogyny”, “matron”.

of each word. Words that appear frequently in the corpus are assigned less weight as they may carry less information than rarer words.

We then apply the Naïve Bayes (NB) classifier to this matrix to classify documents into gender-related papers. The Naïve Bayes algorithm is a text classification technique that is based on Bayes' Theorem with the assumption that each word in the title are conditionally independent of each other.[6] Naïve Bayes has been shown to have high performance in text classification problems and has been applied in the economics literature in recent papers such as Becker and Pascali (2018). After building the model on the training set of papers, we use it to compute the predicted probability of a paper being gender-related. We classify all papers as gender-related if the predicted probability is higher than 75%.

In our analysis, we use the keyword-based approach as our main definition of gender-related papers. The reason for this is twofold. First, the keyword-based approach provides an arguably more transparent method of identifying gender-related research and does not require the selection of a probability threshold as in the case of the machine learning approach. Second and more importantly, the training set for the machine learning models consists of papers in gender studies and gender-related journals. This may lead to an over-representation of papers in these specific fields with a dedicated gender-related journal, such as sociology and medicine.

C.3 Beyond Female-Focused Research

Our baseline gender-related research primarily focuses on female-related words. In this section, we expand the definition to include other genders and sexual identities. Specifically, we construct a list of keywords related to (i) men:
men, man, male, boy, dude, mankind, guy, gentleman, fellow, serviceman, father, signor, eunuch, brother, uncle, nephew, patriarch, patriarchy, widower, father, grandfather, dad, masculine, masculinity, boyfriend, androgen, son, andrology, manly, mannish, overman, manliness, bachelor, monsieur, husband, hombre, masculine, macho, patriarchal, virile, virility,
and a list of keywords related to (ii) LGBT: *lesbian, gay, transgender, cisgender, homosexual, homophile, queer, intersex, bisexuality, asexual, lgbt, bisexual, glbt, queers, homo, homophobia, sexuality, objectification, homosexuality, heterosexuality, heterosexism, misandry, misandrist, homophobe, sodomite, butches, bisexuals, homosexualism, asexuality, polyamorous, pansexual, genderqueer, agender, bigender, transvestism, biphobia, transphobia, polyamory, monosexuality*.

We classified research as men-related if one of the men-related keywords appear and similarly for LGBT-related research. Appendix Figure C.1a shows the TWFE Poisson estimates for the broader definition of gender-related research in which we augment the

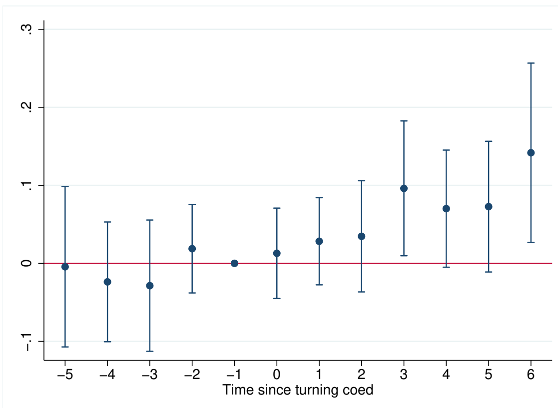
[6]Because the TF-IDF matrix contains continuous values, we use a multinomial Naïve Bayes algorithm.

baseline list of keywords with the men- and LGBT-related keywords. Similar to the main results, we observe a positive increase in research related to gender after coeducation. Appendix Figures C.1b and C.1c plot the analogous estimates for men- and LGBT-related research, respectively.[7] We find a positive but insignificant increase in men- and LGBT-related research. Then in Appendix Figure C.1d, we use as an outcome variable the share of female-related papers out of all papers related to any gender. This variable is constructed by dividing the total number of gender-related papers using the baseline definition by the total number of gender-related papers using the broad definition that includes men- and LGBT-related papers. Appendix Figure C.1d plots the linear estimates. We find a suggestive increase in more research focusing on women, although the estimates are imprecise. Appendix Table C.1 summarizes the results.

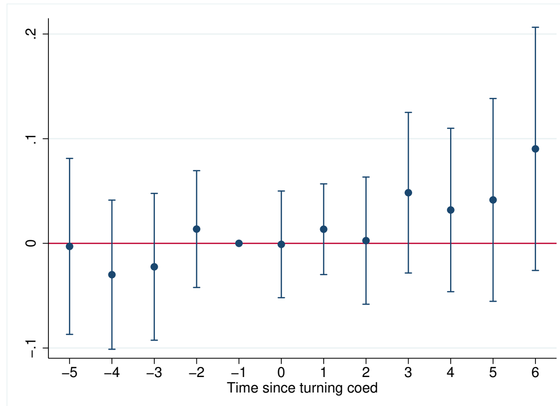
[7]Note that we allow papers to be classified into multiple categories. For example, a paper may be gender-related under the female-focused original definition and may also be considered men-related.

Figure C.1: Effect of Turning Coed on Number of Gender-Related Publications (All Genders and Sexualities)

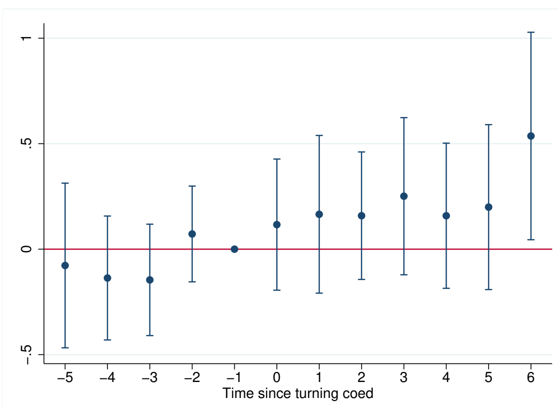
(a) Total Gender-Related Papers (All Genders and Sexualities)



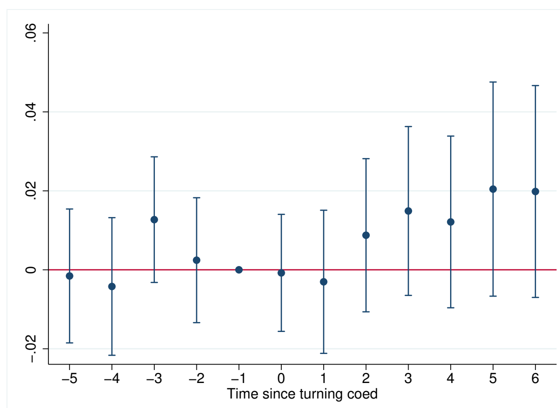
(b) Total Men-Related Papers



(c) Total LGBT-Related Papers



(d) Female-Related Share of Total Gender-Related Papers (All Genders and Sexualities)



Notes: These figures plot the event time coefficients and their 95% confidence intervals from estimating equation (1) for (a) total number of gender-related research including all genders and sexualities, (b) total men-related papers, (c) total LGBT-related papers, and (d) the female-related share of total gender-related papers. Except for (d), the specifications are estimated using conditional fixed effects Poisson models. For (d), the specification is estimated using OLS. In all specifications, we include school-subfield fixed effects, year fixed effects, and discipline-by-year fixed effects. We also control for total publications, total publications with an abstract, and the average abstract length at the school-subfield. We cluster at the school level.

Table C.1: Effect of Turning Coed on Gender-Related Research (Broad Alternative Definitions)

	(1) Number of Gender-Related Papers (Broad)	(2) Number of Men-Related Papers	(3) Number of LGBT-Related Papers
Years -5 to -2	-0.009	-0.010	-0.072
	(0.029)	(0.024)	(0.096)
Years 0 to 2	0.025	0.005	0.147
	(0.022)	(0.019)	(0.158)
Years 3 to 6	0.095	0.053	0.286
	(0.038)	(0.041)	(0.188)
Baseline Mean	5.47	4.66	0.23
Observations	94383	94297	40309
Estimator	Poisson	Poisson	Poisson

Notes: Table C.1 reports the average effects from estimating equation (1) on gender-related research outcomes: (1) total number of gender-related papers including all genders and sexualities, (2) total number of men-related papers, and (3) total number of LGBT-related papers. Each column reports estimates from a separate regression, estimated at the school-subfield level. Effect at event time $\tau = -1$ is normalized to 0. Baseline mean is the mean of the outcome variable at $\tau = -1$. The coefficient for Years -5 to -2 is the pre-period average of the coefficients for $\tau = -5$ to $\tau = -2$. The coefficient for Years 0 to 2 is the post-period average of the coefficients for $\tau = 0$, $\tau = 1$, and $\tau = 2$. Similarly, the coefficient for Years 3 to 6 is the average of the coefficients for $\tau = 3$ to $\tau = 6$. All regressions include school-subfield fixed effects, year fixed effects, and discipline-by-year fixed effects. We also control for total publications, total publications with an abstract, and the average abstract length at the school-subfield. All regressions are estimated using a conditional fixed-effect Poisson model at the school-subfield-year level. School-subfield groups without variation or less than two observations are dropped from the respective sample in Poisson models. Standard errors in parentheses are clustered at the school level.

C.4 Audit of Gender-Related Research Publications

In this section, we describe in detail the audit we conducted to classify gender-related research publications (Truffa and Wong, 2024*a*).

First, for each of the 12 fields in our analysis, we randomly selected 45 publications that we classified as gender-related using our baseline definition for a total of 540 papers. Then a team of RAs (two undergraduates, one master's student) were instructed to classify each of the same 540 papers into (i) research that is related to gender in terms of topics, (ii) research that focuses on sex differences, and (iii) not gender-related research based on the following definitions:

1. Gender Topic
    - Main focus of the paper is on a gender or sex-related topic, for example: gender differences in earnings, female labor force participation, women in Ancient Egypt, etc
2. Gender-Inclusive Sample (incl. non-human subjects)
    - Main focus of the paper is not gender or sex-related, but it presents analyses by sex or has a gender-diverse research sample (which may include nonhuman subjects), for example: labor force participation of men and women in the US.
3. Not Gender-Related
    - None of the above
    - Note: When this occurs, we asked the RA to identify why the algorithm incorrectly assumed it was not gender-related so that we we can improve the classification (for example, we now drop all papers that mention “daughter cell” as it is a term used in biology that is not related to women)

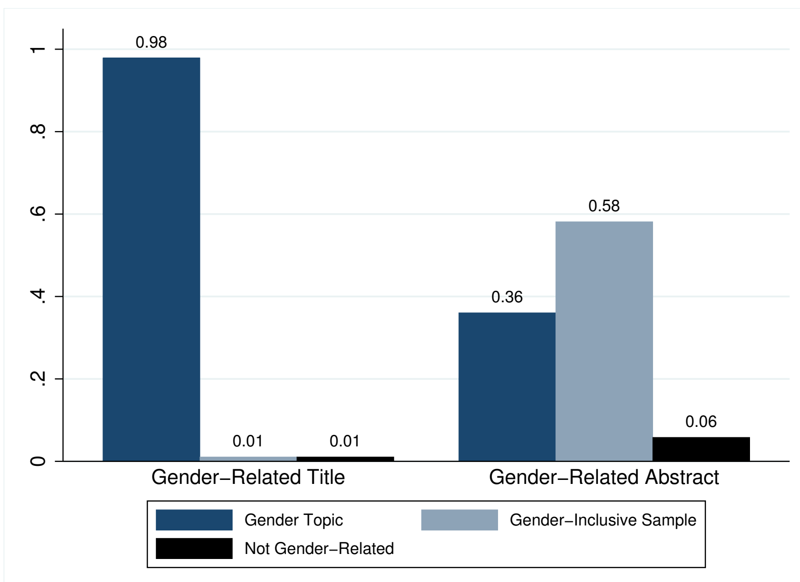
Additional Notes:

- Sometimes books do not have abstracts, but we have the list of chapter titles instead. If one of the listed chapter titles is about women, we consider the book to be gender-related (similar to observing a journal article on gender topics within a journal)
- We sometimes have fiction, book reviews, biographies, or autobiographies among our publications. If these have a female character, we classify them as:
    - Gender Topic if a woman is the main character
    - Gender-Inclusive Sample if she is not the main character
- If a paper is about sexuality or sexual violence, we consider it gender-related or gender-inclusive (based on the logic above).

Finally, we consider a paper to be in a specific category if at least two of the RAs agreed. The kappa-statistic of interrater agreement is 0.70, suggesting a high degree of agreement among the three RAs. In the random sample of 540 papers, we find that 66% are gender-related in terms of topics, such as "Accounting for Changes in the Labor Supply of Recently Divorced Women" (Johnson and Skinner, 1988). Another 29% are gender-related research papers on sex differences. For example, we classify the paper "Respiratory Effects of Household Exposures to Tobacco Smoke And Gas Cooking on Nonsmokers" (Helsing et al., 1982) as gender-related because it studies differences by sex. The remaining 5% of the papers are false positives. For instance, one such paper by Kaufman-Scarborough and Menzel Baker (2005) discusses the American Disabilities Act (ADA). While it references the women's movement in its abstract regarding the origins of the ADA, the paper's main focus is not on gender issues. Thus, it was erroneously categorized as gender-related research.

Appendix Figure C.2 shows that in papers identified as gender-related based on the title, 98% of the papers are classified as gender topic. In comparison, the majority of papers identified as gender-related based on the abstract have a gender-inclusive sample (58%) compared to gender topic (36%).

Figure C.2: Audit on Types of Gender-Related Research Based on Gender-Related Paper Title or Abstract



Appendix Figure C.3 presents the corresponding breakdown by field, while Appendix Figure C.4 shows the distribution of false positives across fields. We find that fields such as sociology and art are more likely to have gender-related topics than gender-inclusive samples, compared to fields like medicine and environmental science. We also find that biology has the highest rates of false positives at 16%. In Appendix Figure C.5, we show our results are robust to dropping fields with the highest number of false positives (biology and philosophy).

Figure C.3: Audit on Types of Gender-Related Research By Field

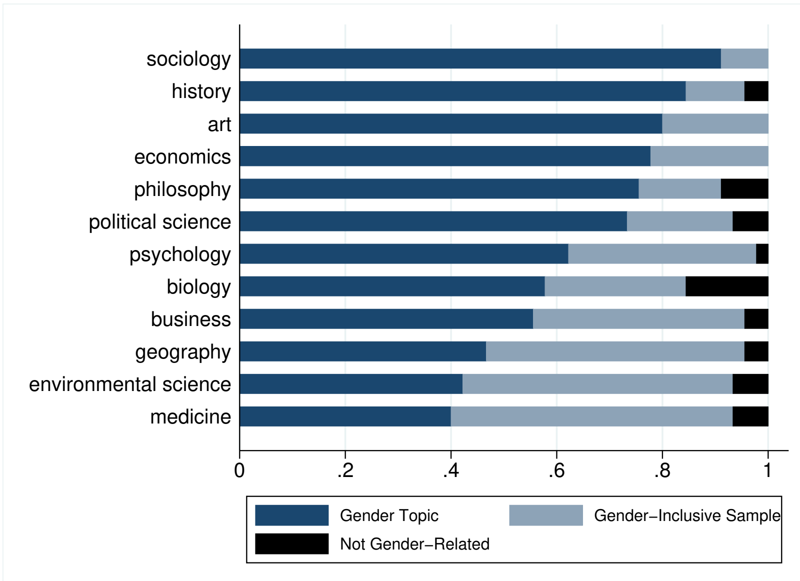


Figure C.4: Audit on False Positives By Field

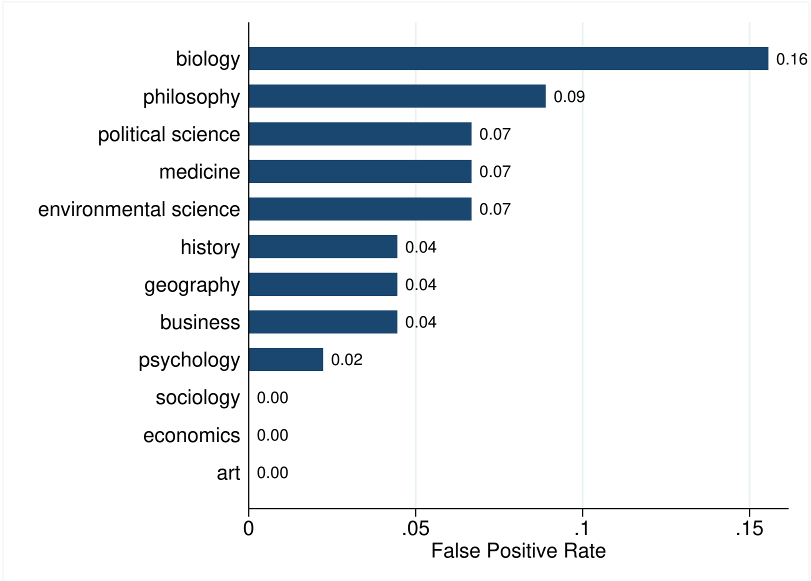
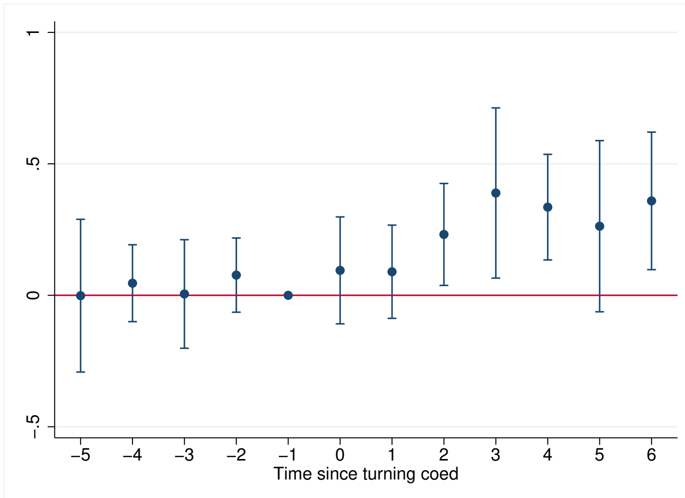


Figure C.5: Effect of Turning Coed on Number of Gender-Related Publications (Dropping Fields with High Number of False Positives)



Notes: Figure C.5 plots the event time coefficients and their 95% confidence intervals from estimating equation (1) for total number of gender-related research publications, dropping the two fields with the highest numbers of false positives (biology and philosophy). The specification is estimated using a conditional fixed effects Poisson model. In the specification, we include school-subfield fixed effects, year fixed effects, and discipline-by-year fixed effects. We also control for total publications, total publications with an abstract, and the average abstract length at the school-subfield. We cluster at the school level.

C.4.1 Machine Learning Classification of Gender-Related Research Types

Using the audited sample of papers as our training set, we apply the same ML Naïve Bayes approach described in C.2 to classify all gender-related papers in our sample as "gender topic" or "gender-inclusive sample". Specifically, for each paper, we use as features of the model the title and the abstract. We preprocess the text by tokenizing, filtering out stop words, remove words that only have length of one, select only nouns and adjectives, and then lemmatize each word. Next, we transform the text of the processed titles combined with abstracts into a matrix of TF-IDF (term frequency-inverse document frequency) features. Each row of the matrix refers to a specific paper title and each column of the matrix represents a possible word in the corpus of titles. The entries of the matrix capture the weighted frequency of each word. Words that appear frequently in the corpus are assigned less weight as they may carry less information than rarer words. We then apply the Naïve Bayes (NB) classifier to this matrix to classify documents into gender-topic or gender-inclusive sample papers. After building the model on the training set of papers, we use it to compute the predicted probability of a paper having a gender topic or a gender-inclusive sample. We assign the paper to that specific category if the predicted probability is higher than 50%.

To evaluate the accuracy of our prediction, we trained the model on a random 20% sample of the training set, and then used the model to predict the rest of the training set. We find that our model accurately identifies 90% of papers with a gender topic. The remaining 10% are false negatives for the 'gender topic' category (i.e., papers with a gender topic that are incorrectly classified as having a gender-inclusive sample).

