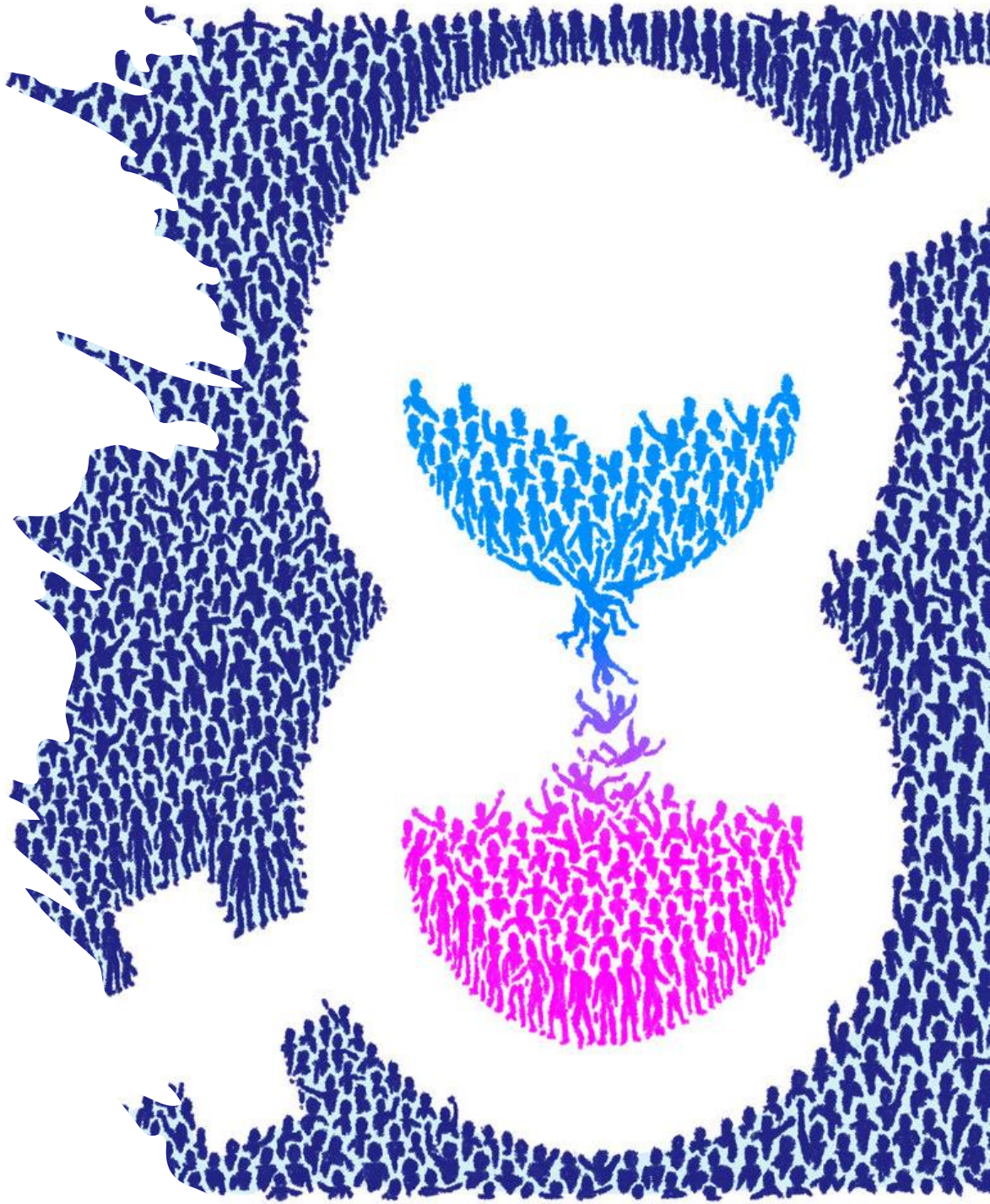
Educated and Alone? How Gender Imbalances in Higher Education Shape the Marriage Market

