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ABSTRACT

Gender, Perceived Discrimination and the Overruling of Roe v. Wade*

Have the recent changes in reproductive rights changed women's perceptions of discrimination and fair treatment relative to men's perceptions? To address this question, we collected online survey data (N=1,374) during spring 2023 using a randomized design that provided information about the enactment of State antiabortion laws and the overturning of Roe v. Wade by the U.S. Supreme Court to a treatment group but no information to an untreated control group. This exogenous variation in information dissemination was used to analyze perceived fairness and discrimination of treated individuals, by sex. We find that treatment increases women's overall perception of discrimination and unfair treatment in the US by 11.5 percent of a standard deviation and their perception relative to men by 21.8 percent of a standard deviation, widening an already existing gender gap. These results support the notion that the recent state and federal abortion restrictions can impact individuals' perceptions of fairness and discrimination in the U.S. and do so differentially by gender.

JEL Classification:	J15, J16, I,18, K36
Keywords:	state and federal abortion restrictions, gender, perceived discrimination and fairness, rights protection, randomized information treatment

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Significance of the study: Gender, Perceived Discrimination and the Overruling of Roe v. Wade

This study investigates whether the recent state-level abortion bans, coupled with the Supreme Court's overturning of its Roe v. Wade decision, have widened the gender gap in perceived political discrimination. Results from an information treatment experiment suggest that the recent state and federal abortion restrictions have impacted individuals' perception of fairness and discrimination in the US and have done so in opposite directions by gender. As the increased restrictions on abortion rights represent a decrease in women's reproductive rights, our primary hypothesis is that information about the state abortion bans and the Supreme Court's overturn of Roe v. Wade in June 2022 will generate a gender-differential response regarding perceived fair treatment among individuals in the US. We find that men and women have responded in opposite ways to information on the recent state and federal abortion restrictions. On the one hand, men have moderated their strong disagreement on the existence of perceived discrimination, which may be a consequence of the treatment making them aware that, compared to women, they are not as likely to be treated as unfairly. On the other hand, the treatment increases women's feelings of discrimination both in absolute terms and relative to that of men. Our findings are particularly policy relevant as they support a change in women's and men's perception of political discrimination, especially among low- to middle-income young urban populations. To the extent that the outcome of the 2024 Presidential elections may depend on both the youth and female vote, our findings support the media narrative of how the overturn of Roe vs. Wade decision may increase young women's electoral participation and support of the Democratic ticket in the Presidential election in November 2024.

1. Introduction

Recent state-level abortion bans, coupled with the Supreme Court's decision in the case Dobbs v. Jackson Woman's Health, overturning its 1973 Roe v. Wade decision which recognized the constitutional right to abortion, have raised concerns that such restrictions will change the trajectory of virtually every woman's life. These restrictions are feared to impact women's health, fertility, family-formation decisions, education, labor force participation, occupation, earnings, victimization of violence from domestic partners, and maternal deaths based on the results of papers relying on variation induced by: (1) expansion of access to abortion in the early 1970s (Levine et al. 1999; Myers 2017; Angrist and Evans 2000; Farin *et al.* 2021; Kalist 2004; Oreffice 2007; González *et al.* 2018; Abboud 2019; Jones and Pineda-Torres 2024); (2) recent state abortion bans (Dench, Pineda-Torres and Myers 2024); and (3) targeted regulations of abortion providers (Lindo and Pineda-Torres 2021; Muratori 2022). Because women's physical and economic well-being is directly affected by such restrictions, their perception of being discriminated against and/or treated unfairly by other individuals and the government is likely to be impacted as well. Indeed, Räsänen, Gothreau and Lippert-Rasmussen (2022) argue that banning abortion is directly discriminatory against women in general. To examine perceptions related to the reversal of Roe v. Wade, several studies have analyzed social media data around the time Roe v. Wade was overruled and found that the majority of tweets expressed predominantly negative sentiments (Ujah 2023; Mane et al. 2022). Their focus has been on temporal, geographical, and racial sentiment patterns in the public's reaction, but they have not investigated a gender dimension. Other studies have used surveys to analyze the relationship between knowledge and sentiment regarding Roe v. Wade and whether this relationship is moderated by political affiliation and abortion identity (Crawford et al. 2021) or how it applies to the US Latinx population (Solon et al. 2022). The current paper adds to this literature by focusing on gender differences.