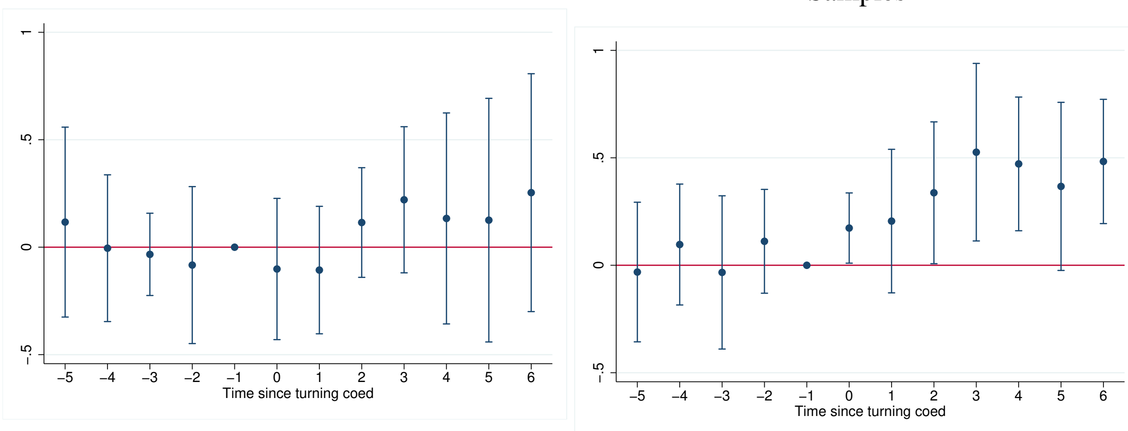
On the other hand, our model can accurately predict only 63% of papers with a gender-inclusive sample. The remaining 37% are false negatives for the 'gender-inclusive' category (i.e., papers with a gender-inclusive sample that are incorrectly classified as having a gender topic).

In Appendix Figure C.6, we explore whether the increase in gender-related research comes mostly from gender topics or gender-inclusive samples. We find that the main results are driven by papers with gender-inclusive samples. This parallels our findings on gender-related titles and gender-related abstracts. Specifically, we find that the increase in gender-related research comes mostly from an increase in papers with gender-related abstracts and as we show in Appendix Figure C.2, gender-related research identified by their abstracts are much more likely to have a gender-inclusive sample, rather than have gender as the main topic of the paper. Nonetheless, we approach these results with caution considering the current accuracy levels of our model. Specifically, the model's accuracy is 90% for papers with a gender topic and 63% for gender-inclusive papers. Although these figures are encouraging, they also suggest that there is a considerable scope for improvement, especially in accurately classifying gender-inclusive papers.

Figure C.6: Effect of Turning Coed on Types of Gender-Related Publications

(a) Number of Papers on Gender Topics

(b) Number of Papers with Gender-Inclusive Samples



Notes: Figure C.6 plots the event time coefficients and their 95% confidence intervals from estimating equation (1) for total number of gender-related research publications classified as gender-related based on topic or having a gender-inclusive sample using a ML algorithm. The specifications are estimated using a conditional fixed effects Poisson model. In the specification, we include school-subfield fixed effects, year fixed effects, and discipline-by-year fixed effects. We also control for total publications, total publications with an abstract, and the average abstract length at the school-subfield. We cluster at the school level.

C.4.2 Examples of Gender-Related Papers

We provide two randomly selected gender-related papers (using our baseline definition) from each of the gender-related fields. We categorize each paper into the following: (i) "Gender Topic": publication is on a gender studies topic, "Sex Differences": gender is not the focus of the research but analysis by sex is described, and "Not gender-related": misclassified paper.

Art

1. "New Women Versus Old Mores A Study Of Women Characters In Ba Jin's Torrents Trilogy" (Category: Gender Topic)

    - First author: Tsung Su
    - Publication year: 1990
    - Abstract: The 1930s, in the history of modern Chinese literature, are what the late eighteenth century is to German literature, a time of great intellectual turmoil and creative

vitality. During the so-called Sturm und Drang, or Storm and Stress period in German literature, literary giants like Goethe, Schiller, Lenz, and others rebelled against conventional artistic and moral standards. During the Chinese version of Storm and Stress in the 1930s, literary greats like Lu Xun, Lao She, Ba Jin, Cao Yu, Mao Dun, and legions of others rebelled against the old language and the old ethics, conventions, superstitions, and beliefs. Previously, in 1919, Chen Duxiu declared in the New Youth: "Because we esteem Mr. Democracy, we are against Confucianism, chastity, old ethics, and old politics; because we esteem Mr. Science, we are against old literature and old national culture."
  - Gender-related definition: Gender-related title, ML Naïve Bayes

2. "Electronic Recording Of Mosquito Activity" (Category: Sex Differences)

  - First author: John A. Powell
  - Publication year: 1966
  - Abstract: Spontaneous locomotor activity of mosquitoes (Aedes aegypti) was tested over twenty-four hour periods using an electronic recording device which gave a permanent time graph of activity. Single mosquitoes were placed on a wire grid with alternate strands connected to the positive and negative poles of an electric circuit. Each time the mosquito moved, the electric current changed and the event was recorded by a pen-writer. The number of peaks per time interval gave the index of activity. Variables which may affect activity include age, physiological state, sex and strain. A distinct activity cycle was evident in both virgin and mated females but not in males; peak activity came in the early evening and activity was lowest in the early afternoon.
  - Gender-related definition: Gender-related abstract

Biology

1. "Fine Structure Of A Marine Proteomyxid And Cytochemical Changes During Encystment" (Category: Not Gender-Related)

  - First author: O. Roger Anderson
  - Publication year: 1979
  - Abstract: A proteomyxid (Biomyxa vagans) isolated from Sargassum sp. was maintained in laboratory culture with a bacterial food source. The life cycle consists of four stages: (1) resting cysts formed during unfavorable growth conditions, (2) a dispersal stage following excystment when active growth resumes, (3) generative growth characterized by large plasmodial cells which give rise to numerous daughter cells, and (4) a recruitment stage in which solitary cells become aggregated during progressively unfavorable growth conditions and eventually produce clusters of resting cysts. No sexual reproduction was observed. The fine structure of active cells shows that they are multinucleated, possess a thin envelope of fibrillar material surrounding the cell, and contain

digestive vacuoles filled with bacteria and detritus. Encysting cells exhibit lipid autophagy as shown by cytochemical staining and biochemical analysis of the lipid content of encysting cells compared to active cells. The cysts have a thickened cell coat, contain smaller nuclei than the active cells, possess fewer and smaller digestive vacuoles, and exhibit less secretory activity at the periphery of the cell. The nutrition and life history of Biomyxa vagans are discussed in relation to its surface-dwelling habit within a pelagic community.

- Gender-related definition: Gender-related abstract

2. "The Effects Of Progesterone On Estrogen Induced Luteinizing Hormone And Follicle Stimulating Hormone Release In The Female Rhesus Monkey" (Category: Gender Topic)

   - First author: F. A. Helmond
   - Publication year: 1980
   - Abstract: The effects of progesterone (P) in midcycle concentrations on the estradiol (E2) -induced gonadotropin release in the rhesus monkey were investigated by implanting Silastic capsules containing either crystalline E2 or P. All experiments were begun on day 3 or 4 of the menstrual cycle and finished 96 h later. In the control cycles E2 capsules (E2 increments to approximately 250 pg/ml) were implanted in all animals. In subsequent cycles E2 capsules were again implanted, but a P capsule was added (P increment to approximately 1.2 ng/ml) 0, 24, 32, and 46 h after the implantation of the E2 capsules (groups I, II, III, and IV, respectively). The time of maximum gonadotropin release in the E2 plus P cycles of all groups was advanced by approximately 12 h compared to their E2 control cycles (P plus P implants) was reduced to 70% of the E2 control means. When the time interval between the E2 and P im...
   - Gender-related definition: Gender-related title, ML Naïve Bayes

Business

1. "Women Still Want Marriage Sex Differences In Lonely Hearts Advertisements" (Category: Gender Topic)

   - First author: Sarah C. Sitton
   - Publication year: 1986
   - Abstract: Personal advertisements from a metropolitan newspaper were analyzed for content and amount of self-disclosure. Men and women disclosed information at the same rate. They also stipulated physical attractiveness, athleticism, and the desire for companionship equally often. Women, however, stipulated a desire for the partner's financial security and for marriage significantly more frequently than men.
   - Gender-related definition: Gender-related abstract, Gender-related title, ML Naïve Bayes

2. "Machiavellianism And The Discount Store Executive" (Category: Sex Differences)

- First author: Martin T. Topol
- Publication year: 1990
- Abstract: This research investigated the Machiavellian orientation of discount store Executives and the relationships between Machiavellianism and job statisfaction and job success. The reported findings are based upon 212 responses to a mail questionnaire sent to a systematic random sample of discount store executives. Major findings of the present study are: [a] discount store executives are no More Machiavellian than other executives; [b] female executives in higher Machiavellian orientation than their male counterparts; [c] executives in higher Level management positions are less Machiavellian than those in lower level Positions; [d] executives who have achieved greater success, as measured by job title or income are more likely to have a lower Machiavellian orientation; and [e] executives who report higher levels of job satisfaction are generally more likely to have a lower Machiavellian orientation.
- Gender-related definition: Gender-related abstract

Economics

1. "Path Analysis Of Familial Resemblance Of Pulmonary Function And Cigarette Smoking" (Category: Sex Differences)

    - First author: Mary Frances Cotch
    - Publication year: 1990
    - Abstract: The techniques of path analysis were utilized to assess the relative importance of genetic factors, personal smoking behavior, and shared environment in the resemblance of pulmonary function among relatives using both cross-sectional and longitudinal data from nuclear families. Data on 1-s forced expiratory volume, FEV1 (adjusted for age, sex, race, height, and ascertainment group) and the number of cigarettes smoked per day were available on 978 individuals in 384 nuclear families residing in the Baltimore metropolitan area. All these individuals were seen twice between 1971 and 1981, with an average of 5 yr between visits. The direct effect of an individual's own smoking explained 10 and 3% of variation in adjusted FEV1 among parents and offspring, respectively. Shared environmental factors influencing personal smoking behavior accounted for 5% of the parent-offspring correlation in adjusted FEV1 and 3% of the sibling correlation in adjusted FEV1 in this sample. Undefined environmental factors that infl...
    - Gender-related definition: Gender-related abstract

2. "Accounting For Changes In The Labor Supply Of Recently Divorced Women" (Category: Gender Topic)

    - First author: William R. Johnson
    - Publication year: 1988

- Abstract: How much of the rise in women's labor supply associated with divorce can be attributed to observable changes in the wife's environment? Such changes include a reduction in nonwage family income, a rise in her after-tax wage rate, changes in the number of children present, and a reduction in husband's hours at home. We use panel data to address this question. When we do not account for individual effects, we find that changes in observables are important, but a residual effect dependent solely on marital status remains. In estimates that do control for individual heterogeneity, observable changes in the wife's environment account for even less of the total shift in labor supply.
- Gender-related definition: Gender-related abstract, Gender-related title

Environmental Studies

1. "Respiratory Effects Of Household Exposures To Tobacco Smoke And Gas Cooking On Nonsmokers" (Category: Sex Differences)

   - First author: Knud J. Helsing
   - Publication year: 1982
   - Abstract: The records of 708 nonsmoking white adult residents of Washington County, MD, who had participated in two of respiratory symptoms were analyzed to evaluate the effects of exposure at home to two potential sources of indoor air pollution: cigarette smoking by other household members, and use of gas as a cooking fuel. After adjustment for the effects of age, sex, socioeconomic level, occupational exposure to dust, and years of residence in household, the presence of one or more smokers in the household was only suggestively associated with a higher frequency of chronic phlegm and impaired ventilatory function defined as FEV1 ¡ 80% predicted. The use for cooking was associated with a significantly increased frequency of chronic cough and a significantly greater percentage with impaired ventilatory function as measured both by FEV1 ¡ 80% predicted and by FEV1/FVC ¡ 70%.
   - Gender-related definition: Gender-related abstract

2. "Pecan Weevil Distribution In Some Texas Soils" (Category: Sex Differences)

   - First author: Marvin K. Harris
   - Publication year: 1975
   - Abstract: Pecan weevils, Curculio caryae (Horn)2, were found deeper in cultivated soils than in undisturbed sites, within the foliage canopy of the tree. No pecan weevils were found in unshaded soil outside of the tree canopy. Male and female weevils were homogenous in their vertical distribution within the soil. The depths at which weevils were found were apparently deeper than necessary to escape inclement weather at the sites studied.
   - Gender-related definition: Gender-related abstract

History

1. "Sally Has Been Sick Pregnancy And Family Limitation Among Virginia Gentry Women 1780 1830" (Category: Gender Topic)

    - First author: Jan Lewis
    - Publication year: 1988
    - Abstract: The extent of family planning practice in the antebellum South of the United States is examined using data on 298 Virginia gentry women born between 1710 and 1849. The data are from letters and diaries and indicate that although fertility remained high a definite trend to lower marital fertility can be established by the 1840s and 1850s. (ANNOTATION)
    - Gender-related definition: Gender-related abstract,Gender-related title, ML Naïve Bayes

2. "Primers For Prudery Sexual Advice To Victorian America" (Category: Gender Topic)

    - First author: Ronald G. Walters
    - Publication year: 1974
    - Abstract: In Primers for Prudery Ronald G. Walters examines the historical and social context as well as the substance of sexual advice manuals in nineteenth-century America. Allowing the authors of these manuals to speak for themselves-with generous excerpts by contemporary authorities on subjects ranging from the virtues of celibacy to the vices of masturbation-Walters offers his readers a complex reading of the Victorian "prudery" referred to in the book's title. Supplementing each of the excerpts with extensive commentary, he places the advice manuals in the larger setting of gender and class issues. First published in 1974, Primers for Prudery now returns to print in a paperback edition with new selections from women's advice to women and a new preface in which Walters discusses changes that have occurred in the scholarship on sexuality since the book's first publication. He also provides an updated bibliographical note.
    - Gender-related definition: Gender-related abstract, Gender-related title, ML Naïve Bayes

Medicine

1. "Differences In Results For Aneurysm Vs Occlusive Disease After Bifurcation Grafts Results Of 100 Elective Grafts" (Category: Sex Differences)

    - First author: M. David Tilson
    - Publication year: 1980
    - Abstract: To compare abdominal aortic surgery for aneurysmal (AAA) vs occlusive (OCC) disease, 50 consecutive cases of elective bifurcation grafts for AAA and 50 consecutive cases for OCC disease were analyzed. The mean age of the AAA patients was a decade greater than the OCC patients, and they had more associated diseases. Only six AAA patients were women, while women predominated in the OCC group.

Only three AAA patients were claudicants and none had rest pain. About one third of the OCC group had distal disease, and 14 had rest pain. Operative mortality was 4% (two deaths in each group). The survival of the grafted AAA patients was almost equal to normal expectancy. There were no late thromboses of grafts in the AAA group, while there were five late failures in the OCC group. The OCC group underwent significantly more frequent reoperative surgery during the follow-up period. The numerous differences in the two population groups apparent in this study provide a basis for questioning the concept that aneurysms are caused by atherosclerosis. (Arch Surg 115:1173-1175, 1980)

- Gender-related definition: Gender-related abstract

2. "Anti Estrogen Effects On Estrogen Accumulation In Brain Cell Nuclei Neurochemical Correlates Of Estrogen Action On Female Sexual Behavior In Guinea Pigs" (Category: Gender Topic)

    - First author: William A. Walker
    - Publication year: 1977
    - Abstract: The presence of estrogen in brain and peripheral target tissues was monitored with respect to the display of sexual behavior in female guinea pigs. Temporal and quantitative aspects of estrogen accumulation in cell nuclei of cerebral cortex, hypothalamic-preoptic areas (H-POA), and pituitary of ovariectomized guinea pigs were determined after s.c. administration of [3 Hestradiol benzoate ([3 HEB) (100 Ci [3 HEB plus 0.8 g unlabeled EB). Nuclear accumulation of estrogen followed the pattern:pituitary¿H-POA¿cortex. Peak nuclear accumulation of estrogen in the pituitary occurred at 20 h after [3 HEB and then levels declined. In the nuclear fraction of H-POA, estrogen accumulation reached a peak by 11 h after [3 HEB injection and remained at peak values 43 h after [3 HEB. Nuclear accumulation of estrogen in the cortex was minimal. The accumulation of estrogen in whole homogenates and cell nuclei of brain and peripheral target tissues was assessed during the display of sexual behavior in EB-progesterone (P)-treated animals. [3 HEB was injected s.c. at 0 h and P (0.5 mg) was administered at 39 h. At the first display of lordosis the animals were killed and estrogen accumulation determined. No effect of P on estrogen retention in cell nuclei or whole homogenates could be detected. Additionally, the effects of the anti-estrogens, enclomiphene (ENC) and CI-628, on estrogen uptake and retention in brain and peripheral target tissues were determined. Using a treatment schedule of ENC known to inhibit EB-induced sexual behavior (4 serial injections of ENC 48 h prior to EB), estrogen accumulation was significantly reduced in whole homogenates of H-POA, pituitary, and uterus both at 2 h and 39 h after [3 HEB injextion. Nuclear accumulation was also suppressed in the pituitary and uterus at both time points while nuclear inhibition of H-POA was apparent only at 39 h. Similar treatment with CI-628, which does not inhibit EB-induced sexual behavior in guinea pigs, also did not inhibit uptake in the H-POA. CI-628 suppressed estrogen accumulation in the pituitary and

uterus by 39 h after [3 HEB. Using a treatment schedule of ENC known to facilitate the priming action of EB for the display of lordosis (2 serial injections of ENC 28 h prior to EB), estrogen accumulation in the H-POA was not affected at either 2 h or 11 h after [3 HEB injection. However, this treatment reduced whole homogenate uptake in the pituitary and uterus (at 11 h) and nuclear accumulation in the pituitary (at 2 and 11 h).

- Gender-related definition: Gender-related abstract, Gender-related title, ML Naïve Bayes

Philosophy

1. "Problems In The Historiography Of Women In The Middle East The Case Of Nineteenth Century Egypt" (Category: Gender Topic)

    - First author: Judith E. Tucker
    - Publication year: 1983
    - Abstract: The study of women in the history of the Middle East has been subject, until recent times, to a benign neglect born of the general focus of scholarship in the field and common misconceptions, shared by historians of other regions as well, about the study of women. First and foremost, the general backwardness of Middle East historiography, widely attested to in periodic surveys of the state of the art, consigned women, along with many other groups and classes in society, to a minor, if not totally insignificant, place in history.1 Concentration on visible political institutions, diplomatic events, and intellectual currents of the high, as opposed to popular, culture effectively wrote all but upper-class males out of the historical process. That Middle East history remained, to a large extent, confined to this rather narrow sphere long after historians of Europe and the Far East had embarked on studies of social and economic history is related to the origins and the orientation of the field itself. As a stepchild of "orientalism," Middle East history bears the imprint of its birth up to the present in its use of sources, its methodology, and its isolation.2 The very richness of written sources, in the form of treatises on science, theology and jurisprudence, historical chronicles, and works in a literary genre, tended to tie students of the Middle East, historians and others, to the written word; the availability and sheer number of these sources worked to discourage active investigation of other types of material, including archeological finds, oral traditions,
    - Gender-related definition: Gender-related abstract, Gender-related title, ML Naïve Bayes

2. "Asceticism And Society In Crisis John Of Ephesus And The Lives Of The Eastern Saints" (Category: Gender Topic)

    - First author: Susan Ashbrook Harvey
    - Publication year: 1990
    - Abstract: John of Ephesus traveled throughout the sixth-century Byzantine world in his role as monk, missionary, writer and church leader. In his major work, "The Lives

of the Eastern Saints", he recorded 58 portraits of monks and nuns he had known, using the literary conventions of hagiography in a strikingly personal way. War, bubonic plague, famine, collective hysteria, and religious persecution were a part of daily life and the background against which asceticism developed an acute meaning for a beleaguered populace. Taking the work of John of Ephesus as her guide, Harvey explores the relationship between asceticism and society in the sixth-century Byzantine East. Concerned above all with the responsibility of the ascetic to lay society, John's writing narrates his experiences in the villages of the Syrian Orient, the deserts of Egypt, and the imperial city of Constantinople. Harvey's work contributes to a new understanding of the social world of the late antique Byzantine East, skillfully examining the character of ascetic practices, the traumatic separation of 'Monophysite' churches, the fluctuating roles of women in Syriac Christianity, and the general contribution of hagiography to the study of history.

- Gender-related definition: Gender-related abstract

Political Science

1. "Civil Liberties And The American Public" (Category: Gender Topic)

   - First author: Hazel Erskine
   - Publication year: 1975
   - Abstract: Important new survey findings show the American public's restrictive approach to the First Amendment rights of people who express deviant views to be moderating over the last two decades. This mellowing is backed up by parallel findings of major liberalizing of the consensus in other areas, notably equality and sexual freedom. Liberalization has been limited in such areas as criminal justice and separation of church and state. Post-McCarthy and post-Watergate developments are credited, along with educational progress, with much of the advance. Reduced value consensus and a growing sense of self-interest in civil liberties seem to have contributed to the trends in support of civil liberties.
   - Gender-related definition: Gender-related abstract

2. "The Supreme Court Family Policy And Alternative Family Lifestyles The Clash Of Interests" (Category: Gender Topic)

   - First author: Patricia Spakes
   - Publication year: 1985
   - Abstract: This article reviews the basis for the judicial system's involvement in the development of national family policy. Major Supreme Court decisions in establishing the rights of the nuclear family, the extended family, foster families, communal families, homosexual couples, and unwed fathers are discussed. The Supreme Court is seen as having established the parameters of a nationally defined family, and the implications of the court's actions for the development of national family policy are considered.