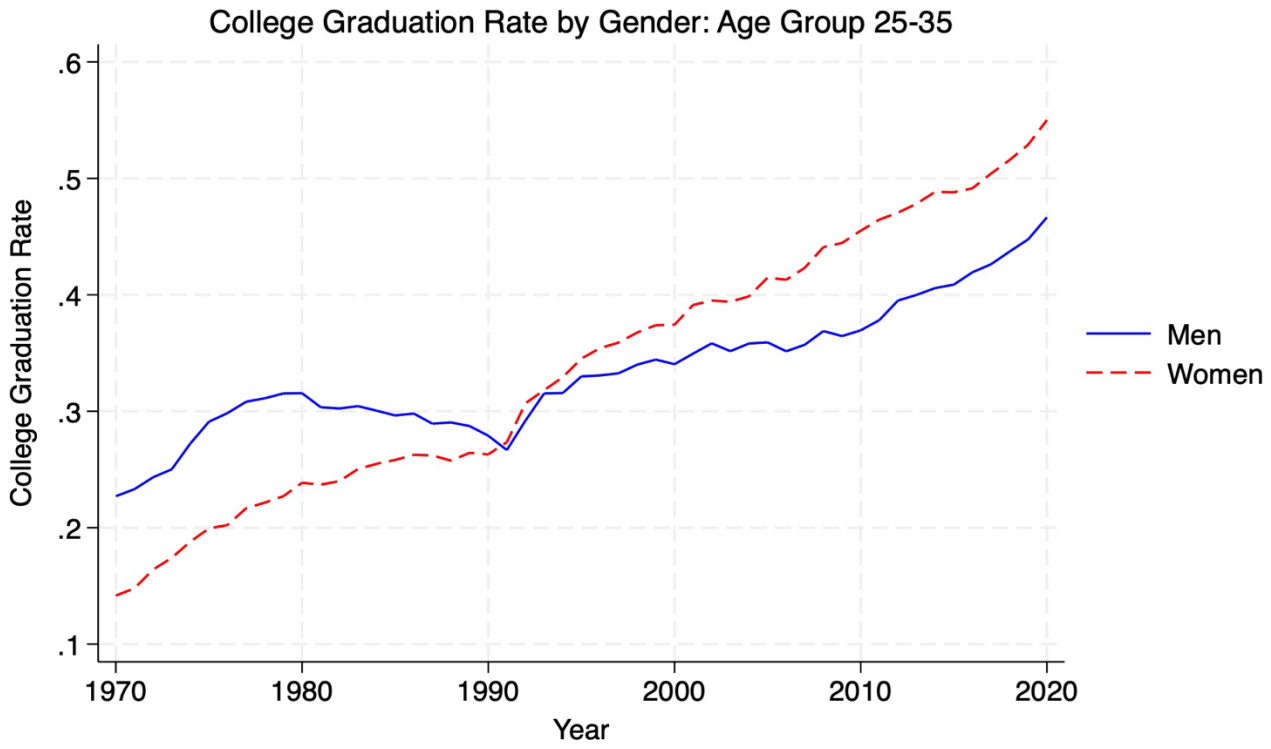
Mahla Shourian, University of Oklahoma

Pallab Ghosh, University of Oklahoma

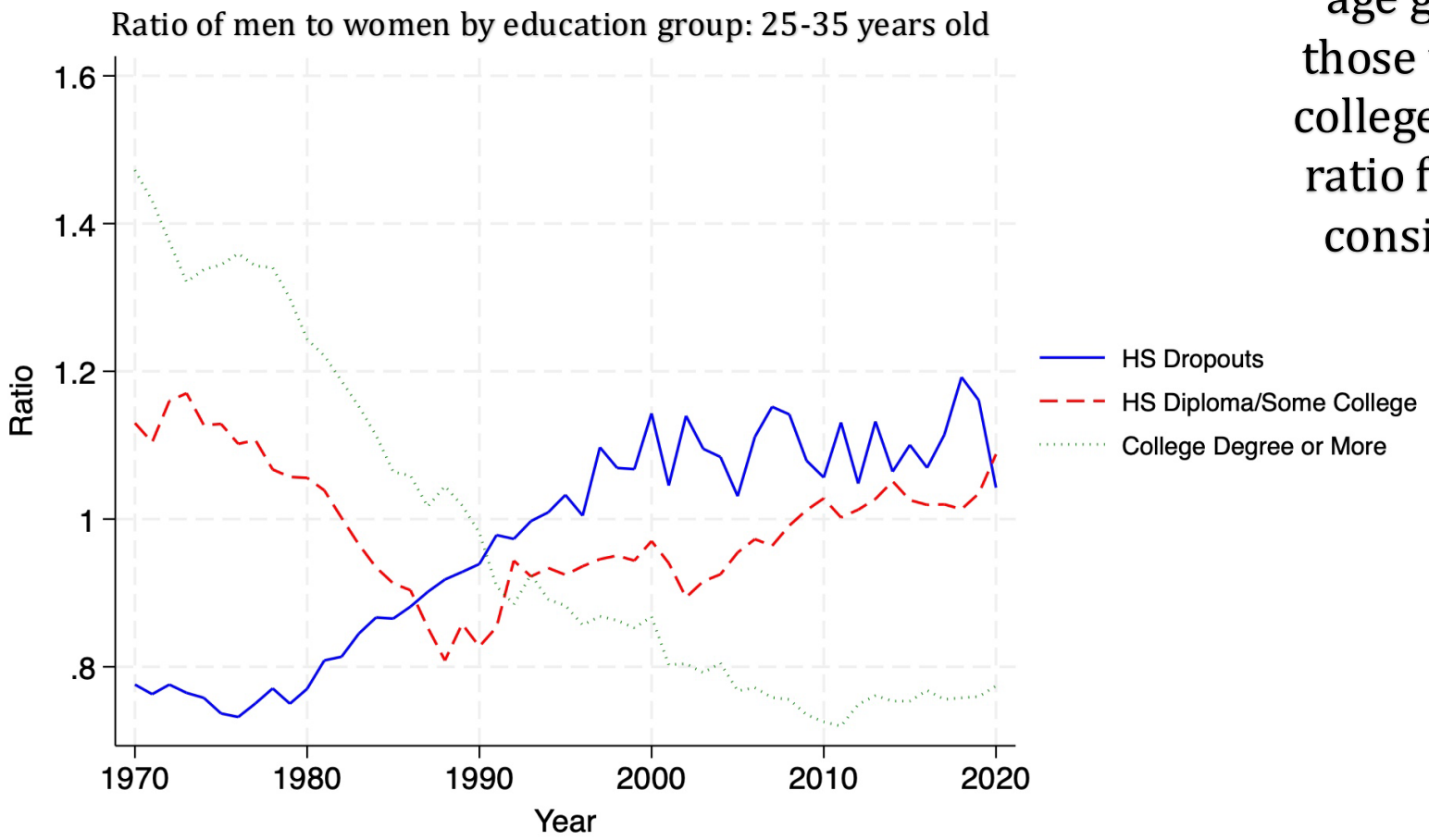


Motivation

1. A Growing Gender imbalance in Educational Attainment



In recent decades, the college graduation rate among men has risen more slowly compared to women, leading to a growing gap in educational attainment.



The ratio of men to women in the 25-35 age group for high school dropouts and those with a high school diploma or some college education has fluctuated, while the ratio for college-educated individuals has consistently decreased since the 1970s.

“The rising gender gap in higher education might turn out to be one of the most transformative trends of our time.”

Justin Wolfers:
The New York Times, 2021

Among 25-34 year-olds, women are more likely to have a degree than men in all 38 countries that are members of the Organization for Economic Cooperation and Development.

2. The Rise in Assortative Mating

That is, people are more likely to marry someone of the same educational level today than in the past.

1. The difference between the actual and random matches in these cells is always positive, reflecting positive assortative mating.

2. the extent of positive assortative mating has become stronger over time.

TABLE 1—ASSORTATIVE MATING, AGES 25–54

1960			2005		
Husband	Wife		Husband	Wife	
	< College	College		< College	College
< College	0.855 (0.821)	0.023 (0.056)	< College	0.545 (0.427)	0.108 (0.226)
College	0.082 (0.115)	0.041 (0.008)	College	0.109 (0.227)	0.237 (0.120)

Statistics Measuring Assortative Mating

$\chi^2 = 33,451$	obs. $= 195,034$	$\chi^2 = 77,739$	obs. $= 288,423$
$\rho = 0.41$	$\delta = 1.08$	$\rho = 0.52$	$\delta = 1.43$

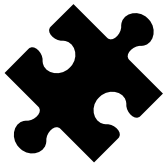
Source: Greenwood, Jeremy, Nezih Guner, Georgi Kocharkov, and Cezar Santos. 2016. "Technology and the Changing Family: A Unified Model of Marriage, Divorce, Educational Attainment, and Married Female Labor-Force Participation." *American Economic Journal: Macroeconomics*, 8 (1): 1–41.

- the fraction of all matches that occur in the specified category.
- (The fraction that would occur if matching occurred randomly.)

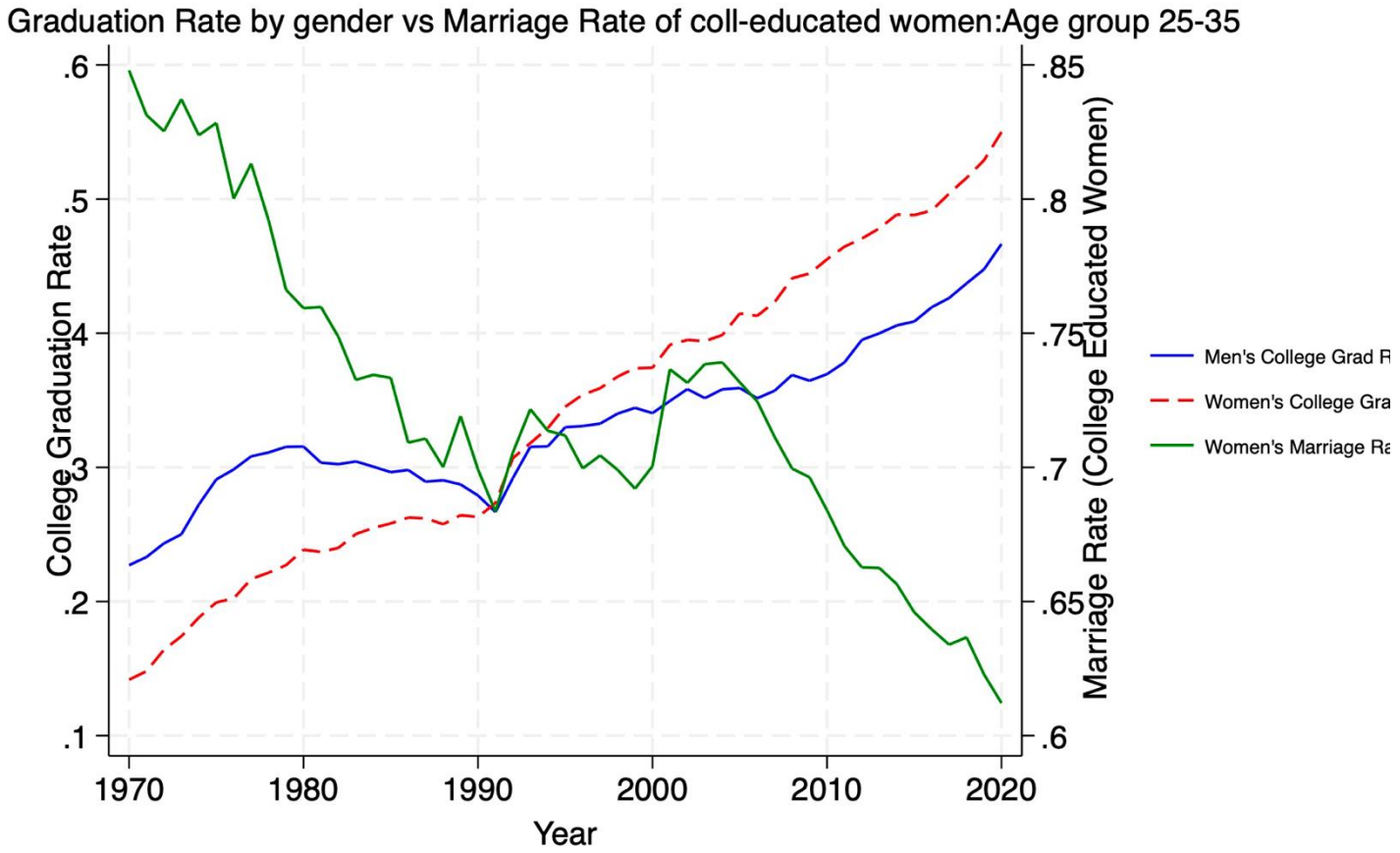
Using data from Germany, Pestel (2021) analyzes how changes in the student sex ratio impact marriage market outcomes for university graduates: a higher own-gender share within the field of study reduces marriage market opportunities for women, while the opposite is true for men.