- Gender-related definition: Gender-related abstract

Psychology

1. "Child Sexual Abuse Who Is To Blame" (Category: Gender Topic)

    - First author: Sylvia D. Broussard
    - Publication year: 1988
    - Abstract: This study utilized written descriptions of sexual activity between an adult and a child to examine the impact of victim sex, perpetrator sex, respondent sex, and victim response (i.e., encouraging, passive, resisting) on the attribution of responsibility to the child and the adult perpetrator. A total of 360 college undergraduates (male = 180; female = 180) participated in the study. A main effect for victim response indicated that respondents attributed significantly more responsibility to the child and significantly less responsibility to the perpetrator when the child was described as encouraging the encounter. Children who remained passive were also held significantly more responsible than those who resisted, but there was not a significant difference between resisting and passive conditions in ratings of responsibility to the perpetrator. Several significant interactions affected ratings of responsibility to the perpetrator. The implications of these findings are discussed in terms of the need for educational programs to raise public awareness about the helplessness felt by sexual abuse victims and the needs of male victims in particular. Language: en
    - Gender-related definition: Gender-related abstract, Gender-related title, ML Naïve Bayes

2. "The Relationship Between Sensation Seeking And Delinquency A Longitudinal Analysis" (Category: Sex Differences)

    - First author: Helene Raskin White
    - Publication year: 1985
    - Abstract: A sample of 584 male and female adolescents were studied at two points in time to determine the relationship between self-reported delinquency and sensation seeking. Analyses of variance and covariance were used to test the effect of delinquency status and frequency of minor delinquent activity on sensation seeking at Time 1 and on changes in sensation seeking from Time 1 to Time 2. The results indicated that delinquency and sensation seeking are related in adolescence regardless of sex; those adolescents who are delinquent score significantly higher on the Disinhibition scale. This finding was not obtained for experience seeking. One implication of the findings is that rates of minor delinquency could be lowered by providing high sensation seekers with socially approved opportunities for meeting their sensation-seeking needs.
    - Gender-related definition: Gender-related abstract, ML Naïve Bayes

Sociology

1. "Literature On Pederasty" (Category: Gender Topic)

- First author: G. Parker Rossman
- Publication year: 1973
- Abstract: Abstract As an aspect of research into pederasty, the author suggests that deeper insights into feelings and emotions, and aspects not usually discussed in scientific articles, might be obtained from an examination of biographies and biographical novels, from specifically pederast novels as well as from fiction with pederast incidents. The volume of legal, historical, fictional and psychological material shows that there is much more sexual involvement between men and boys than has been commonly believed.
- Gender-related definition: Gender-related abstract, ML Naïve Bayes

2. "Feminism And Criminology" (Category: Gender Topic)

   - First author: Kathleen Daly
   - Publication year: 1988
   - Abstract: In this essay we sketch core elements of feminist thought and demonstrate their relevance for criminology. After reviewing the early feminist critiques of the discipline and the empirical emphases of the 1970s and early 1980s, we appraise current issues and debates in three areas: building theories of gender and crime, controlling men's violence toward women, and gender equality in the criminal justice system. We invite our colleagues to reflect on the androcentrism of the discipline and to appreciate the promise of feminist inquiry for rethinking problems of crime and justice.
   - Gender-related definition: Gender-related abstract, ML Naïve Bayes

Geography

1. "Clan Mothers and Godmothers: Tlingit Women and Russian Orthodox Christianity, 1840-1940" (Category: Gender Topic)

   - First author: Sergei Kan
   - Publication year: 1996
   - Abstract: Utilizing archival as well as ethnographic field data, this essay traces the history of the Tlingit women's conversion to Russian Orthodox Christianity. Their initial limited exposure to Orthodoxy, which occurred during the Russian-American Company era and was structured by larger trading, military, and socio-economic relationships between the Russians and the Tlingit, is contrasted with their massive conversion to Orthodoxy in the I880s, two decades after the purchase of Alaska by the United States. While examining the various political, social, and religious aspects of that conversion, the essay also explores the native women's own interpretations of Orthodoxy, which has remained the favorite denomination of the more culturally conservative segment of the Tlingit community throughout the twentieth century.
   - Gender-related definition: Gender-related title, gender-related abstract, ML Naïve Bayes

2. “Plant Virtues Are in the Eyes of the Beholders: A Comparison of Known Palm Uses among Indigenous and Folk Communities of Southwestern Amazonia” (Category: Sex Differences)

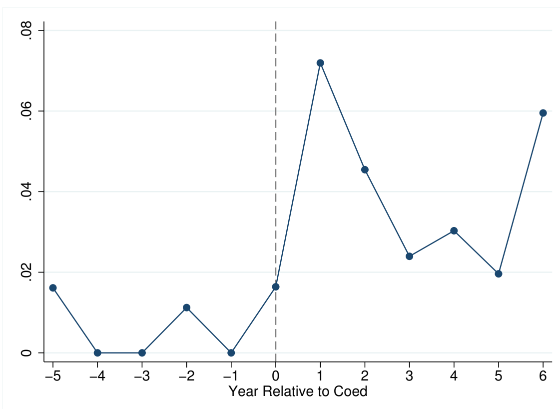
    - First author: Marina Thereza Campos
    - Publication year: 2003
    - Abstract: Despite its central importance to tropical forest conservation, the understanding of patterns in traditional resource use still is incipient. To address this deficiency, we compared known palm uses among two indigenous (Yawanawd and Kaxinawa) and two folk (rubber tapper and ribeirinho) communities in Southwestern Amazonia (Acre, Brazil). We conducted one-hundred-and -forty semi-structured “checklist” interviews about palm uses with male and female adults in the four communities. The knowledge of each community about the uses of the 17 palm species common to all communities was compared by testing for significant differences in the mean number of uses cited per informant and by calculating the Jaccard similarity index of known uses of palm species among the four communities. The following three hypotheses were confirmed: 1) the use of palms differs according to the cultural preferences of each community; 2) indigenous communities know significantly more about palm uses than folk communities; and 3) part of the indigenous knowledge was acquired through contact with Amazonian folk communities.
    - Gender-related definition: Gender-related abstract

C.5 Incumbent Full-Text Analysis

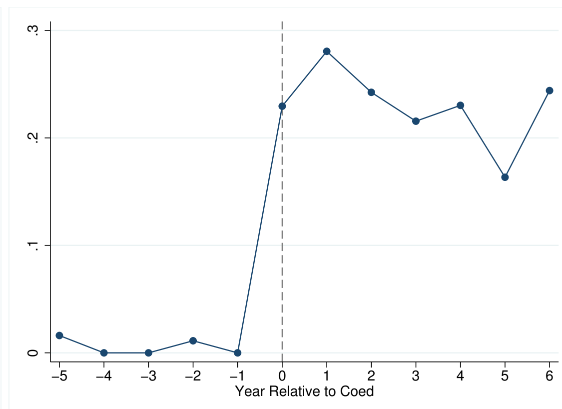
One potential explanation for why we observe an increase in gender-related research post coeducation is that researchers are more likely to highlight gender differences in the abstracts or titles without corresponding changes in the actual text of articles. For example, it may be the case that researchers have always studied gender differences in the text but now are more likely to highlight these results. Because we only observe titles and abstracts, our baseline analysis cannot speak to this hypothesis. To make progress on this question, we randomly sampled 25% of all incumbent researchers who did not publish any gender-related research prior to coeducation ($-5 \leq \tau \leq -1$) but we observe to have started producing gender-related research after coeducation ($0 \leq \tau \leq 5$). We then systematically collected 1,134 publications written by these researchers over the time span $5 \leq \tau \leq 6$ using a combination of sources: Crossref, Elsevier ScienceDirect database, JAMA, and Wiley Online Library (Truffa and Wong, 2024*c*). We then digitized and converted the PDF articles into text. In Figure C.7, we use this sample of publications (restricted to those with abstracts in our data) to plot the likelihood of a paper having a gender-related title or abstract. By construction, we do not observe any papers with a gender-related title or abstract prior to coeducation. We then compare how gender-related language usage evolved in the full text of the articles. Around 40% of papers had mentioned a gender keyword in the full text prior to coeducation without any mention of gender in the abstract or title. However, after coeducation, we see a substantive increase in the extensive margin of using any gender-related words in the full text (around 58% of papers). Moreover, we find a sharp increase in the share of words in full texts that are related to gender, suggesting that there was indeed an increase in attention towards gender-related content after coeducation.

Figure C.7: Descriptive Dynamics for Gender-Related Research Among Incumbent Researchers using Full Texts

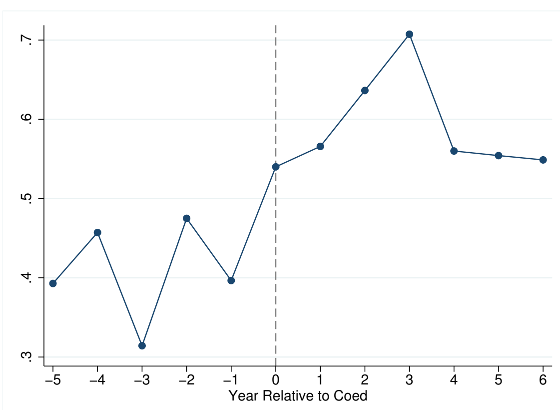
(a) Gender-Related Title



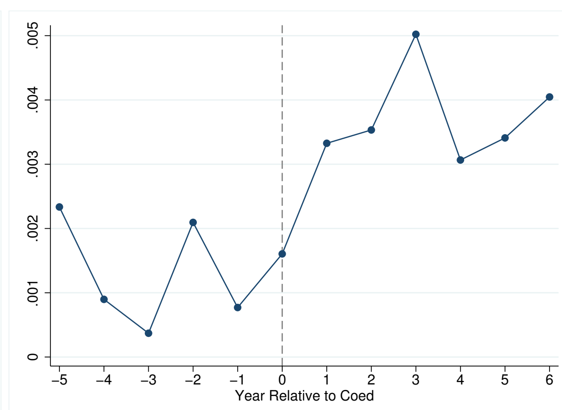
(b) Gender-Related Abstract



(c) Any Gender-Related Word in Full Text



(d) Share of Gender-Related Words in Full Text



Notes: In Figure C.7, we analyze full text publications of a 25% subsample of incumbent researchers who prior to coeducation did not write a gender-related paper (based on titles and abstracts), but wrote one after coeducation. The sample is restricted to 717 publications with abstract information among 156 researchers. Full text articles are collected using a combination of Crossref, Elsevier ScienceDirect, JAMA, and Wiley Online Library.

D Missing Abstracts

In this section, we provide additional evidence on missing abstracts.

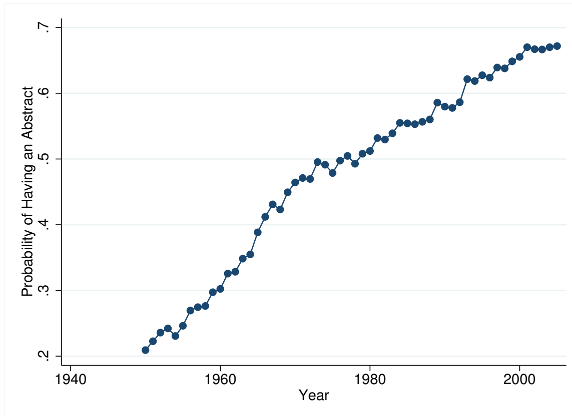
Note that our results are driven by papers with gender-related abstracts and that we observe the abstract for 60% of papers. It is therefore important to understand which papers have abstracts and whether having an abstract is correlated with the reform. Potential confounders could be: (i) the availability or length of abstracts are correlated with the time of coeducation; (ii) after the reform, papers with abstracts may become more prevalent in fields that are more likely to have female-related words; (iii) after the reform, papers become longer, which could also increase the likelihood of including female-related words.

First, we examine the factors that influence the availability of abstracts. Appendix Figure D.1 shows that the abstract availability has increased over time. Appendix Figure D.2 illustrates that the fields with the highest abstract availability are biology, medicine, and business, while sociology, philosophy, and art display the lowest share of abstracts.

Second, Appendix Table D.1 reports the TWFE estimates using total number of papers with abstract, the average abstract length, and the average title length as dependent variables. The results suggest that these outcomes do not change as a result of coeducation. These findings provide supportive evidence that the availability of abstracts is not the primary driver of our results.

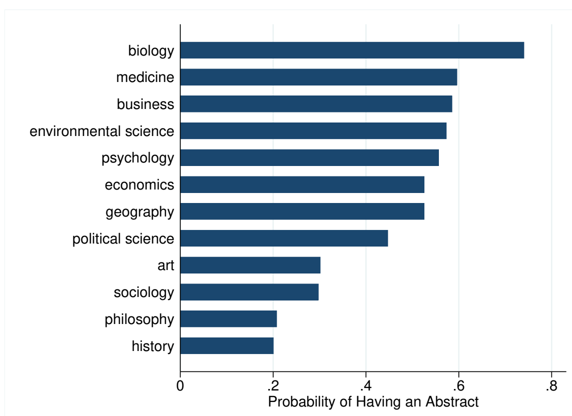
Finally, we replicate our main results on a restricted sample that includes only papers with abstracts. Appendix Figure D.3 show that our results hold when we exclude papers that solely contain title information.

Figure D.1: Availability of Abstracts, 1950–2005



Notes: The figure plots the probability of a paper having an abstract by year of publication in the sample of 76 universities that switched to coeducation between 1960 and 1990. The sample is restricted to papers published in one of the 12 fields in social sciences, humanities, medicine, environmental science, or biology.

Figure D.2: Availability of Abstracts by Field, 1950-2005



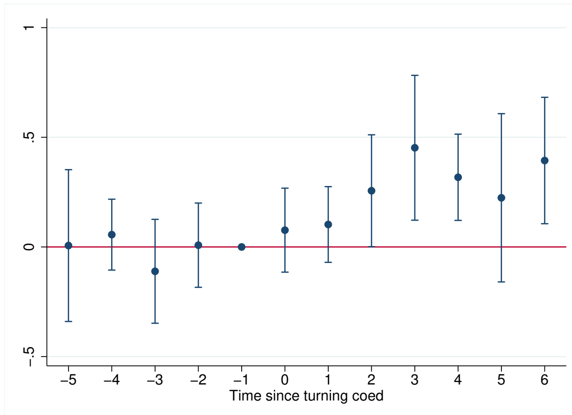
Notes: The figure plots the probability of a paper having an abstract by field in the sample of 76 universities that switched to coeducation between 1960 and 1990. The sample is restricted to papers published between 1950 and 2005.

Table D.1: Effects of Turning Coed on Length and Availability of Abstracts and Titles

	(1) Total Number with Abstracts	(2) Average Abstract Length	(3) Average Title Length
Years -5 to -2	-0.046	0.098	-0.035
	(0.075)	(1.215)	(0.200)
Years 0 to 2	0.077	-1.788	-0.136
	(0.135)	(2.411)	(0.279)
Years 3 to 6	0.176	-2.501	-0.091
	(0.236)	(3.477)	(0.336)
Baseline Mean	5.14	44.07	11.28
Observations	95886	95886	95886
Estimator	OLS	OLS	OLS

Notes: This table reports the average effects from estimating equation (1). The outcome variable is the total number of papers with an abstract. Effect at event time $\tau = -1$ is normalized to 0. Baseline mean is the mean of the outcome variable at $\tau = -1$. The coefficient for Years -5 to -2 is the pre-period average of the coefficients for $\tau = -5$ to $\tau = -2$. The coefficient for Years 0 to 2 is the post-period average of the coefficients for $\tau = 0$, $\tau = 1$, and $\tau = 2$. Similarly, the coefficient for Years 3 to 6 is the average of the coefficients for $\tau = 3$ to $\tau = 6$. The regression includes school-subfield fixed effects, year fixed effects, and discipline-by-year fixed effects. The specification is estimated using a conditional fixed-effect Poisson model. School-subfield groups without variation or less than two observations are dropped from the respective sample in Poisson models. Standard errors in parentheses are clustered at the school level.

Figure D.3: Effect of Turning Coed on Number of Gender-Related Publications (Restricted to Only Papers with Abstracts)



Notes: Figure D.3 plots the event time coefficients and their 95% confidence intervals from estimating equation (1) for total number of gender-related research publications restricted to the sample of papers with both information on titles and abstracts. The specification is estimated using a conditional fixed effects Poisson model. We also control for total publications, total publications with an abstract, and the average abstract length at the school-subfield. In the specification, we include school-subfield fixed effects, year fixed effects, and discipline-by-year fixed effects.

E Student Activism: Evidence from Historical College Student Newspapers

One potential concern is that the timing of coeducation is correlated with changes in campus culture that can affect faculty research prior to coeducation. To shed light on this, we construct direct measures of student activism during the period from 1960 to 1980, using student newspaper archives (Truffa and Wong, 2024*d*). To accomplish this, we first identified digital archives or repositories that housed historical student newspapers for each university in the study. We present the list of universities with searchable digital repositories of their college newspapers in Appendix Table E.1. Next, we conducted keyword searches within these databases, specifically looking for the terms: “womens rights”, “civil rights”, and “war protest” with each term searched individually. Subsequently, we recorded the number of search results per year for each university between 1960 and 1980. This systematic process allowed us to quantify student activism during this period based on the content of the student newspapers. However, it’s worth noting that this search might also capture broader cultural or societal phenomena outside the university, as most student newspapers in our sample frequently reported on major news stories occurring off-campus, including events at other universities.

Appendix Figure E.1 shows the time series for the mentions of key activism themes over the time period across the universities in our sample. In line with historical events, mentions of civil rights spike around the Civil Rights Act of 1964 and remain elevated during the period of the Civil Rights Movement. Mentions of women's rights were relatively stable throughout the period, with a slight increase towards the end of the 1970s. By contrast, we see mentions of war protest peaked in the late 60s and early 70s.

To investigate the potential relationship between the timing of coeducation and mentions of the three key activism themes, while adjusting for the overall yearly trends, we plot the TWFE estimates in Appendix Figure E.2 from running our baseline specification using the student activism measures as outcome variables. The lack of obvious pre-trends suggests that timing of coeducation is unlikely to be correlated with student activism on campus. To further bolster this claim, Appendix Figure E.3 demonstrates that our estimates for the total number of gender-related papers remain largely unchanged when we control for these direct measures of student activism. Specifically, we estimate equation (1) with three additional control variables: number of student newspaper mentions of "womens rights", "civil rights", and "war protest". These estimates are somewhat noisier because we only have student activism measures for 30 universities, compared to the full sample of 76 universities. Consequently, these estimates are based on a significantly smaller sample.