“A higher share of women in university means that more women are competing for fewer men.”

Question



This research aims to investigate how the decreasing proportion of college-educated men relative to college-educated women affects the marriage rate of college-educated women.



As the pool of "marriageable" men with similar educational attainment shrinks, marriage formation among women with college degrees may be negatively impacted.

Hypothesis

- To establish causality, the analysis will exploit the variation in state funding cuts as an exogenous shock to the cost of higher education.
- The most significant reductions in state funding for colleges happened between 2001 and 2004, with further declines following the Great Recession.
- Reduced state funding often leads to increased tuition fees at public universities.
- We believe that reductions in state funding for colleges leads to a higher reduction in the enrolment/graduation of men compared to women.

- The outcome variable will be the marriage rates of college-educated women, analyzed in relation to the ratio of college educated men to college educated women.

$$Marriage\ Rate\ of\ College\ Educated\ Women = \frac{Number\ of\ married\ college\ educated\ women\ aged\ 25-35}{Number\ of\ college\ educated\ women\ aged\ 25-35}$$

$$Gender\ Ratio\ in\ Higher\ Education = \frac{\frac{Number\ of\ college\ educated\ men\ aged\ 25-35}{Total\ number\ of\ men\ aged\ 25-35}}{\frac{Number\ of\ college\ educated\ women\ aged\ 25-35}{Total\ number\ of\ women\ aged\ 25-35}}$$

Data

- **The Integrated Postsecondary Education Data System (IPEDS)**

  - IPEDS gathers information from every college, university, and technical and vocational institution that participates in the federal student financial aid programs.

  - data on enrollments, program completions, graduation rates, faculty and staff, finances, institutional prices, and student financial aid.

- **Marriage rate data for college-educated women will be drawn from surveys such as the American Community Survey (ACS) and the Current Population Survey (CPS).**