Table E.1: List of Universities with Student Newspapers in Searchable Digital Repositories from 1960–1980

No.	School
1	Boston College
2	Bowdoin College
3	Brown University
4	Case Western Reserve University
5	Colgate University
6	College Of Saint Thomas
7	Columbia University In The City Of New York
8	Fordham University
9	Georgetown University
10	Kenyon College
11	Lafayette College
12	Loyola College
13	Norwich University
14	Princeton University
15	Providence College
16	Randolph-Macon College
17	Rutgers University New Brunswick
18	Saint Joseph's University
19	Santa Clara University
20	St Marys University
21	Texas A&M University
22	Trinity College
23	Union College
24	University Of Notre Dame
25	University Of San Francisco
26	University Of Scranton
27	University Of The South
28	Villanova University
29	Xavier University
30	Yale University

Figure E.1: Trends in Mentions for Key Activism Themes in College Student Newspapers (1960-1980)

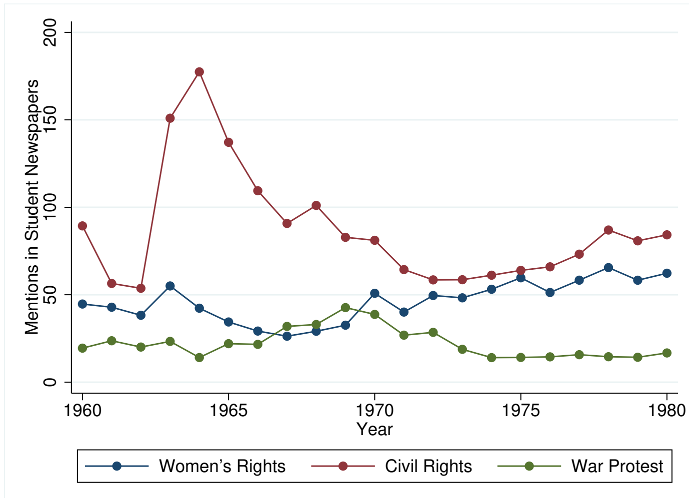
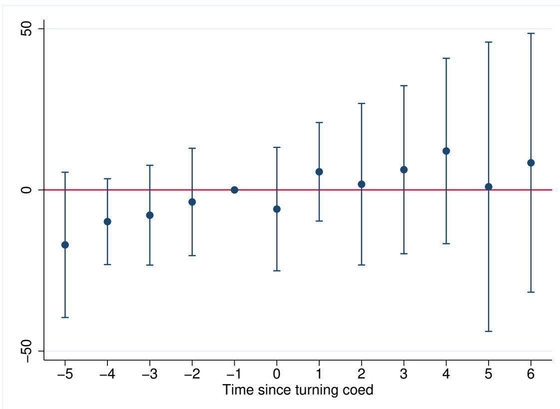
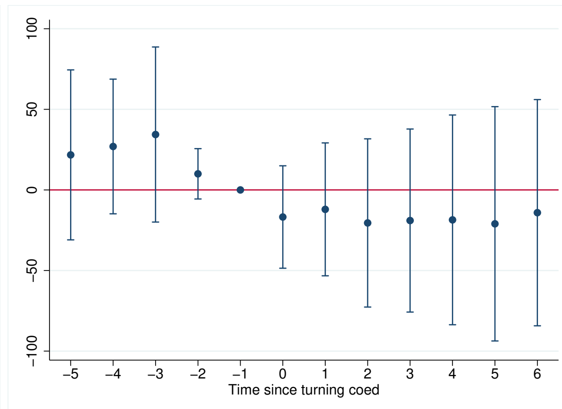


Figure E.2: Effect of Turning Coed on Mentions for Key Activism Themes in College Student Newspapers

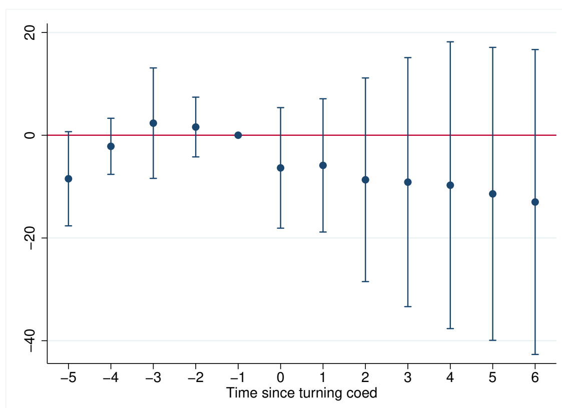
(a) Mentions of “Women’s Rights”



(b) Mentions of “Civil Rights”

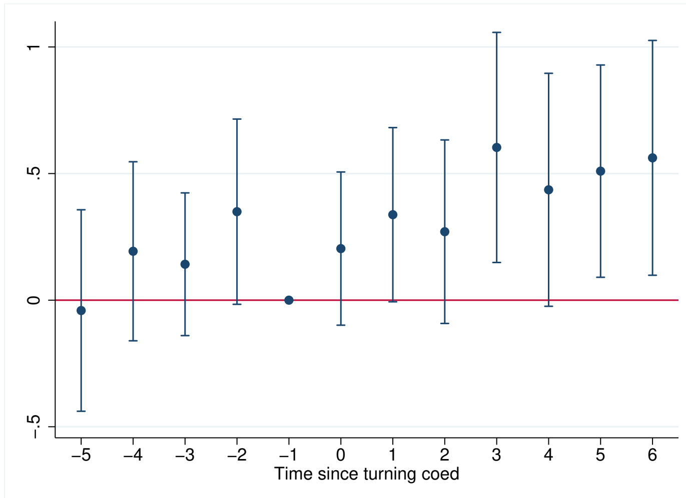


(c) Mentions of “War Protest”



Notes: These figure plot the event time coefficients and their 95% confidence intervals from estimating equation (1) for total mentions of (a) “women’s rights”, (b) “civil rights”, and (c) “war protest”. The specification is estimated using OLS. In the specification, we include school fixed effects and year fixed effects. We cluster at the school level.

Figure E.3: Effect of Turning Coed on Gender-Related Research — Controlling for Measures of Student Activism



Note: Notes: This figure plots the event time coefficients and their 95% confidence intervals from estimating equation (1) for total number of gender-related research while controlling for measures of student activism: total mentions of "women's rights", "civil rights" and "war protest". The specification is estimated using conditional fixed effects Poisson models. In the specification, we include school-subfield fixed effects, year fixed effects, and discipline-by-year fixed effects. We also control for total publications, total publications with an abstract, and the average abstract length at the school-subfield. We cluster at the school level.

F Issues Related to TWFE Models

F.1 Test for Influence of Negative Weights (de Chaisemartin and D'Haultfoeuille 2020)

We implement a test for the potential influence of negative weights proposed by de Chaisemartin and D'Haultfoeuille (2020). We use the Stata package provided by de Chaisemartin and D'Haultfoeuille (2020), "twowayfeweights." We find that at the school level the total sum of the negative weights is equal to only -.11. At the school-subfield level, the sum of the negative weights is -.28. At the school level, 554/1521 ATTs are negative while at the school-subfield level, 21988/67835 ATTs are negative. Because all weights must sum to one, these results indicate that the negative weights may not be especially influential in this setting.

F.2 Sensitivity Analysis to Violations of Parallel Trends Assumption

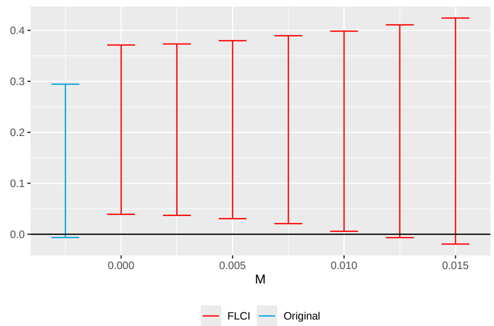
We implement the analysis recommended by Rambachan and Roth (2023) to test the sensitivity of our estimates to potential violations of the parallel trends assumption. Because we are worried about confounding factors from secular trends in gender norms and attitudes towards research about women, which we expect to evolve smoothly over time, we follow the advice outlined by Rambachan and Roth (2023) in Section 2.4.3. of their paper to impose a smoothness restriction. The parameter M in this case "governs the amount by which the slope can change between consecutive periods, and thus bounds the discrete analogue of the second derivative" (p. 2564). $M = 0$ is the special case where the difference in trends is exactly linear. We show sensitivity of our results to this restriction

Appendix Figure F.1 compares the the average effect for $0 \leq \tau \leq 2$ and $3 \leq \tau \leq 6$ against those obtained after allowing for per-period deviations from a linear trend up to an arbitrary amount, M. Appendix Figure F.2 presents the analogous version for the author-level analysis described in Section 6.3.2 where we restricted the sample to incumbent researchers and included researcher fixed effects. Appendix Figures F.3 and F.4 show the results for male and female researchers, respectively. From the figures, we can infer that the breakdown value for the baseline set of results is 0.010 (Figure F.1). This means we can reject a null effect if the linear extrapolation across consecutive periods in the pre-period is off by less than 0.01. Since we are utilizing a Poisson model, this implies a change in the slope of the growth rate of $e^{(0.01)} - 1$, or 1%, between consecutive periods.

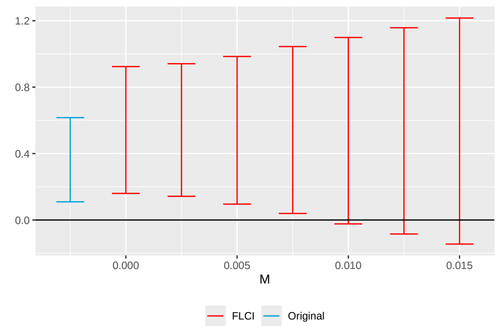
The breakdown value for incumbent researchers (both overall and for male researchers) is approximately 0.015 for the average effect in $3 \leq \tau \leq 6$. In contrast, the breakdown value for female incumbent researchers is 0. As a result, we cannot reject a null effect for female incumbent researchers.

Figure F.1: Sensitivity Analysis for Baseline Specification

(a) $0 \leq \tau \leq 2$



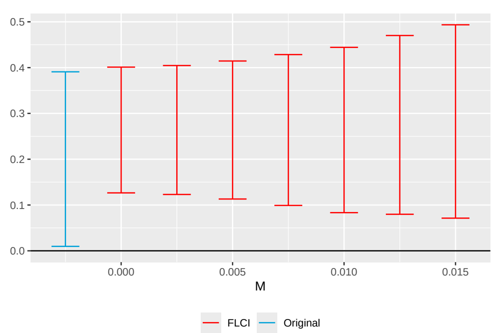
(b) $3 \leq \tau \leq 6$



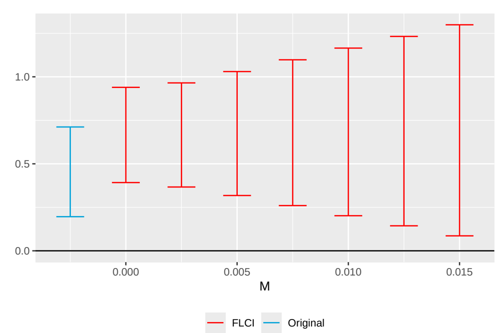
Notes: Figure F.1 shows the sensitivity analysis of estimates for total gender-related papers for the average effect for $0 \leq \tau \leq 2$ and $3 \leq \tau \leq 6$. "Original" is the 95% confidence intervals from our baseline estimates using the Poisson model. "FLCI" are the 95% confidence intervals when allowing for per-period violations of parallel trends of up to M, where M is the largest allowable change in slope of an underlying linear trend between two consecutive periods. Standard errors are clustered at the school level. Plots are generated using the "HonestDID" package provided by Rambachan and Roth (2023).

Figure F.2: Sensitivity Analysis: Incumbent Researchers

(a) $0 \leq \tau \leq 2$



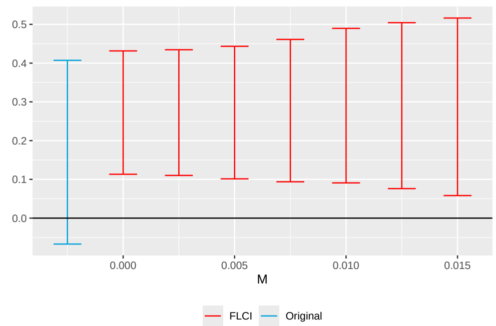
(b) $3 \leq \tau \leq 6$



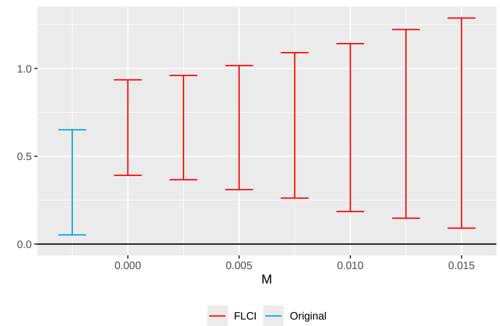
Notes: Figure F.2 shows the sensitivity analysis of estimates for total gender-related papers by incumbent researchers for the average effect for $0 \leq \tau \leq 2$ and $3 \leq \tau \leq 6$. "Original" is the 95% confidence intervals from our baseline estimates using the linear model. "FLCI" are the 95% confidence intervals when allowing for per-period violations of parallel trends of up to M, where M is the largest allowable change in slope of an underlying linear trend between two consecutive periods. Standard errors are clustered at the school level. Plots are generated using the "HonestDID" package provided by Rambachan and Roth (2023).

Figure F.3: Sensitivity Analysis: Incumbent Researchers - Males

(a) $0 \leq \tau \leq 2$



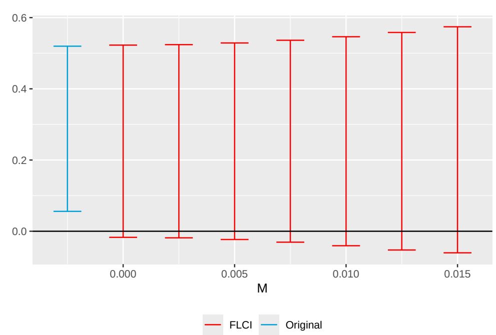
(b) $3 \leq \tau \leq 6$



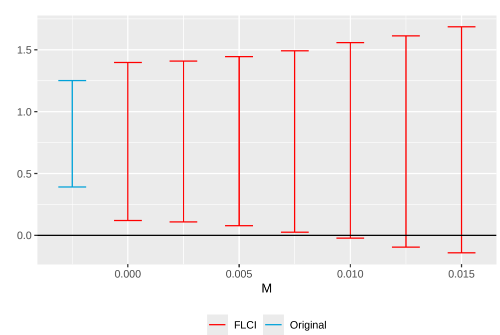
Notes: Figure F.3 shows the sensitivity analysis of estimates for total gender-related papers by male incumbent researchers for the average effect for $0 \leq \tau \leq 2$ and $3 \leq \tau \leq 6$. "Original" is the 95% confidence intervals from our baseline estimates using the linear model. "FLCI" are the 95% confidence intervals when allowing for per-period violations of parallel trends of up to M, where M is the largest allowable change in slope of an underlying linear trend between two consecutive periods. Standard errors are clustered at the school level. Plots are generated using the "HonestDID" package provided by Rambachan and Roth (2023).

Figure F.4: Sensitivity Analysis: Incumbent Researchers - Females

(a) $0 \leq \tau \leq 2$



(b) $3 \leq \tau \leq 6$



Notes: Figure F.4 shows the sensitivity analysis of estimates for total gender-related papers by female incumbent researchers for the average effect for $0 \leq \tau \leq 2$ and $3 \leq \tau \leq 6$. "Original" is the 95% confidence intervals from our baseline estimates using the linear model. "FLCI" are the 95% confidence intervals when allowing for per-period violations of parallel trends of up to M, where M is the largest allowable change in slope of an underlying linear trend between two consecutive periods. Standard errors are clustered at the school level. Plots are generated using the "HonestDID" package provided by Rambachan and Roth (2023).

F.3 Heterogeneous Treatment Effects in Poisson Models: Monte-Carlo Simulations

In this section, we investigate whether heterogeneous treatment effects can lead to biased estimates of the true relative time coefficients in a conditional fixed effects Poisson model. To do so, we construct a simulated panel dataset with one outcome variable that comes from a Poisson process and one with from a linear process under the assumption of homoskedastic, serially uncorrelated error terms. We assume heterogeneous treatment effects that depend on the calendar time, which implies that treatment effects would also depend on cohort, violating our Assumption 3.

Following the procedure described in Borusyak, Jaravel and Spiess (2021), we create a panel of $I = 300$ units, observed for $\tau = 15$ periods each. In this section, we will denote calendar time as t, the treatment date as E_i, and relative time as $K_{it} = t - Ei$. Total number of observations is 4,500. We uniformly assign treatment dates, for each unit i, between $t = 10$ and $\tau = 16$. Units with $E_i = 16$ are never treated in the sample. Treatment effects depend on calendar time and assumed to be $\tau_{it} = t - 12.5$. We assume that Assumptions 1 (parallel trends) and 2 (no anticipation effects) hold, such that the treatment effects for the pre-periods are zero ($\tau_{it} = 0$ for all $t < E_i$). We model the linear outcome Y as the following:

$$Y_{it} = \alpha_i + \beta_t + \sum_{h \neq -1} \tau_h 1[K_{it} = h] + \epsilon_{it} \tag{1}$$

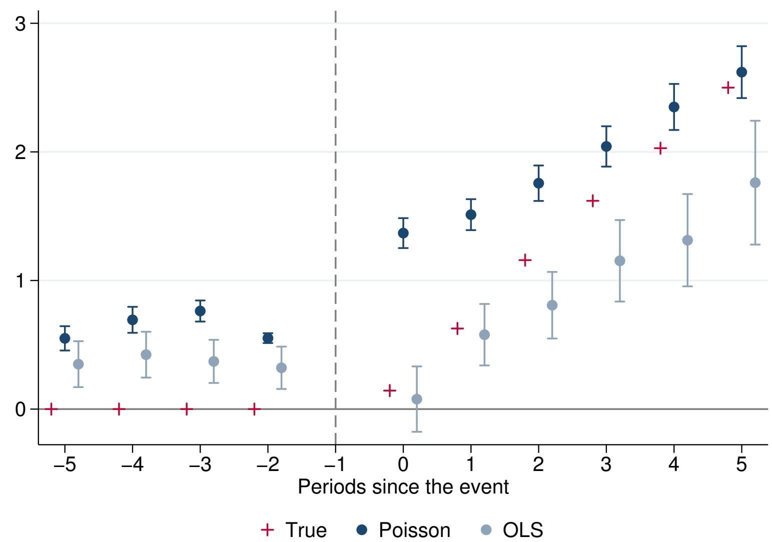
where α_i is the unit fixed effect and β_t is the time fixed effect. Analogously, the Poisson outcome Y^p is modeled as:

$$\begin{aligned} \mu_{it} &= \exp(\alpha_i + \beta_t + \sum_{h \neq -1} \tau_h 1[K_{it} = h]) \\ Y^p_{it} &\sim Poisson(\mu_{it}) \end{aligned} \tag{2}$$

In our simulation, we set the fixed effects to $\alpha_i = \ln(i)$, where i is the unit number, and $\beta_t = 0.3t$. We assume homoskedastic errors and mutually independent errors, where $\epsilon_{it} \sim N(0, 1)$. “Poisson errors” are drawn from using a Poisson distribution with mean μ_{it} as described in (2). The true ATTs τ_h is given by the mean of τ_{it} observed in the data at each relative time horizon. Note by construction, if unbiased, the estimated parameters from the OLS and Poisson models should be the same.

In Appendix Figure F.5, we present the results of the simulation using estimates from the simulated panel. The figure highlights that both the linear model and the Poisson model are biased in the presence of heterogeneous treatment effects. Both models would indicate violations of the parallel trends and no anticipation assumptions in the pre-period. This suggests that the problems shown for the two-way fixed effects model can generalize to the Poisson case.

Figure F.5: Simulated Event Study Coefficients with Heterogeneous Treatment Effects



Notes: This figure plots simulated event study coefficients with heterogeneous treatment effects and their 95% confidence intervals. "True" represents the actual relative-time treatment effect. The figure highlights that both the linear model and the Poisson model can be biased in the presence of heterogeneous treatment effects.

F.4 Alternative Estimators

F.4.1 Interaction-Weighted Estimator

We provide evidence for the validity of our estimates by using an alternative estimator, "interaction-weighted estimator," proposed by Sun and Abraham (2020) that is robust to heterogeneous treatment effects. The interaction-weighted estimator is a regression-based estimator that provides a weighted average of the treatment effects in a way that's more interpretable than the estimates from a standard two-way fixed effects estimator (Sun and Abraham, 2020). Specifically, each event time coefficient from this estimation is a weighted average of the cohort-specific ATT, where the weights are given by the share of cohorts that experienced at least t periods relative to treatment and normalized by the total event time periods we are estimating.

The interaction-weighted estimator is a regression-based estimator that provides a weighted average of the treatment effects in a way that's more interpretable than the estimates from a standard two-way fixed effects estimator (Sun and Abraham, 2020). Specifically, each event time coefficient from this estimation is a weighted average of the cohort-specific ATT, where the weights are given by the share of cohorts that experienced at least t periods relative to treatment and normalized by the total event time periods we are estimating.

Formally, the event time coefficient for a given relative time period, $t \in g$ is given by

$$\nu_g = \frac{1}{|g|} \sum_{t \in g} \sum_{e} CATT_{e,t} Pr\{E_s = e | E_i \in [-t, T-t]\}$$

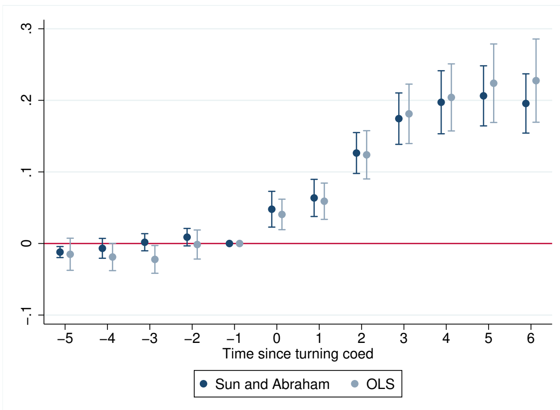
where $CATT_{e,t}$ is the cohort ATT, defined as $CATT_{e,t} = E[Y_{s,e+t} - Y(0)_{s,e+t} | E_s = e]$. E_s is the year of turning coed for a specific school s. t is the relative year. $Y(0)$ is the potential outcome of school s if it were not treated. Note that under the treatment effects homogeneity assumption, the cohort-specific ATT are the same for all cohorts so the estimates would be very similar to those estimated in a two-way fixed effects model.