State Level Results

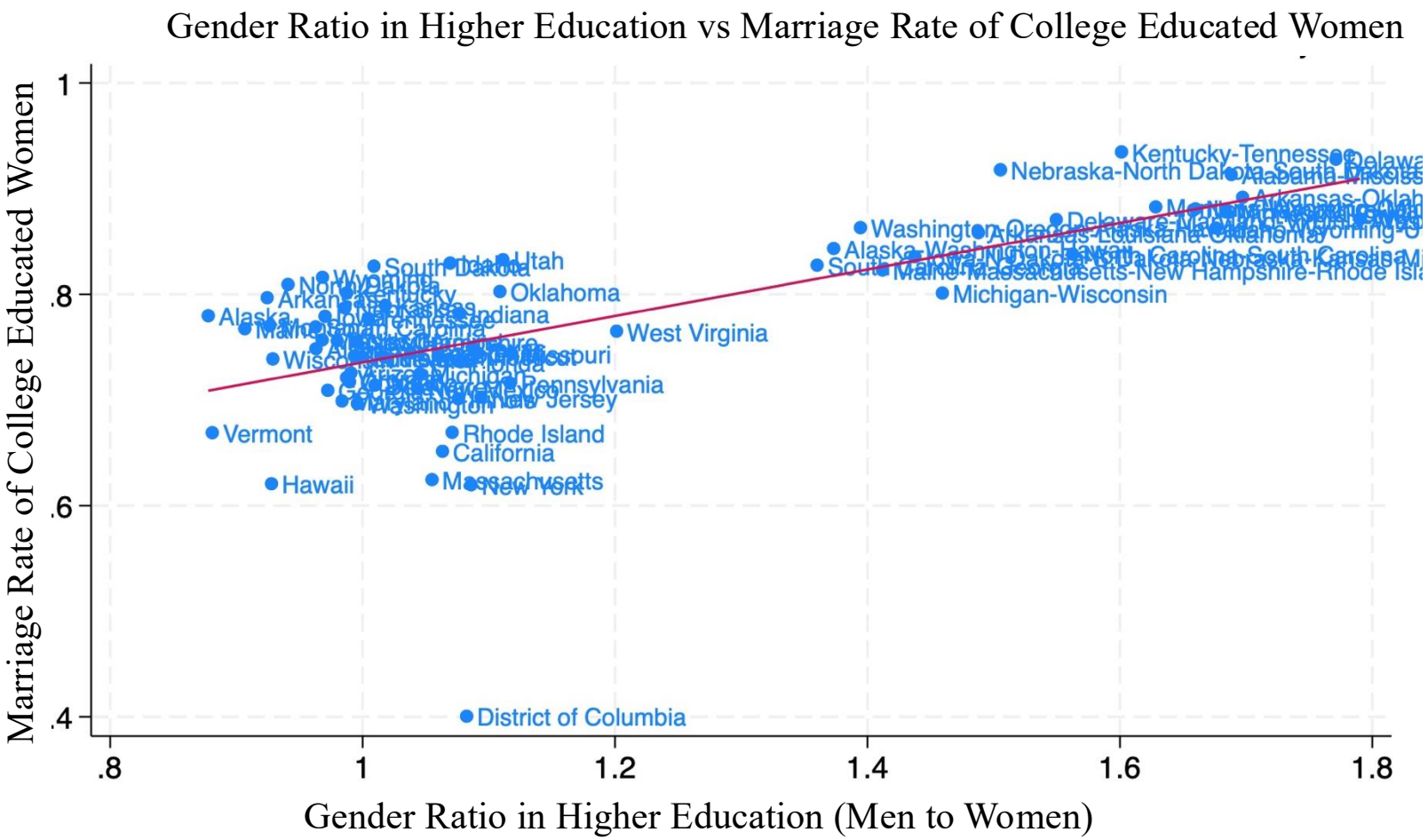


Table 6: Gender Ratio in Higher Education and Marriage and Fertility of Women

VARIABLES	All Women			College Educated Women	
	Marriage Rate	Childbearing Rate	Out of Marriage Childbearing Rate	Marriage Rate	Out of Marriage Childbearing Rate
Gender Ratio	-0.007	0.000	0.007**	0.032***	-0.005
	(0.007)	(0.006)	(0.004)	(0.011)	(0.004)
White Share	-0.023	0.142***	0.054**	0.129**	0.012
	(0.039)	(0.037)	(0.023)	(0.061)	(0.024)
Black Share	-0.359***	0.156***	0.364***	0.049	0.099***
	(0.047)	(0.047)	(0.033)	(0.072)	(0.029)
Unemployment Rate	-0.223***	-0.177***	0.035	-0.259***	0.041
	(0.065)	(0.060)	(0.040)	(0.096)	(0.041)
Women's Employment Rate	-0.233***	-0.166***	0.040***	-0.140***	0.041**
	(0.025)	(0.023)	(0.015)	(0.040)	(0.016)
Poverty Rate	-0.504***	0.050	0.287***	-0.347***	0.140***
	(0.040)	(0.040)	(0.023)	(0.066)	(0.026)
Constant	1.026***	0.640***	-0.149***	0.787***	-0.043
	(0.045)	(0.043)	(0.026)	(0.072)	(0.028)
State FE	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES
Observations	2,091	2,091	2,091	2,091	2,091
R-squared	0.863	0.846	0.85	0.694	0.584

Table 5: Gender Ratio in Higher Education and Marriage Rate of College Educated Women

	Share of College Graduated Married Women								
VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Gender Ratio	0.077***	0.040***	0.066***	0.084***	0.053***	0.0299***	0.047***	0.105***	0.029***
	(0.010)	(0.010)	(0.011)	(0.011)	(0.010)	(0.011)	(0.011)	(0.009)	(0.011)
Age group 25-35 years old									
White Share		0.296***			0.300***	0.129**			0.101
		(0.020)			(0.020)	(0.060)			(0.063)
Black Share		-0.058**			-0.052**	0.038			0.018
		(0.025)			(0.025)	(0.071)			(0.072)
Unemployment Rate			-0.546***		-0.211**	-0.149			-0.054
			(0.113)		(0.100)	(0.093)			(0.119)