The interaction-weighted estimator is implemented in three steps. First, cohort ATTs are computed by estimating a two-way fixed effects model that interacts with the event time dummies with cohort indicators. Because there are no never-treated units, we omit the latest-treated cohort (i.e., those that switched to coeducation in 1985) and estimate this model using observations prior to 1985. Second, the weights, $Pr\{E_s = e | E_i \in [-t, T-t]\}$, are estimated by using the sample shares in the data. Finally, the interaction-weighted estimator is formed. Sun and Abraham (2020) show in their paper that this estimator is consistent under the parallel trends and no anticipation assumptions.

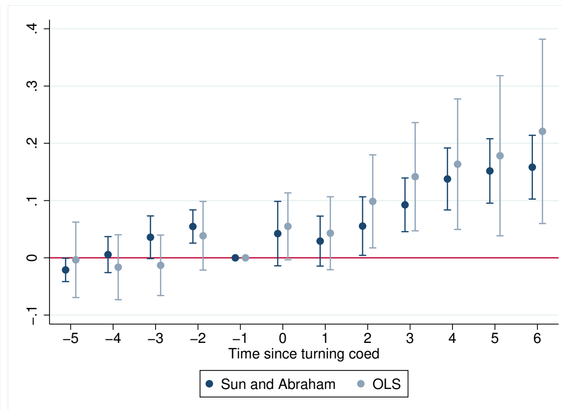
Appendix Figure F.6 compare the coefficients estimated for the outcomes female share of bachelor's degrees awarded, log bachelor's degrees awarded and total gender-related papers. Note that we show the Poisson and OLS estimates for the total number of gender-related papers. For all outcomes, we find a very similar and consistent pattern with the results using the Sun and Abraham (2020) method. The consistent results across the different outcomes provide support for our identification strategy.

Figure F.6: Robustness to Heterogeneous Treatment Effects: Interaction-Weighted Estimation (Sun and Abraham, 2020)

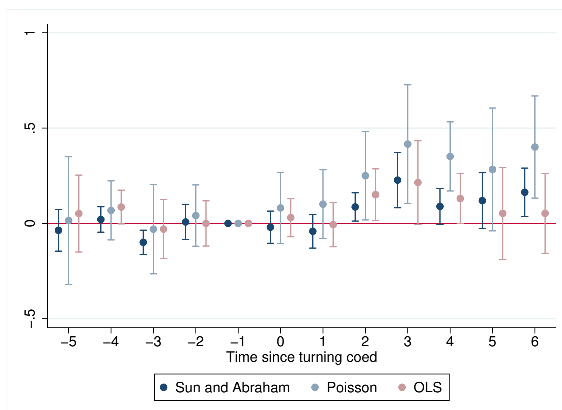
(a) Female Bachelor's Degrees Share



(b) Log Bachelor's Degrees Awarded



(c) Total Gender-Related Papers



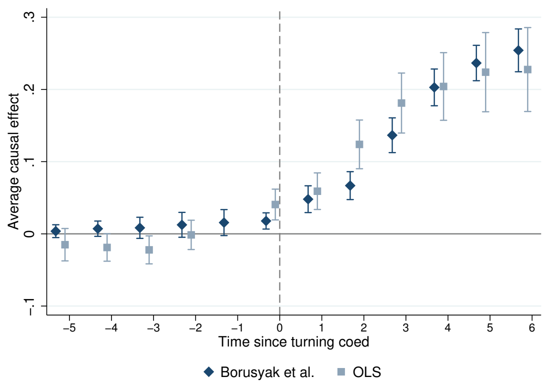
Notes: These figures plot the event time coefficients and their 95% confidence intervals from estimating equation (1) using alternative estimation strategies. The outcome variables are female bachelor's degrees share and log bachelor's degrees awarded. "Sun and Abraham" refers to using the interaction-weighted (IW) estimator proposed by Sun and Abraham (2020). Figures F.6a and F.6b compares the baseline estimates using OLS with the IW estimator. These are estimated at the school level and include school fixed effects, and year fixed effects. Figure F.6c compares the baseline estimates for total gender-related papers estimated using a conditional fixed effects Poisson model with OLS and the IW estimator. We bin together $\tau \leq -15$ and $\tau \geq 15$ in order to estimate the standard errors using the IW estimator due to few observations in the distant relative time periods. Note that for the IW estimator, we use only observations up to 1985, when the last school switched to coeducation and use the last school as the control group. This estimation is at the school-subfield level and we include school-subfield fixed effects, year fixed effects, and discipline-by-year fixed effects. We cluster at the school level.

F.4.2 Borusyak et al. (2021) Estimator

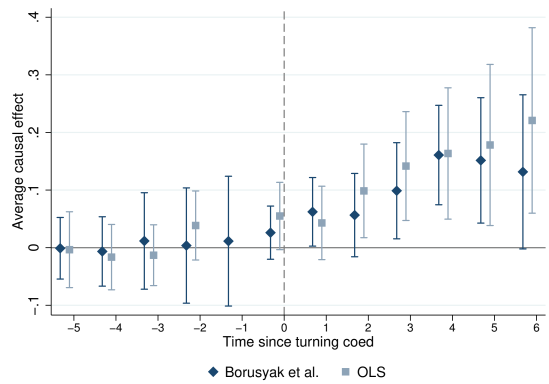
In this section, we provide robustness of our results to using the alternative estimator proposed by Borusyak, Jaravel and Spiess (2021).

Figure F.7: Robustness to Heterogeneous Treatment Effects: (Borusyak, Jaravel and Spiess, 2021) Estimator

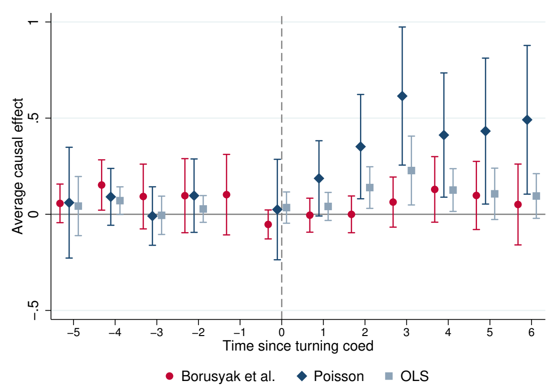
(a) Female Bachelor's Degrees Share



(b) Log Bachelor's Degrees Awarded



(c) Total Gender-Related Papers



Notes: These figures plot the event time coefficients and their 95% confidence intervals from estimating equation (1) using alternative estimation strategies. The outcome variables are female bachelor's degrees share, log bachelor's degrees awarded and total gender-related papers. Figures F.7a and F.7b compare the baseline estimates using OLS with the Borusyak, Jaravel and Spiess (2021) estimator. These are estimated at the school level and include school fixed effects, and year fixed effects. Figure F.7c compares the baseline estimates for total gender-related papers estimated using a conditional fixed effects Poisson model with the Borusyak, Jaravel and Spiess (2021) estimator. For this outcome, as opposed to the main specification, we restrict to $-10 \leq \tau \leq 10$ because the Borusyak, Jaravel and Spiess (2021) compares post-treatment outcomes to the average of all pre-treatment outcomes and our sample is not balanced when we use the full sample. This estimation is at the school-subfield level and we include school-subfield fixed effects, year fixed effects, and discipline-by-year fixed effects. We cluster at the school level for all specifications.

F.5 Using Alternative Control Universities

To address the concern that event study estimates are more likely to be biased without a pure control group, we show that our results are robust to using four alternative groups of universities as a pure control group. In Figures 4c, 4d, 4e, and 4f, we plot in dark blue the baseline estimates using the main specification and in light blue the alternative estimates when we use different groups of schools as a control group.

First, we use universities that opened as coeducational prior to 1940 as an additional control group (Figure 4c). Because these schools never switched, we assigned these universities to event time -1 so that they will contribute to the estimate of the year fixed effects, following the practices recommended by (Goodman-Bacon, 2019).

Second, we implement Propensity Score Matching (PSM) to identify for each treated university, the nearest neighbor among all schools that opened as coed prior to 1940 based on Carnegie Classification, Barron's 2009 Competitiveness Ranking[8], region, religion, log total publications and log total citations. Total publications and total citations are cumulative totals for the university as of 2018. We perform 1-to-1 matching without replacement in descending order and include other control universities with identical (tied) pscores. The logit estimation of the propensity score is reported in Appendix Table F.1. All matched control universities are assigned to event time -1 for all periods. We then estimate the baseline equation using the sample of matched treated and control universities. The estimates are plotted in Figure 4d.

Finally, we use universities that remain either male-only (see Appendix Table F.2) or female-only (Appendix Table F.3 as an additional control group. We assign the single-sex universities to event time -1. The estimates are plotted in Figures 4e and 4f.

Across all sets of alternative control universities, we find very similar patterns in the effect of coeducation on gender-related research as in the baseline specification.

[8] Barron's Educational Series (2009).

Table F.1: Propensity Score Estimation

	(1) Treated
Carnegie Classification	
Doctoral or Research Universities	-2.651
	(1.615)
Masters Colleges or Universities	-1.553
	(1.630)
Baccalaureate Colleges	0.234
	(1.358)
Barron's 2009 Ranking	
Most Competitive	3.149
	(0.952)
Highly Competitive	2.314
	(0.906)
Very Competitive	-0.330
	(1.029)
Region	
Northeast	3.314
	(0.906)
Midwest	0.720
	(0.945)
South	2.616
	(0.918)
Religion	
Non-sectarian	0.531
	(0.655)
Catholic	8.149
	(1.400)
Log Total Publications	-0.0608
	(0.920)
Log Total Citations	0.445
	(0.748)
Constant	-9.666
	(2.489)
Observations	315

Notes: This table reports the logit estimates from regressing a a treated dummy on school characteristics. Untreated universities are universities that opened as coeducational before 1940. Total publications and total citations are cumulative totals for the university in the MAG database as of 2018.

Table F.2: List of Male-Only Schools that Never Turned Coed

	School
1	Hampden-Sydney College
2	Morehouse College
3	Wabash College

Notes: This table provides the list of male-only schools that never turned coed as of March 2023. Data from the Coeducation College Database was compiled and generously provided by Goldin and Katz (2011). Compared to the database, University of Arkansas at Little Rock was not included in our analysis because it is now a coeducational university.

Table F.3: List of Female-Only Schools that Never Turned Coed

	School
1	Agnes Scott College
2	Alverno College
3	Barnard College
4	Brenau College
5	Bryn Mawr College
6	Cedar Crest College
7	College Of Saint Catherine-Saint Catherine Campus
8	Hollins University
9	Meredith College
10	Mills College
11	Mount Holyoke College
12	Mount Mary College
13	Saint Mary's College
14	Salem College
15	Scripps College
16	Simmons College
17	Smith College
18	Spelman College
19	Stephens College
20	Sweet Briar College
21	Trinity College
22	Wellesley College
23	Wesleyan College

Notes: This table provides the list of female-only schools that never turned coed as of March 2023. Data from the Coeducation College Database was compiled and generously provided by Goldin and Katz (2011). Compared to the database, the following schools are not included in our analysis because they have switched to coeducational: Mary Baldwin College, Caldwell University, Hood College, Russell Sage College, Marymount Manhattan College, Benedictine College, Carlow University, Bennett College, Texas Wesleyan University, Texas Woman's University, Molloy College.

G Effects of Turning Coed on Student Body: Heterogeneity by Major

Because female students have different preferences over different fields of study, the arrival of female students also had implications on the gender composition and student body size of departments. In Appendix Table G.1, we report the average effects for female share of bachelor's degrees awarded from estimating equation (1) for each field of study separately.

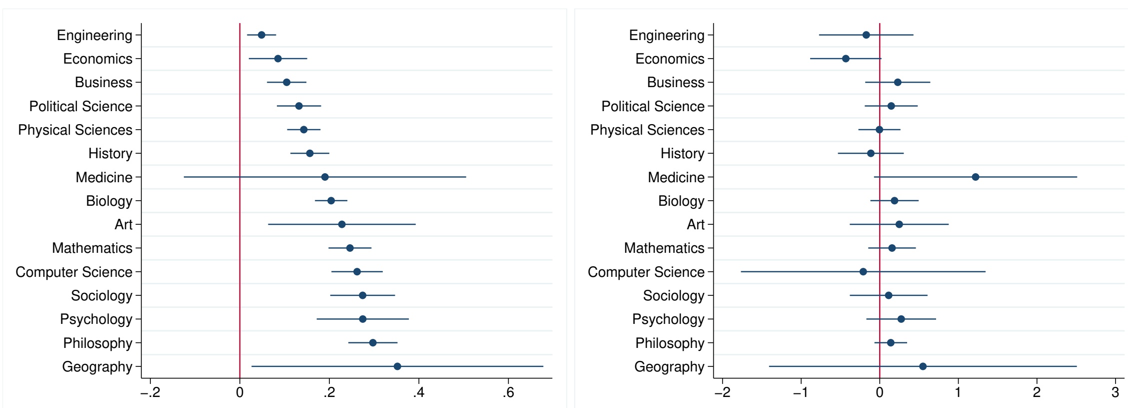
The corresponding causal effects for years 3 to 6 are plotted in Appendix Figure G.1a. We report the analogous results for log bachelor's degrees awarded by field in Appendix Table G.2 and Appendix Figure G.1b.

We find an increase in the share of female students across all fields. The fields, geography, philosophy, psychology and sociology experienced the largest increase in gender diversity among its students.[9] By contrast, we do not find a substantial increase in department sizes. This suggests that some male students may have shifted out of the departments with an increase in female share of bachelor's degrees. In a recent paper, Calkins et al. (2020) show that women in female-only universities that transitioned to coeducation were more likely to shift out of traditionally male-dominated majors. It is beyond the scope of this paper to explore how the arrival of female students influenced the major choices of the male students, but it would be an interesting avenue to explore for future research.

Figure G.1: Effect of Turning Coed on Bachelor's Degrees Awarded by Field

(a) Female Share of Bachelor's Degrees

(b) Log Bachelor's Degrees Awarded



Notes: These figures plot average effects for years 3 to 6 and their 95% confidence intervals from estimating a modified version of equation (1) in which we interact the event time dummies with a categorical variable for each field of study. The outcome variables are the female share of bachelor's degrees awarded and log bachelor's degrees awarded. All specifications are estimated using OLS. In the specifications, we include school fixed effects and year fixed effects. We cluster at the school level.

[9]Interestingly, we also observe a significant increase in computer science. During this period, women's share of computer science degrees was rising rapidly. See `https://www.npr.org/sections/money/2014/10/21/357629765/when-women-stopped-coding`.

Table G.1: Effect of Turning Coed on Female Bachelor's Degrees Share by Field

	Years 0-2	Years 3-6
Physical Sciences	0.041	0.143
	(0.012)	(0.019)
Engineering	0.006	0.049
	(0.006)	(0.017)
Philosophy	0.116	0.297
	(0.016)	(0.028)
Art	0.101	0.228
	(0.059)	(0.084)
Sociology	0.106	0.274
	(0.022)	(0.037)
Business	0.020	0.105
	(0.009)	(0.022)
Psychology	0.095	0.275
	(0.031)	(0.053)
Economics	0.015	0.085
	(0.019)	(0.033)
Political Science	0.041	0.132
	(0.015)	(0.025)
Geography	0.164	0.352
	(0.102)	(0.166)
Mathematics	0.087	0.246
	(0.017)	(0.024)
Computer Science	0.124	0.262
	(0.034)	(0.029)
Medicine	0.017	0.190
	(0.089)	(0.161)
Biology	0.073	0.204
	(0.011)	(0.018)
History	0.054	0.156
	(0.015)	(0.022)

Notes: This table reports the implied average effects for each field of study from estimating a modified version of equation (1) in which we interacted each event time dummy with a categorical variable for the field. The outcome variable is the share of female bachelor's degrees awarded. The estimates for Years 0 to 2 is the post-period average of the coefficients for $\tau = 0$, $\tau = 1$, and $\tau = 2$. Similarly, the coefficient for Years 3 to 6 is the average of the coefficients for $\tau = 3$ to $\tau = 6$. The specification is estimated using OLS and includes school fixed effects and year fixed effects. Standard errors in parentheses are clustered at the school level.

Table G.2: Effect of Turning Coed on Log Bachelor's Degrees Awarded by Field

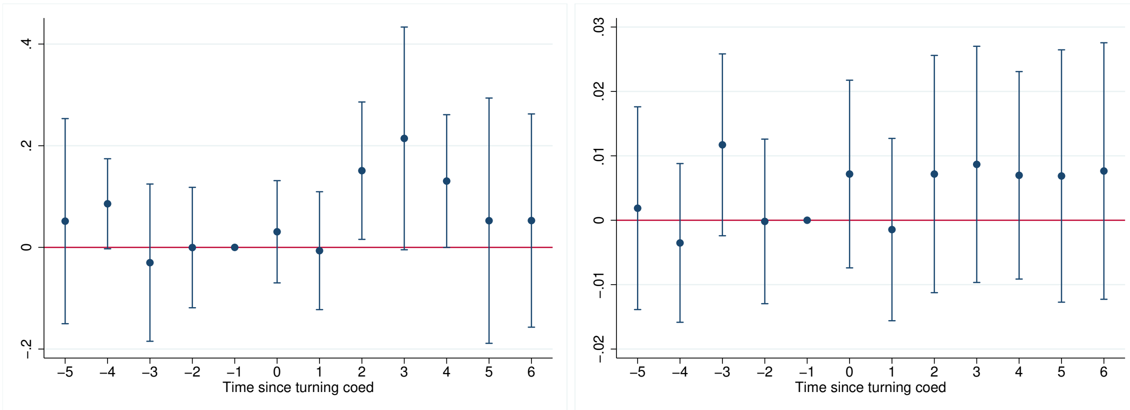
	Years 0-2	Years 3-6
Physical Sciences	-0.054	-0.004
	(0.095)	(0.136)
Engineering	-0.068	-0.172
	(0.152)	(0.307)
Philosophy	0.050	0.140
	(0.056)	(0.106)
Art	0.154	0.248
	(0.184)	(0.321)
Sociology	-0.030	0.114
	(0.136)	(0.252)
Business	0.060	0.229
	(0.100)	(0.211)
Psychology	0.106	0.273
	(0.117)	(0.226)
Economics	-0.267	-0.431
	(0.109)	(0.232)
Political Science	0.092	0.146
	(0.096)	(0.172)
Geography	0.232	0.550
	(0.621)	(0.999)
Mathematics	0.106	0.157
	(0.092)	(0.155)
Computer Science	0.204	-0.210
	(0.626)	(0.794)
Medicine	0.669	1.219
	(0.355)	(0.660)
Biology	0.045	0.188
	(0.075)	(0.157)
History	-0.059	-0.113
	(0.102)	(0.214)

Notes: This table reports the implied average effects for each field of study from estimating a modified version of equation (1) in which we interacted each event time dummy with a categorical variable for the field. The outcome variable is log total bachelor's degrees awarded. The estimates for Years 0 to 2 is the post-period average of the coefficients for $\tau = 0$, $\tau = 1$, and $\tau = 2$. Similarly, the coefficient for Years 3 to 6 is the average of the coefficients for $\tau = 3$ to $\tau = 6$. The specification is estimated using OLS and includes school fixed effects and year fixed effects. Standard errors in parentheses are clustered at the school level.

H OLS and Negative Binomial

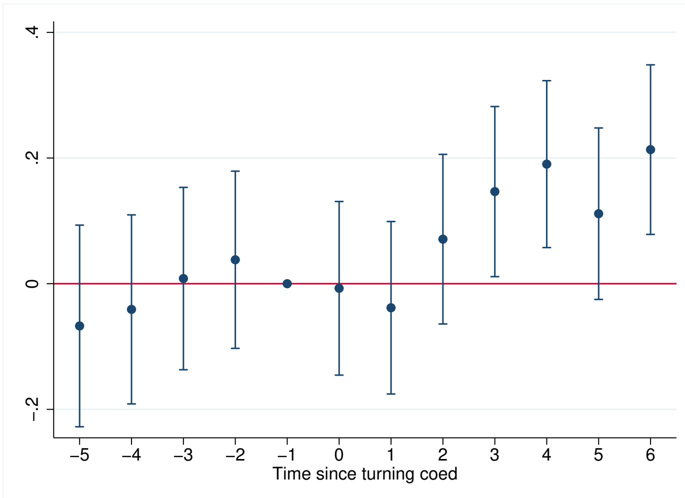
Figure H.1: Effect of Turning Coed on Gender-Related Publications (OLS)

(a) Number of Gender-Related Papers (b) Share of Papers Related to Gender



Notes: Figures H.1a and H.1b plot the event time coefficients and their 95% confidence intervals from estimating equation (1) for total number of gender-related research publications and share of publications related to gender, respectively. The specifications are estimated using OLS. We include school-subfield fixed effects and discipline-by-year fixed effects. We also control for total publications, total publications with an abstract, and the average abstract length at the school-subfield.