Women's Employment Rate			-0.210***						
			(0.038)						
Poverty Rate				-0.130**	0.080	-0.264***			-0.289***
				(0.056)	(0.056)	(0.063)			(0.066)
Gender Wage Gap				0.000***	0.000**	0.000***			0.000***
				(0.000)	(0.000)	(0.000)			(0.000)
State Level Variables									
Population							0.000***		0.000
							(0.000)		(0.000)
Average Personal Income							0.000***		-0.000***
							(0.000)		(0.000)
Unemployment Rate							-0.005***		-0.002
							(0.001)		(0.002)
Poverty Rate							0.000		0.001
							(0.000)		(0.000)
Political Preference Variables									
Democrat Governor dummy								0.002	
								(0.004)	
Ratio of Democrats to the Republicans in the Lower House								0.007***	
								(0.001)	
Fraction of Democrats in state house								-0.217***	
								(0.024)	
Ratio of Democrats to the Republicans in the Uper House								-0.000	
								(0.000)	
Fraction of Democrats in state senate								0.022	
								(0.021)	
Constant	0.650***	0.448***	0.836***	0.644***	0.420***	0.680***	0.721***	0.721***	0.705***
	(0.0102)	(0.0188)	(0.0338)	(0.0167)	(0.0225)	(0.0661)	(0.0121)	(0.0104)	(0.0696)
Year FE	NO	NO	NO	NO	NO	YES	NO	NO	YES
State FE	NO	NO	NO	NO	NO	YES	NO	NO	YES
Observations	2,091	2,091	2,091	2,091	2,091	2,091	2,091	1,999	2,091
R-squared	0.026	0.215	0.043	0.032	0.219	0.695	0.132	0.138	0.697

Next Steps

- **Utilize IPEDS Data**

Leverage the Integrated Postsecondary Education Data System (IPEDS) to examine variations in state funding cuts, treating these as exogenous shocks to the cost of higher education.

- **Conduct Analysis at the Commuting Zone Level**

Perform the analysis at the commuting zone level to capture localized impacts and improve the granularity of results. This approach enables a better understanding of the regional effects of funding cuts on educational and marriage outcomes.