Figure H.2: Effect of Turning Coed on Number of Gender-Related Publications (Negative Binomial)



Notes: Figure H.2 plots the event time coefficients and their 95% confidence intervals from estimating equation (1) for total number of gender-related research publications. The specification is estimated using a conditional fixed effects negative binomial model. In the specification, we include school-subfield fixed effects and year fixed effects. The model however does not converge with discipline-by-year fixed effects or with additional control variables, such as total number of papers in the subfield.

Table H.1: Effect of Turning Coed on Gender-Related Research (OLS and Negative Binomial)

	(1) Number of Gender-Related Papers	(2) Number of Gender-Related Papers	(3) Gender-Related Share
Years -5 to -2	0.027	-0.015	0.002
	(0.060)	(0.056)	(0.005)
Years 0 to 2	0.058	0.008	0.004
	(0.042)	(0.056)	(0.007)
Years 3 to 6	0.113	0.165	0.008
	(0.089)	(0.058)	(0.008)
Baseline Mean	0.57	0.57	0.04
Observations	95886	63254	95886
Estimator	OLS	Negative Binomial	OLS

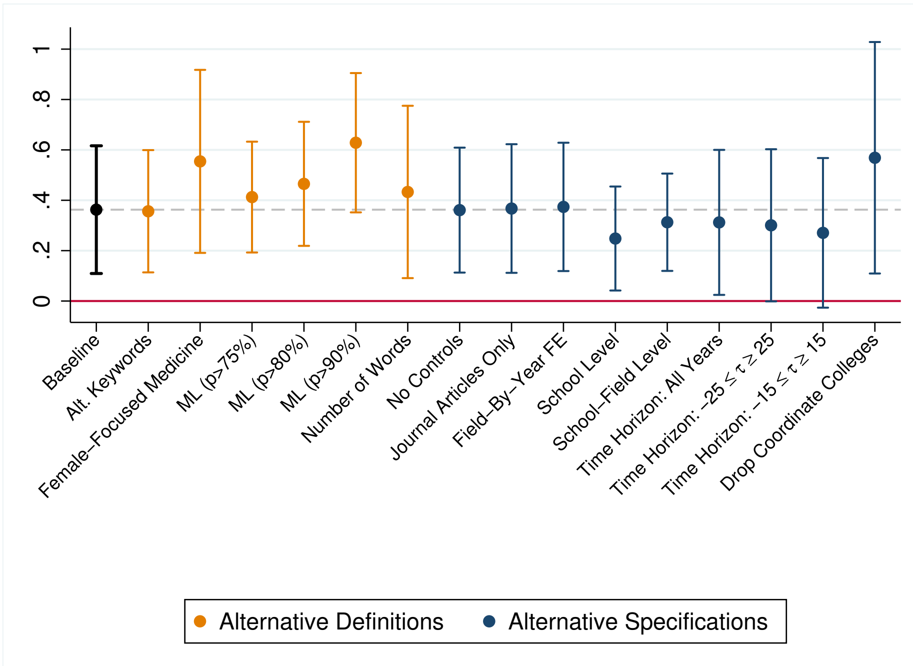
Notes: Table H.1 reports the average effects from estimating equation (1) on gender-related research outcomes. Each column reports estimates from a separate regression. Column (1) is estimated using OLS and Column (2) is estimated using a fixed effect negative binomial model. Effect at event time $\tau = -1$ is normalized to 0. Baseline mean is the mean of the outcome variable at $\tau = -1$. The coefficient for Years -5 to -2 is the pre-period average of the coefficients for $\tau = -5$ to $\tau = -2$. The coefficient for Years 0 to 2 is the post-period average of the coefficients for $\tau = 0$, $\tau = 1$, and $\tau = 2$. Similarly, the coefficient for Years 3 to 6 is the average of the coefficients for $\tau = 3$ to $\tau = 6$. Column (1) includes school-subfield fixed effects, year fixed effects, and discipline-by-year fixed effects. We also control for total publications, total publications with an abstract, and the average abstract length at the school-subfield. Column (2) include only school-subfield fixed effects and year fixed effects, because the model does not converge with discipline-by-year fixed effects or with additional control variables, such as total number of papers in the subfield. Standard errors in parentheses are clustered at the school level.

I Additional Robustness Checks

I.1 Alternative Definitions and Specifications

Appendix Figure I.1 compares the baseline average effect estimated for total gender-related papers for the years 3-6 after the policy with alternative definitions and specifications. The following subsections describe the analysis of each of the individual components and present the corresponding event-study results.

Figure I.1: Robustness to Alternative Definitions and Specifications



I.1.1 Alternative Definitions

We show our results are robust to using alternative definitions of gender-related research. As described in Appendix Section C.1.1, we construct two sets of keywords to identify gender-related research. The coefficient labeled "Alt. Keywords" in Appendix Figure I.1 is estimated using the alternative list with a broader set of words.

Next, we use the methodology employed by Koning, Samila and Ferguson (2021) to classify medical research. Specifically, we pass the text of the title and abstract of each paper in the field of medicine through the National Library of Medicine's Medical Text Indexer (MTI). We identify a paper as "female-focused" if the MTI includes "Female" as one of the top Medical Subject Headings (MeSH). "Female" is defined as "female organs, diseases, physiologic processes, genetics, etc.; do not confuse with WOMEN as a social, cultural, political, economic force" (Koning, Samila and Ferguson, 2021). The result of using this definition is labeled "Female-Focused Medicine" in Appendix Figure I.1. Note that this estimation is restricted to only the field of medicine.

In addition, we use a machine-learning model to identify the probability a paper is gender-related based on the title of the paper. We utilize titles because this information is available for all the papers in our dataset while abstracts are only available for 60% of the papers. We briefly summarize the procedure here and provide additional details in Appendix C.2. We proceed by first constructing a training set of gender-related papers and clearly *non* gender-related papers published at universities outside of our sample. We define gender-related papers as those classified by MAG in the field of "gender studies" and those published in gender-related journals. For non gender-related papers, we use papers whose titles do not contain any of the words in a broad set of gender-related words. We then apply the Naïve Bayes (NB) classifier to this training set to compute the predicted probability of a paper being gender-related in our sample. We classify all papers as gender-related if the predicted probability is above a given threshold.

Appendix Figure I.1, "ML ($p > X\%$)" presents the average effect of turning coed on the number of gender-related papers produced using Naïve Bayes for the cutoff $X \in \{75, 85, 90\}$. We find a consistent pattern across all definitions of a clear and sharp increase in gender-research production after coeducation.

Finally, we show that our results are robust to using the number of times a gender-related word appears in the title or abstract. We present the result in Appendix Figure I.1, labeled "Number of Words". We find a consistent increase in gender-related word usage.

I.1.2 Alternative Specifications

Appendix Figure I.1, "No Controls" shows that our results are very similar when we remove the time-varying controls from our specification: total number of papers, total number of papers with abstracts, and average number of words used in the abstracts.

"Journal Articles Only" shows that our results are unchanged after restricting to the sample of journal articles. As explained in Section 3, in our main analysis, we include all research publications, including journal articles, books, and conference papers.

"Field-By-Year FE" shows that our results are robust to using field-by-year fixed effects instead of discipline-by-year fixed effects, where the field is at a lower level of aggregation.The field categories are art/philosophy, biology/environmental science, medicine, psychology, sociology, business/economics, political science, and history. We grouped together smaller fields such that the Poisson model converges.

Next, we show that our results on research are also robust to estimation at the school level or school-field level instead of the school-subfield level. For the school level analysis, by construction we can not include discipline-by-year fixed effects. Field level here refers to fields such as economics, history, arts. This is more dis-aggregated than the disciplines of humanities, social science and science.

We then show that the results are robust to changing the time horizon of the data sample. In our main results, we utilize all observations 20 years before and after coeducation. As robustness, we show that results remain similar when changing the time horizon to all data available: from -35 to 45, from -25 to 25, or from -15 to 15 years relative to coeducation.

Lastly, we drop universities with coordinate or sister women's colleges prior to coeducation. Potentially, including these universities in our sample may bias our results because female students may have already integrated in the campus life prior to coeducation. In nearly all cases, these universities went coed through merging with their sister college. These universities include

- Loras College / Columbia College Women's
- Tulane University / Newcomb College
- Rutgers University - New Brunswick / Douglass
- Canisius College / Canisius College Women's
- John Carroll University / John Carroll Women's
- Xavier University / Xavier Women's
- Brown University / Pembroke College
- Saint Mary's University / St. Mary's Women's
- Hamilton College / Kirkland College
- St. Edward's College / Maryhill College
- Fordham College / Thomas More College
- St John's University-New York / Notre Dame College (New York)
- *Columbia University / Barnard (did not switch through merger)*

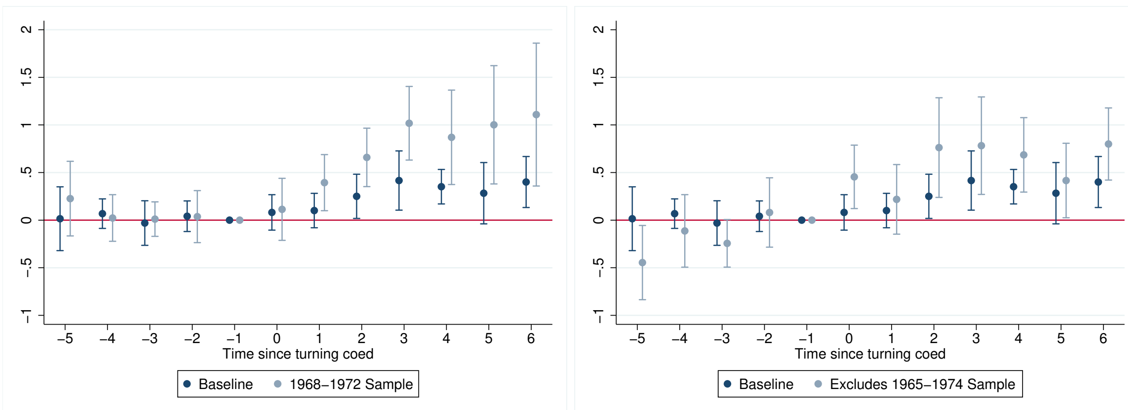
We find similar results when we exclude these universities from our analysis.

I.2 Sensitivity to University Sample

Figure 1 suggests that most universities in our sample switched during the period between 1968 and 1972. In this section we test the sensitivity of our results to restricting the sample to the middle five-year period (1968–1972) and *excluding* this middle period. Figure I.3 uses universities that were always coeducational prior to 1940 as an additional control group.

Figure I.2: Effects of Turning Coed on Gender-Related Papers Restricted to Universities that Switched in 1968–1972 or Excluding Universities that Switched in 1968–1972

(a) 1968–1972 Sample (b) Excluding 1968–1972 Sample

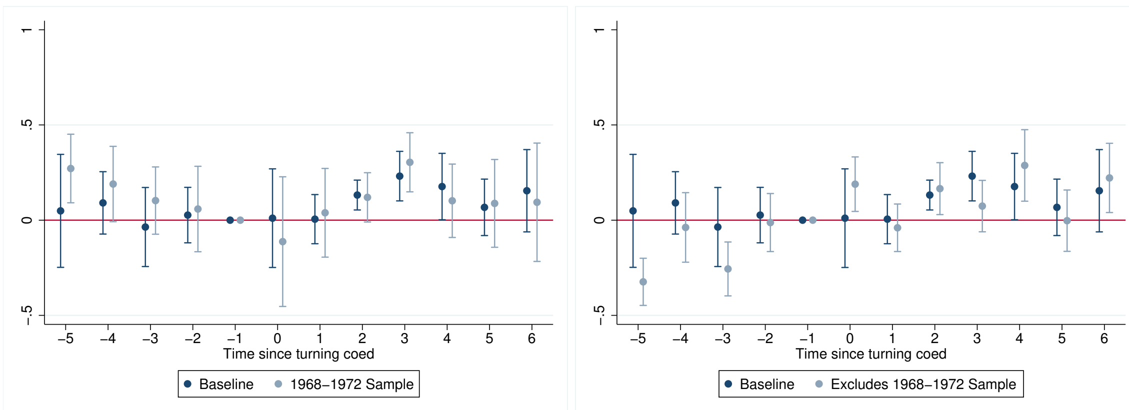


Notes: We estimate equation (1) for our main outcome variable, number of gender-related papers for the period with the most switches (1968–1972) and for all other years excluding 1968–1972 schools. Baseline estimates from the main analysis are also plotted.

Figure I.3: Effects of Turning Coed on Gender-Related Papers Restricted to Universities that Switched in 1968–1972 or Excluding Universities that Switched in 1968–1972 (Using Always-Coed As Control Schools)

(a) 1968–1972 Sample

(b) Excluding 1968–1972 Sample



Notes: We estimate equation (1) for our main outcome variable, number of gender-related papers for the period with the most switches (1968–1972) and for all other years excluding 1968–1972 schools. In all regressions, we use schools that universities that opened as coeducation before 1940 as control universities.

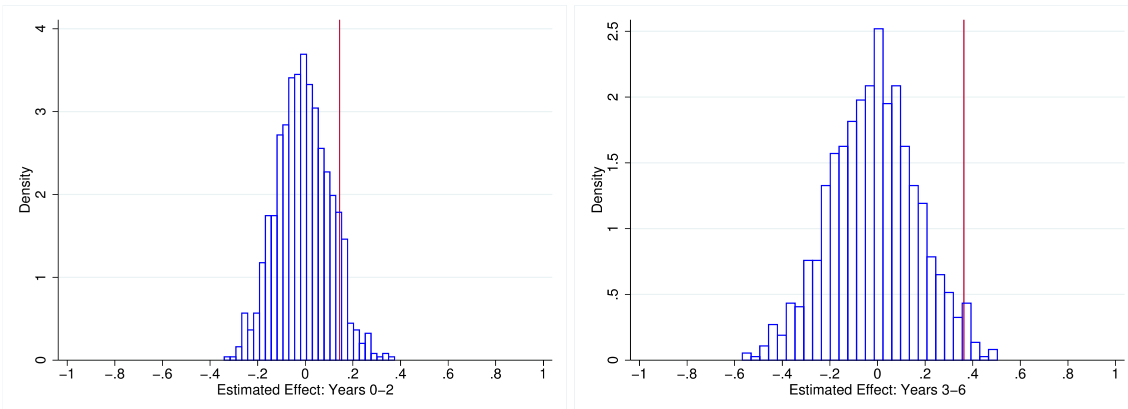
I.3 Placebo Turning Coed Dates

Next, we conduct a randomization test in which we assign placebo turning coed dates to all schools in our sample.[10] We do this 1,000 times and in each iteration, we estimate the equation (1) for our main outcome variable, the number of gender-related papers. In Appendix Figure I.4, we plot the two distributions of the placebo treatment effects. The vertical lines indicate the actual causal effects we estimated using the true turn-coed dates. As can be seen from the graphs, the estimated true effect for Years 3-6 is much larger than most of the placebo effects and is in the top 2% of the distribution. This provides supporting evidence that the estimated impact of turning coed on research is unlikely to have occurred by chance.

[10]We assign to each school without replacement a placebo turn-coed date from the actual distribution of coed dates with uniform probability.

Figure I.4: Effects of Turning Coed on Gender-Related Papers Using Placebo Treatment Dates

(a) Estimated Effect in Years 0-2 (b) Estimated Effect in Years 3-6

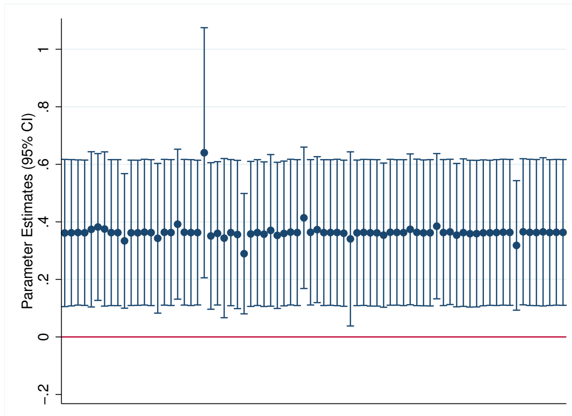


Notes: This figure plots the distributions of the placebo treatment effects computed using a randomization test as follows: We assign to each school without replacement a placebo turn-coed date from the actual distribution of coed dates with uniform probability. We conduct this 1,000 times and in each iteration, we estimate equation (1) for our main outcome variable, number of gender-related papers and store the average effect for years 0 to 2 and 3 to 6. The vertical lines indicate the actual coefficients we estimated using the true turn coed dates. The estimated effect in Years 0-2 is in the 89th percentile of the distribution while the estimated effect in Years 3-6 is in the 98th percentile of the corresponding distribution.

I.4 Robustness to Dropping Each University Once

We conduct an analysis to show that our results are not driven by any one specific university in the sample. In particular, we estimate equation (1) for our main outcome variable, number of gender-related papers, 76 times. In each iteration, we successively drop one university from the sample and plot the average effect for years 3 to 6 in Appendix Figure I.5. We find highly consistent results across all regressions, which suggests our results are not driven by any particular school.

Figure I.5: Effects of Turning Coed on Gender-Related Papers Leaving Out One University at a Time

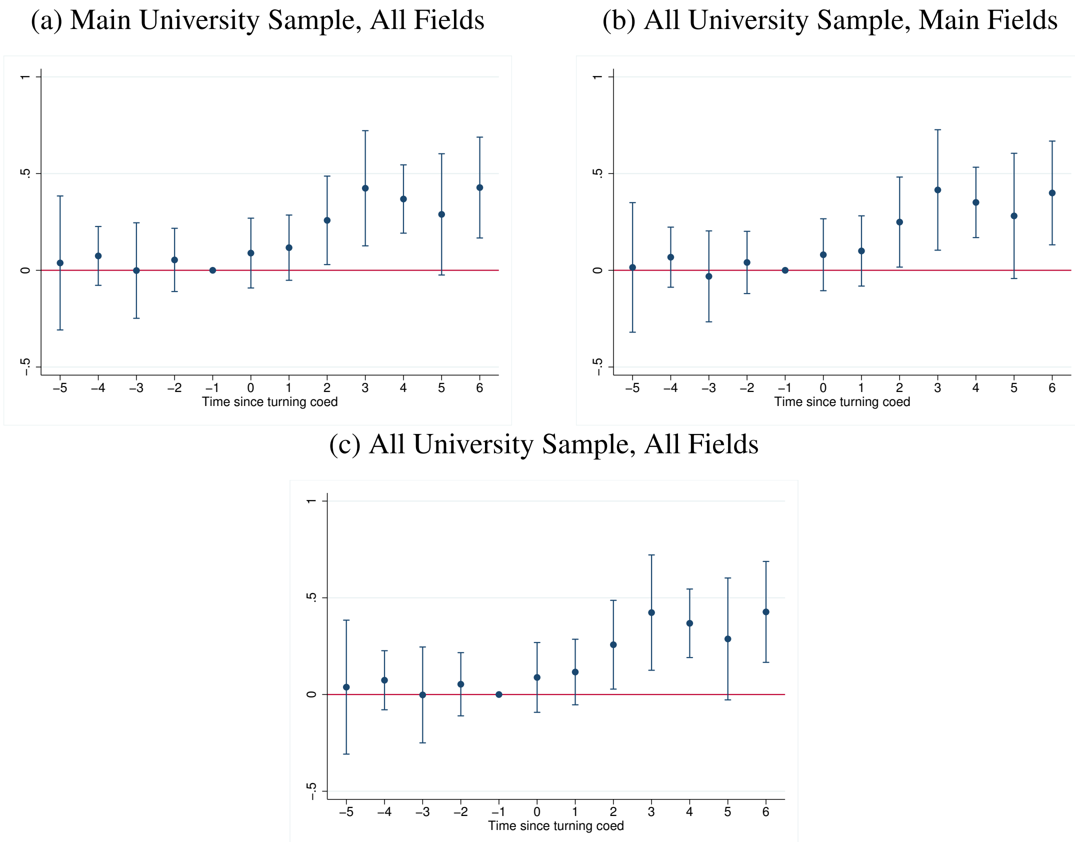


Notes: We estimate equation (1) for our main outcome variable, number of gender-related papers, 76 times. In each iteration, we successively drop one university from the sample and plot the average effect for years 3 to 6.

I.5 Robustness to Sample Restrictions

Our preferred specification makes two sample restrictions: (i) universities that have published in one of the gender-related fields (social sciences, humanities, biology, environmental science, or medicine) prior to coeducation and (ii) only publications in the gender-related fields. In Figure I.6, we show that our results are robust to the inclusion of all universities and/or all fields.

Figure I.6: Robustness to Sample Restrictions

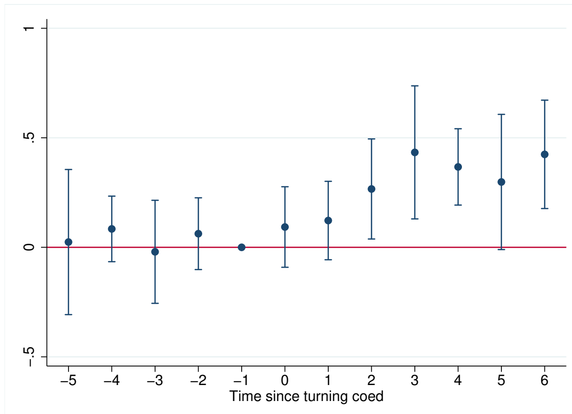


Notes: Figure I.6 plots the event time coefficients and their 95% confidence intervals from estimating equation (1) for total number of gender-related research publications. The specification is estimated using a conditional fixed effects Poisson model. In the specification, we include school-subfield fixed effects, year fixed effects, and discipline-by-year fixed effects. We also control for total publications, total publications with an abstract, and the average abstract length at the school-subfield. "Main University Sample" is the 76 universities in the baseline specification that published at least once in either social sciences, humanities, medicine, environmental science, or biology prior to turning coed. "All University Sample" consists of the 84 schools that turned coed between 1960 and 1990 regardless of their publication history. "Main Fields" refer to the field restriction in the baseline specification to social sciences, humanities, environmental science, medicine, and biology. "All Fields" include all fields represented in the Microsoft Academic Research dataset, including physics, chemistry, etc.

I.6 Predictors of Timing of Coeducation

Appendix Table A.4 shows the results from bivariate regressions between the year when school switches to coeducation and each of the school-level characteristics. We find that schools that are masters colleges and universities, with earlier years of opening, non-sectarian, and Methodist are correlated with earlier transitions to coeducation. In Appendix Figure I.7, we directly control for potential differential trends along these dimensions by allowing for different linear trends for each Carnegie classification, year of opening categories and religious affiliation. We show that our results are robust to these additional controls.

Figure I.7: Effects of Turning Coed on Gender-Related Papers Using Additional Controls



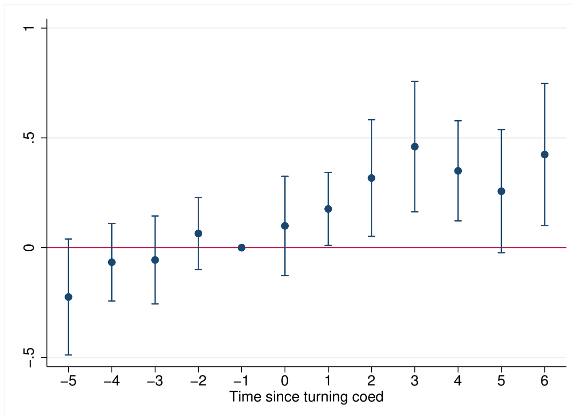
Notes: This figure plots the event time coefficients and their 95% confidence intervals from estimating equation (1) for total number of gender-related research. The specification is estimated using conditional fixed effects Poisson models. In the specification, we include school-subfield fixed effects, year fixed effects, and discipline-by-year fixed effects. We also control for total publications, total publications with an abstract, and the average abstract length at the school-subfield. We include as additional controls linear trends for each Carnegie classification (Doctoral Universities, Masters Colleges and Universities, Baccalaureate Colleges, and other higher education university types), year of opening categories (before 1850, 1850-1859, 1900-1949, 1950 or later) and religious affiliation (Catholic, Presbyterian, Methodist, or non-sectarian). We cluster at the school level.

I.7 Regional Cultural Shifts

A potential threat to identification is that unobserved broader cultural changes at the regional level may be correlated with both the timing of coeducation and production of gender-related research.[11] In Appendix Figure I.8, we show that our results are robust to the inclusion of region-by-year fixed effects, where the region is given by the nine U.S. Census divisions.

[11] Charles, Guryan and Pan (2018) show that sexist attitudes between 1977 and 1998 differ substantially across U.S. regions, and even across states within regions.

Figure I.8: Effects of Turning Coed on Gender-Related Papers Including Region-By-Year Fixed Effects

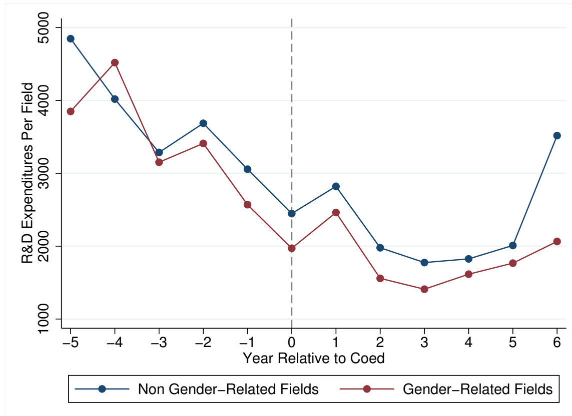


Notes: This figure plots the event time coefficients and their 95% confidence intervals from estimating equation (1) for total number of gender-related research. The specification is estimated using conditional fixed effects Poisson models. In the specification, we include school-subfield fixed effects, year fixed effects, and discipline-by-year fixed effects. We also include region-by-year fixed effects, where the region represents the nine U.S. Census divisions. We also control for total publications, total publications with an abstract, and the average abstract length at the school-subfield. We cluster at the school level.

I.8 R&D Funding Towards Gender-Related Fields

We explore whether coeducation shifted R&D investments towards gender-related research. Data on research expenditures come from The Higher Education Research and Development (HERD) Survey conducted by the National Science Foundation, which collects annual data on R&D expenditures by fields of study (National Center for Science and Engineering Statistics, 1972–1990). This data is available beginning in 1972. Appendix Figure I.9 shows the trends in R&D Expenditures by field of study. Gender-related fields include biology, economics, environmental science, medicine, political science, psychology and sociology in the years before and after coeducation. The trends in both types of field are similar prior and after coeducation. There is limited evidence that R&D expenditures are relatively higher in gender-related fields.

Figure I.9: Trends in R&D Expenditures by Field



Notes: Higher Education Research and Development Survey 1972-1990. Gender-related fields include biology, economics, environmental science, medicine, political science, psychology and sociology. Non gender-related fields are chemistry, computer science, engineering, mathematics and physics.

I.9 Shift in Research Towards "Hot" Topics

One potential confounding factor is that by turning coed, universities are now more competitive at attracting scholars who are at the forefront of their fields, at a time when gender-related topics are becoming a key research focus. In this case, the increase in gender-related research would not be mediated through the increase in gender diversity on campus. To investigate this, we use an external sample of universities to classify the fastest-growing subfields, or "hot" subfields.[12] Specifically, for each subfield, we calculate the percentage change in the number of papers produced between 1960 and 1990. Then we identify the top 25th percentile of subfields within each field as the hot fields.

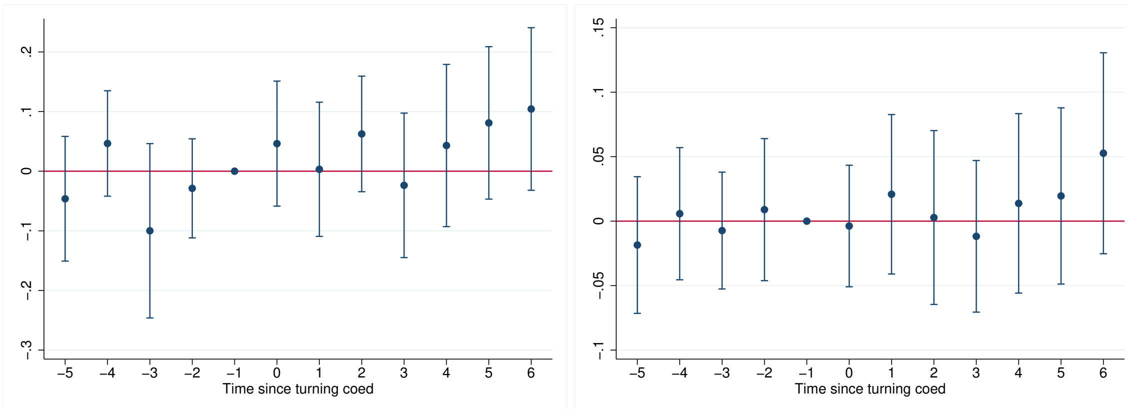
Unlike our results for gender-related papers, Appendix Figure I.10 shows that there is no evidence of a sharp increase in the number of papers or the share of papers written in hot fields at the school level.

[12] We used the sample of universities that either opened as coeducational universities prior to 1940 or turned coed after the end of our sample period in 1990.

Figure I.10: Effects of Turning Coed on Research in Hot Topics

(a) Number of Papers in Hot Topics

(b) Share of Paper in Hot Topics



Notes: The figures plots the event time coefficients and their 95% confidence intervals from estimating equation (1) for total number of papers in hot subfields and share of papers in hot subfields. Figure I.10a is estimated using a conditional fixed effects Poisson model while Figure I.10b is estimated using OLS. Both specifications are estimated at the school level and restricted to gender-related fields. We also control for total publications, total publications with an abstract, and the average abstract length at the school-subfield. We cluster at the school level.

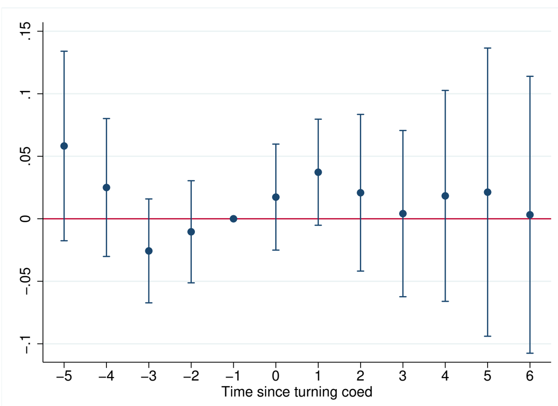
I.10 Total Graduate Students and Female Share of Graduate Students

An potential alternative explanation for the increase in gender-related research is that schools admit more female graduate students when they turn coed. Although graduate programs in many of these universities have been coeducational for many years before undergraduate admissions, schools may increase female graduate enrollment. If this was the case, the increase in gender-related research may not necessarily come from the increase in gender diversity among the undergraduate student body.

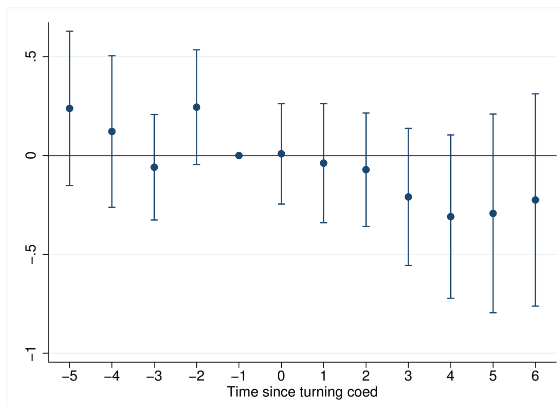
Appendix Figures I.11 and I.12 plot the event time coefficients and their 95% confidence intervals from estimating equation (1) for the female share of degrees awarded and log number of total degrees awarded in master's and doctorate programs, respectively. We find no significant effect of coeducation on the size of the graduate student body and on the gender composition of graduate students.

Figure I.11: Effect of Turning Coed on Master's Student Body

(a) Female Master's Degrees Share



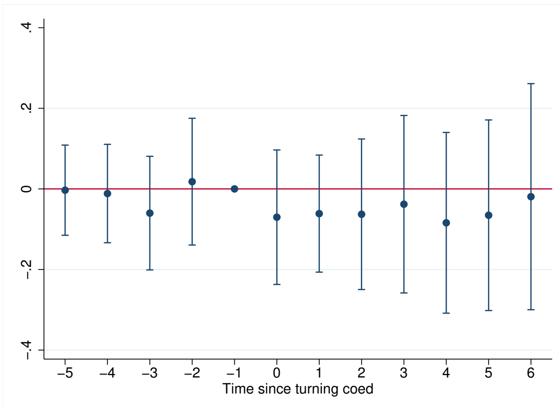
(b) Log Master's Degrees Awarded



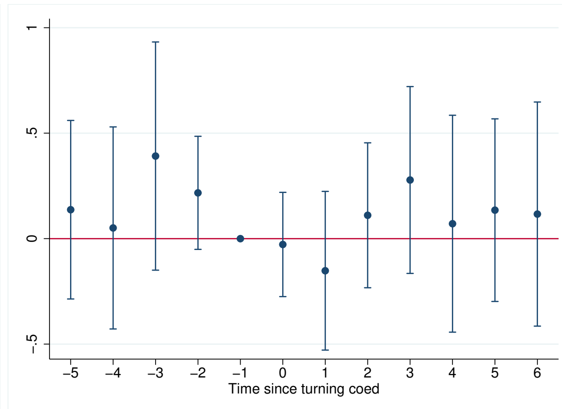
Notes: Figure I.11 plots the event time coefficients and their 95% confidence intervals from estimating (1) for female share of master's degrees awarded and log number of total master's degrees awarded. Regressions are estimated using OLS. We include school fixed effects and year fixed effects. We cluster at the school level.

Figure I.12: Effect of Turning Coed on Doctorate Student Body

(a) Female Doctorate Degrees Share



(b) Log Doctorate Degrees Awarded



Notes: Figure I.12 plots the event time coefficients and their 95% confidence intervals from estimating (1) for female share of doctorate degrees awarded and log number of total doctorate degrees awarded. Regressions are estimated using OLS. We include school fixed effects and year fixed effects. We cluster at the school level.

I.11 Spillovers to Local Universities and Universities with Strong Co-Authorship Ties

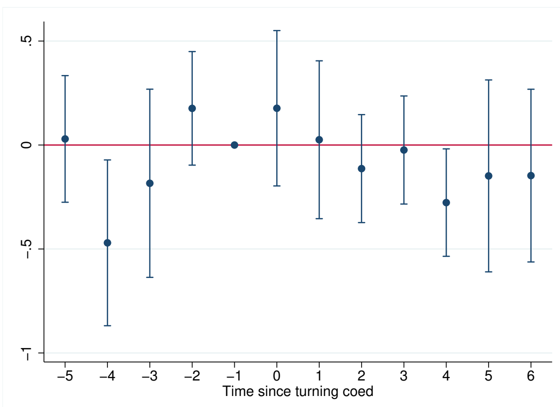
We investigate whether the increase in gender-related research resulted in spillovers to universities outside of our sample. We focus on universities that either opened as coeducational universities prior to 1940 or turned coed after the end of our sample period in 1990. We consider two types of spillovers. First, we analyze local spillovers to nearby universities in the same city as the coeducational schools. A large literature in agglomeration economics has documented the presence of local knowledge spillovers from universities (Anselin, Varga and Acs, 1997). Potentially, turning coed may lead other universities in the same geographical area to increase research production related to gender. Alternatively, the university that becomes coeducational may start attracting scholars from local universities. This would lead to a fall in gender-related research at the surrounding universities.

Appendix Figure I.13a captures the spillover effects on gender-related research for 50 universities that were in the same city but did not turn coed between 1960 and 1990. We assign to these universities the earliest coeducation date of the schools that went coed in that same city. We find no evidence that local universities were affected by a neighboring university that switched to coeducation.

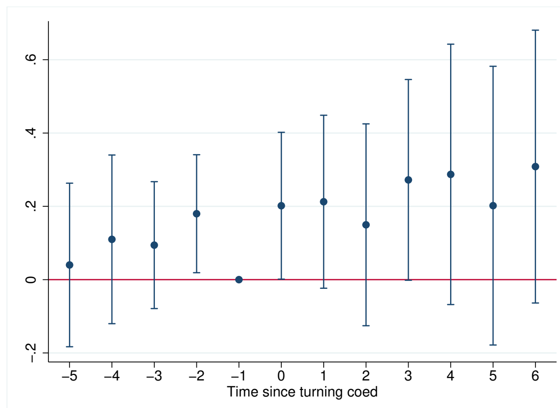
Second, we investigate whether there were spillover effects to universities with close collaboration ties with the schools that switched to coeducation. For each turn-coed university, we identify the top three most-connected universities among the universities that opened as coeducational or never turned until after 1990 based on the number of co-authored papers between 1950 and 2005. We assign to these universities the earliest coeducation date of the turn-coed universities they have ties to. Appendix Figure I.13b reveals limited evidence that coeducation led to increases in gender-related research at these universities.

Figure I.13: Spillover Effects of Turning Coed

(a) Spillovers to Universities in the Same City



(b) Spillovers to Universities with Close Collaboration Ties



Notes: The figures plots the event time coefficients and their 95% confidence intervals from estimating equation (1) for total number of gender-related research for universities that either opened as coeducational universities prior to 1940 or turned coed after the end of our sample period in 1990. Appendix Figure I.13a captures the spillover effects on gender-related research for 50 universities that were in the same city but did not turn coed between 1960 and 1990. We assign to these universities the earliest coeducation date of the schools that went coed in that same city. Appendix Figure I.13b captures the spillover effects on gender-related research on 77 universities that were among the top three most-connected universities to the schools that went coed, but did not turn coed between 1960 and 1990. We assign to these universities the earliest coeducation date of the turn-coed universities they had ties to. The specifications are estimated using conditional fixed effects Poisson models. We also control for total publications, total publications with an abstract, and the average abstract length at the school-subfield. We cluster at the school level.

J Decomposition of Total Increase in Gender-Related Papers

In this section, we use a Kitagawa-Oaxaca-Blinder style decomposition to show to what extent the total increase in gender-related papers is explained by change in faculty composition, versus by within-group increasing propensity to study gender-related topics.

Specifically, the change between mean number of gender-related papers per researcher (μ) from time t to $t+1$ can be decomposed into:

$$\begin{aligned}
\mu_{t+1} - \mu_t =& s^F_{t+1} * \mu^F_{t+1} + s^M_{t+1} * \mu^M_{t+1} - (s^F_t * \mu^F_t + s^M_t * \mu^M_t) \\
&= [(s^F_{t+1} - s^F_t) * \mu^F_t + s^F_{t+1} * (\mu^F_{t+1} - \mu^F_t)] \\
&+ [(s^M_{t+1} - s^M_t) * \mu^M_t + s^M_{t+1} * (\mu^M_{t+1} - \mu^M_t)] \qquad (3)
\end{aligned}$$

where s^G_t and s^G_{t+1} are the share of researchers of gender $G \in \{Male, Female\}$ in the year before coeducation (t) and on average between year 3 and 6 post coeducation ($t+1$), respectively. μ^G_t and μ^G_{t+1} are the number of gender-related papers produced by researchers of gender G in the year before coeducation (t) and on average between year 3 and 6 post coeducation ($t+1$), respectively. The first term of the decomposition is the part of the increase in gender-related papers due to a change in the number of female researchers. The second component represents the part of the effect driven by an increase in the production of gender-related papers by female researchers. Analogously, the third term is the part explained by a change in the number of male researchers and the fourth term is the part due to an increase in the production of gender-related papers by male researchers.

To compute the components, we use the estimates reported in Appendix Table J.1. This table reports the coefficients for the number of gender-related papers at the author level for all researchers, both incumbent and non-incumbent researchers. Because we are using a linear decomposition, we use a linear model for the estimates as opposed to the Poisson model. The coefficient (0.011) for Years 3 to 6 in Column (1) represents the total increase in number of papers related to gender $\mu_{t+1} - \mu_t$. Similarly, the corresponding coefficient in Column (2) combined with the baseline mean (0.04) allows us to infer μ^M_{t+1}, (0.009+0.04), the number of gender-related papers written by male researchers post coeducation. For μ^F_{t+1}, we use equation 3 to back out the effect on the number of gender-related papers written by female researchers post-coeducation rather than using the estimated effects reported in Column (3). This is due to the fact that our estimates for female researchers show evidence of a large negative pre-trend and are not robust to slight deviations from parallel assumptions as we show in Appendix Section F.2. For s^G_{t+1} and s^G_t, we utilize summary statistics from Appendix Table A.3 for baseline values and estimates from Appendix Table A.13 to compute the share of male and female researchers post coeducation.

The decomposition suggests that the increase in the total gender related papers can be attributed to the following factors:

- 13% due to an increase in the number of female researchers
- 21% due to an increase in the production of gender-related papers by female researchers

- -7% due to a decrease in the number of male researchers
- 73% due to an increase in the production of gender-related papers by male researchers

In short, 6% (13-7) of the overall effect is explained by changes in gender composition, with the remaining 94% (21+73) is explained by the within-gender propensity to produce gender-related research. Notably, the increase is primarily driven by the increase in the gender-related research output by *male* researchers. In Sections 6.3.1 and 6.3.2, we discuss that this can come from a change in the composition of male researchers (e.g., those that are more interested in gender-related research arriving after the school has turned coed) as well as a direct treatment effect on researchers at these universities.

Table J.1: Effect of Turning Coed on Gender-Related Research Estimated at the Author Level

	Gender-Related Papers		
	(1) All	(2) Male	(3) Female
Years -5 to -2	0.001	0.002	-0.009
	(0.005)	(0.004)	(0.008)
Years 0 to 2	0.005	0.004	0.008
	(0.003)	(0.003)	(0.010)
Years 3 to 6	0.011	0.009	0.025
	(0.006)	(0.005)	(0.015)
Baseline Mean	0.05	0.04	0.07
Observations	490071	385286	104783
Estimator	OLS	OLS	OLS

Notes: This table reports the average effects from estimating equation (1) on the total number of gender-related papers at the author level. Effect at event time $\tau = -1$ is normalized to 0. Baseline mean is the mean of the outcome variable at $\tau = -1$. The coefficient for Years 0 to 2 is the post-period average of the coefficients for $\tau = 0$, $\tau = 1$, and $\tau = 2$. Similarly, the coefficient for Years 3 to 6 is the average of the coefficients for $\tau = 3$ to $\tau = 6$. All regressions include school fixed effects, year fixed effects, and discipline-by-year fixed effects. We also control for total publications, total publications with an abstract, and the average abstract length at the school-subfield. All regressions are estimated using OLS at the author-year level. Standard errors in parentheses are clustered at the school level.

K Accounting for Selection in Incumbent Researcher Analysis

We have shown that turning coed had significant and positive impact on the gender-related research production of incumbent researchers. However, the inclusion of individual fixed effects means that this effect is only identified for those who have chosen to remain at the school after the policy change. The treatment effects estimated using individual fixed effects may be biased if there are time-varying unobservables that are correlated with attrition. For example, it may be the case that researchers who are more affected by the policy are also those that are induced into staying at the university longer.

To take into account any selective attrition effects, we conduct a bounding exercise on the treatment effect in the same spirit as the bounding exercise proposed by Lee (2009). Specifically, we assume that all researchers that leave the sample would have produced zero gender-related research had they remain at the university. We implement this under two different assumptions. Under the first assumption, we assign incumbent researchers to their original university and impute zero gender-related research for all periods for which they are active, i.e., until the end of their publishing career. However, this does not take into account those that choose to leave the university and stop publishing entirely in response to the reform. Hence, under the second, more conservative, assumption, we assume all incumbent researchers would continue publishing until they have reached the median length of publication careers in the sample (7 years) or the actual end of their career, whichever is greatest.

In Table K.1, we present the baseline average estimates from equation (1) without accounting for selection (Column 1), and after accounting for selection under the first (Column 2) and second assumption (Column 3). These results show that under the first assumption, the treatment effect accounts for at least 96% (=$(e^{0.441}-1)/(e^{0.454}-1)$) of the increase in gender related papers. This large percentage is driven by the fact that only 3% of incumbent researchers continue publishing after leaving their original university. Under the more conservative assumption that everyone will publish for at least seven years, we find that the treatment effect for incumbent researchers can account for at least 90% (=$(e^{0.418}-1)/(e^{0.454}-1)$) of the total effect even accounting for selective attrition.

We can use these results to conduct analogous computations in Section L for how much the treatment effect would explain for the overall increase. From our main results using the subfield analysis, we observe an overall increase in gender-related research by 44% in years 3 to 6 (See Section 3.3). Given that there were 4.08 total gender-related research publications at each university at baseline (Appendix Table A.3), this implies a total increase of $.44 \times 4.08 = 1.8$ at the university level.

To provide a lower bound for how much the treatment effect can explain under heterogeneous treatment effects, we assume that the treatment effect for all new researchers is zero.

Note that by years 3 to 6, incumbent researchers represent 39% of researchers at the university. Under the first assumption, we observe a treatment effect of 55% = $(e^{0.441} - 1) \times 100$. Exporting this treatment effect, we calculate that at least $.39 \times .55 \times 4.08 = .88$ papers, or 49%, can be explained by the treatment effect. Under the second assumption, we observe a treatment effect of 52% = $(e^{0.418} - 1) \times 100$. In this case, at least $.39 \times .52 \times 4.08 = 0.83$ papers, or 46%, can be explained.

Table K.1: Bounding the Selection Effect of Turning Coed on Incumbent Researchers

	Gender-Related Papers		
	(1) No Selection	(2) Selection on Attrition I	(3) Selection on Attrition II
Years 0 to 2	0.200	0.193	0.164
	(0.097)	(0.098)	(0.098)
Years 3 to 6	0.454	0.441	0.418
	(0.132)	(0.131)	(0.134)
Baseline Mean	0.05	0.15	0.15
Observations	60753	61452	62331
Estimator	Poisson	Poisson	Poisson

Notes: This table reports the estimates from conducting a bounding exercise on the selection effect of incumbent researchers. Column (1) is the baseline estimates from estimating equation (1) using a Poisson model for incumbent researchers at the researcher level. In Columns (2) and (3), we account for potential selective attrition by assuming all researchers that leave the sample would have produced zero gender-related research had they remain at the university. In Column (2), we assign incumbent researchers to their original university and impute zero gender-related research for all periods for which they are active, i.e., until the end of their publishing career. In Column (3), we assume all incumbent researchers would continue publishing until they have reached the median length of publication careers in the sample (7 years) or the actual end of their career, whichever is greatest. All specifications are estimated using a Poisson model and include researcher FE and year FE. We also control for total publications, total publications with an abstract, and the average abstract length at the school-subfield.

L Quantifying the Treatment Effect on Research Focus

In our analysis, we have ruled out key explanations for the increase in gender-related research: (i) increases in the number of faculty and researchers and (ii) increases in research productivity. Instead, we have isolated two mechanisms. The first channel is the compositional change in who conducts research at these universities. The second, and perhaps more surprising, channel is the treatment effect on research focus as shown by our analysis on incumbent researchers. How much of the overall increase in gender-related research can be explained by this treatment effect on research interests?

To quantify the magnitude, we apply the partial identification framework described in Manski (2007). We first note that the average treatment effect on the treated for gender-related research production for all researchers, including both incumbents and new arrivals, is given by $E[Y_i(1) - Y_i(0)]$, where i is an individual scientist. $Y_i(1)$ and $Y_i(0)$ denote the number of gender-related research papers produced by scientist i in the presence or absence of coeducation, respectively. We define this to be the treatment effect on research focus because it captures the changes in gender-related research production as a direct result of coeducation. This expression can be further decomposed into the treatment effects for incumbents and non-incumbents as

$$E[Y_i(1) - Y_i(0)] = \theta E[Y_i(1) - Y_i(0)|orig = 1] + (1 - \theta)E[Y_i(1) - Y_i(0)|orig = 0] \quad (4)$$

where $orig$ denotes incumbent researchers and θ is the share of incumbent researchers.

Under our identifying assumptions, we are able to estimate $E[Y_i(1) - Y_i(0)|orig = 1]$ using the incumbent researcher analysis in Section 6.3.2, because we can observe production of gender-related research of incumbent researchers prior to coeducation. However, if treatment effects differ across individuals, then the treatment effects estimated for the incumbent researchers may not generalize to the new researchers (i.e. $E[Y_i(1)-Y_i(0)|orig = 1] \neq E[Y_i(1) - Y_i(0)|orig = 0]$). Heterogeneity in treatment effects across researchers is reasonable to assume given that we have documented changes in the selection of researchers as a result of coeducation. For example, researchers with prior interests in gender-related research may respond less to a gender-diverse environment because they would have written a similar number of gender-related publications regardless of the gender composition of the student body.

To make progress on this question, we compute a lower bound for how much the treatment effect can explain the total effects in the years 3 to 6 after coeducation. Specifically, we assume all new researchers are selected in such a way that they would have produced the same number of gender-related publications regardless of the coeducation policy. This corresponds to the assumption that the treatment effect among these researchers is zero. This yields a lower bound provided that coeducation would not have induced any of the new researchers to produce *fewer* gender-related papers than they would have otherwise. Specifically, we assume $E[Y_i(1) - Y_i(0)] \geq 0$ for all researchers i.

To compute this bound, we first note that by years 3 to 6, incumbent researchers represent 39% of researchers at the university ($\theta = .39$). The estimated treatment effect from the incumbent researcher analysis is 57%.[13] Given that the average university published 4.08 gender-related research papers at baseline (Appendix Table A.3) and, by definition, all of these publications were written by incumbent researchers, this implies that the average treatment effect for existing researchers in levels is $E[Y_i(1) - Y_i(0)|orig = 1] = .57 \times 4.08 = 2.33$ additional gender-related papers. Plugging into equation (4) and assuming zero treatment effect for non-incumbent researchers (i.e., $E[Y_i(1) - Y_i(0)|orig = 0] = 0$), the lower bound for the average treatment effect for researchers is given by $E[Y_i(1) - Y_i(0)] = .39 \times 2.33 = 0.91$. How does this compare with the overall increase in gender-related research we observe empirically?

To answer this question, note that from our main results using the subfield analysis, we find an overall increase in gender-related research of 44% in years 3 to 6 (See Section 3.3). This implies a total increase of $.44 \times 4.08 = 1.8$ papers at the university level. As a result, the relative magnitude of the treatment effect (.91) and the total effect (1.8) suggests that the treatment effect can account for at least 51% of the overall increase in gender-related research even assuming all new researchers were not affected by the policy.

M Examples of Incumbent Researchers

We present the works of two male incumbent researchers at Yale University who began producing gender-related research after Yale turned coeducational in 1969. Papers in blue are gender-related.

Roy Schafer, Psychologist, Yale University[14]

1953 Chief Psychologist in Yale Department of Psychiatry

...

1965 Contributions Of Longitudinal Studies TO Psychoanalytic Theory. Schafer, R. *Journal of the American Psychoanalytic Association*, 1965, 13(3), pp. 605–618

1967 Ego autonomy and the return of repression. Schafer, R. *International journal of psychiatry*, 1967, 3(6), pp. 515–518

1967 Ideals, the ego ideal, and the ideal self. Schafer, R. *Psychological issues*, 1967, 5(2), pp. 131–174

[13] Note that the estimates from the incumbent analysis are based on the sample of researchers that continue to publish at the university after coeducation. For this to identify the treatment effect, we are assuming selection at random, conditional on controls. We take into account any potential selective attrition among the incumbents and recompute this exercise in Appendix Section K.

[14] Biography can be found at https://psycnet.apa.org/record/2019-58349-005

1968 On the theoretical and technical conceptualization of activity and passivity. Schafer, R. *The Psychoanalytic quarterly*, 1968, 37(2), pp. 173–198

1968 The mechanisms of defence. Schafer, R. *International Journal of Psycho-Analysis*, 1968, 49(1), pp. 49–62

1969 Yale University goes coed.

1970 Requirements for a critique of the theory of catharsis. Schafer, R. *Journal of Consulting and Clinical Psychology*, 1970, 35(1 PART 1), pp. 13–17

1970 The psychoanalytic vision of reality. Schafer, R. *International Journal of Psycho-Analysis*, 1970, 51(3), pp. 279–297

1970 An overview of Heinz Hartmann's contributions to psychoanalysis. Schafer, R. *International Journal of Psycho-Analysis*, 1970, 51(4), pp. 425–446

1972 Internalization: process or fantasy? Schafer, R. *Psychoanalytic Study of the Child*, 1972, VOL.27, pp. 411–436

1972 The psychoanalytic view of reality (I). Schafer, R. *Psyche*, 1972, 26(11), pp. 881–898

1972 The psychoanalytic view on reality (II). Schafer, R. *Psyche*, 1972, 26(12), pp. 952–973

1973 Concepts of self and identity and the experience of separation-individuation in adolescence. Schafer, R. *The Psychoanalytic quarterly*, 1973, 42(1), pp. 42–59

1973 The idea of resistance. Schafer, R. *International Journal of Psycho-Analysis*, 1973, 54(3), pp. 259–285

1974 Problems in freud's psychology of women. Schafer, R. *Journal of the American Psychoanalytic Association*, 1974, 22(3), pp. 459–485

...

On Roy Schafer's "Problems in Freud's Psychology of Women", Fogel (2019) writes:

> "Schafer is extremely critical of Freuds published views on women, and finds them seriously wanting... In 1974 Schafer was well established in the field—an admired and respected thinker, writer, consultant, and teacher. Important at that historical moment was his work at the Yale University Student Health Center

as the university was transitioning from an all-male to a coeducational institution. Second wave feminism was on the march, and psychoanalysis was under scrutiny. Young women at Yale were as yet a significant minority, but many of them were outspoken, newly empowered to question their teachers. Freud and psychoanalysis were prominently included in their inquiry. Challenged by their critique, Schafer listened and learned, and then rose to that challenge—a bold and courageous act at the time... In short, Schafer dropped a bomb on the male-dominated hierarchy that had long overseen classical psychoanalysis—the traditional ego psychology as developed and practiced in America for so many years."

James Franklin Jekel, Emeritus C-E.A. Winslow Professor of Public Health, Yale University[15]

Beginning in 1970, one year after coeducation, Jekel began collaborating with Lorraine Vogel Klerman, an Assistant Professor in Public Health at Yale University, on topics related to gender. Based on historical records, she was already at Yale prior to coeducation since at least 1968.[16] Her research prior to coeducation has focused on gender topics, related to pregnancies and teenage motherhood.

1967 Jekel starts as Assistant Professor at Yale University.

1968 Role of acquired immunity to T. pallidum in the control of syphilis. Jekel, J.F. *Public health reports*, 1968, 83(8), pp. 627632

1969 Yale University goes coed.

1969 Influence of the prevalence of infection on tuberculin skin testing programs. Jekel, J.F., Greenberg, R.A., Drake, B.M. *Public health reports*, 1969, 84(10), pp. 883886

1969 Some problems in the determination of the false positive and false negative rates of tuberculin tests. Greenberg, R.A., Jekel, J.F. *American Review of Respiratory Disease*, 1969, 100(5), pp. 645650

1970 Suicide attempts in a population pregnant as teenagers. Gabrielson, I.W., Klerman, L.V., Currie, J.B., Tyler, N.C., Jekel, J.F. *American journal of public health and the nation's health*, 1970, 60(12), pp. 22892301

1971 A Pilot Program in High School Drug Education Utilizing Non-Directive Techniques and Sensitivity Training. Dearden, M.H., Jekel, J.F. *Journal of School Health*, 1971, 41(3), pp. 118–124

[15]Biography can be found at `https://ysph.yale.edu/profile/jfj2/`

[16]Yale Medicine: Alumni Bulletin of the School of Medicine, 1968-1969. `https://core.ac.uk/download/304683574.pdf`. Accessed on June 30, 2023.

1972 Communicable disease control and public policy in the 1970s–hot war, cold war, or peaceful coexistence? Jekel, J.F. *American journal of public health*, 1972, 62(12), pp. 1578–1585

1972 Pregnancy and special education: who stays in school? Foltz, A.M., Klerman, L.V., Jekel, J.F. *American journal of public health*, 1972, 62(12), pp. 1612–1619

1972 Subsequent pregnancies among teenage mothers enrolled in a special program. Currie, J.B., Jekel, J.F., Klerman, L.V. *American journal of public health*, 1972, 62(12), pp. 1606–1611

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N Effects on Quality of Research

What are the implications of our findings for the quality of research produced by these universities? In this section, we use the citations information in our dataset to speak to this question.

As a proxy for quality, we use the number of citations available in the MAG dataset for each paper and measure the likelihood of a paper becoming a "hit" paper, defined as those in the top 10% of the citations distribution for all publications written in that field and year. Appendix Figure N.1 shows descriptively that gender-related research papers are of higher quality and consistently have a much higher probability of being a hit publication. This suggests that the shift toward gender-related research may have led to an increase in hit publications at the university. Indeed, turning to causal estimates, we find a small but imprecise increase in total number of papers in the top 10% of the field-year citation distribution (Appendix Figure N.2).

Figure N.1: Share of Papers in the Top 10% of the Field-Year Citation Distribution

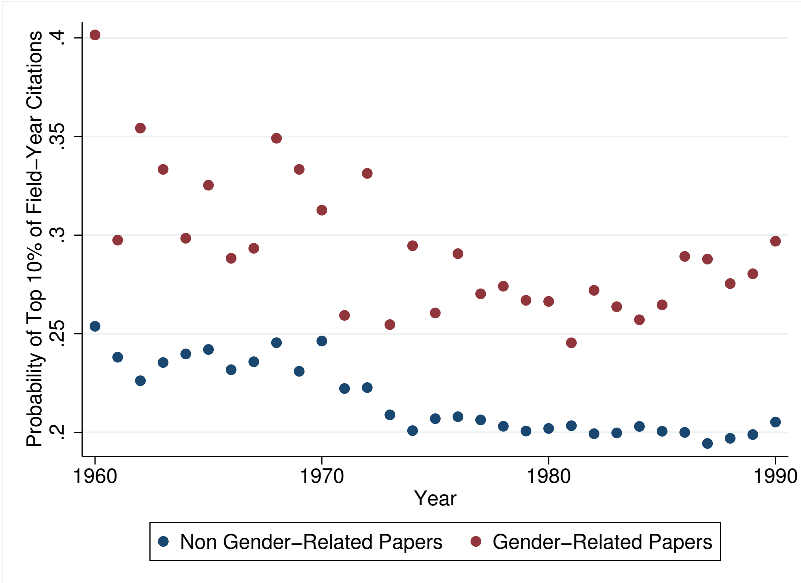
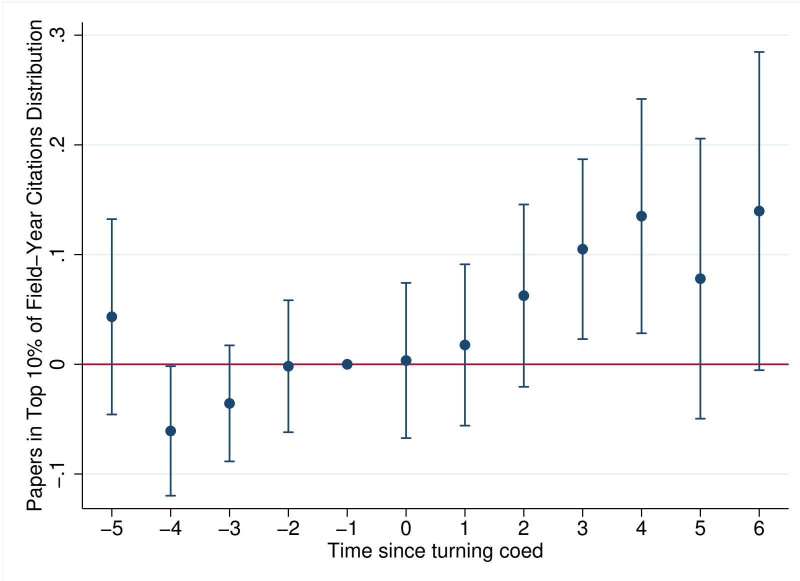


Figure N.2: Effect of Turning Coed on Quality of Research at the School-Field Level



Notes: The figure plots the event time coefficients and their 95% confidence intervals from estimating equation (1) for total number of papers in the top 10% of the citation distribution among papers published in that field and year. The regression includes school-subfield fixed effects, year fixed effects, and discipline-by-year fixed effects. We also control for total publications, total publications with an abstract, and the average abstract length at the school-subfield. The regression is estimated using a conditional fixed-effect Poisson model at the school-subfield-year level. School-subfield groups without variation or less than two observations are dropped from the respective sample in Poisson models. We cluster at the school level.

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