According to Aixen (1991), attitude and opinion, together with perceived control and contextual subjective norms, shape behavioral intention and subsequent behavior (Altshuler, Storey, Prager 2015). Indeed, Oskooii (2020) finds supportive empirical evidence that peoples' perception of systemic political discrimination is significantly associated with their participation in various sociopolitical mainstream activities. At the same time, the extant literature has shown that discriminatory practices based on race, ethnicity, religion or sexual orientation are associated with feelings of inferiority, insecurity, powerlessness and depression (Almeida *et al.* 2009; Banks, Kohn-Wood, and Spencer 2006; Branscombe, Schmitt, and Harvey 1999; Cano *et al.* 2016; Dion and Earn 1975; Hodge, Zidan, and Husain 2015; Noh and Kaspar 2003; Padela and Heisler 2010). Taking this into consideration, to the extent that the recent restrictions on reproductive health laws in the US have changed perceptions of discrimination, fair treatment and or rights protection (hereafter, perceived discrimination) of women relative to men, they are likely to have consequences not only for women's mental health but also their socio-political behavioral responses. For

this reason, it is important to investigate whether the recent state abortion bans and the overturning of Roe v. Wade has changed women's perceptions relative to men of being discriminated upon either by other individuals or their government.

To explore this, we collected online survey data at an urban broad-based racially- and ethnically-diverse university during spring 2023 (N=1,374) and randomized information treatment on the policy shift on abortion occurring in state legislatures and the Supreme Court reversal of Roe v. Wade. As the increased restrictions on abortion rights represent a decrease in women's reproductive rights, our primary hypothesis is that information about the new policy will generate a gender differential response regarding individuals' perceived discrimination in the US. We used a randomized information treatment providing information about the enactment of antiabortion laws and the overturn of Roe v. Wade to the treatment group, and analyzed changes in perceived discrimination of treated individuals relative to an untreated control group by sex.

We find that information treatment changes individuals perceived discrimination relative to an untreated control group and that it does so differentially by sex. More specifically, the treatment increases women's overall perception of discrimination and unfair treatment in the US by 11.5 percent of a standard deviation and their perception relative to men by 21.8 percent of a standard deviation, widening an already existing gender gap.[1] Both estimates are statistically significant at the 5% level or better.

Interestingly, we find that men and women respond in opposite ways to information on the recent state and federal abortion restrictions. On the one hand, men moderate their strong disagreement on the existence of perceived discrimination. Men's reaction may result from the treatment making them aware that, compared to women, they are not as likely to be discriminated against. On the other hand, the treatment increases women's dissent relative to that of men. In contrast with perception studies, which mostly focus on racial concerns or broadly on the Supreme Court's decision (Crawford et al. 2021; Solon et al. 2022; Mane et al. 2022; Ujah 2023), we directly test whether being provided with information on the policy shift changes women's perceptions of discrimination relative to those of men. Furthermore, by using a randomized information treatment, we are able to measure the causal effect as opposed to capturing correlations.

2. Materials and Methods

Our unique sample of 1,374 urban college students was drawn from the City University of New York (CUNY), the largest urban public university in the United States, and a major provider of social mobility

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[1] Women in the control group are 17.4 percent of a standard deviation more likely than men to strongly perceive discrimination in the US.

in the country (U.S. News & World Report 2023). Students in our sample responded to an online survey created on the Qualtrics platform and fielded between April 5 and June 21, 2023. We oversampled economically vulnerable students. IRB approval (IRB file #2020-0475) was granted on July 21, 2020 and amended on March 28 2023 to collect the data, and the trial was registered with AEA RCT (RCT ID: AEARCTR-0012105). All subjects in the survey were 18 years old or older and provided informed consent.

While this sample is not representative of the US population or the population in states that have recently banned abortion, it represents a younger, more female, racially diverse, vulnerable and urban population which *a priori* is more likely to be more supportive of a Democrat president. Hence, studying a population that Democrats need to mobilize to win the 2024 presidential election, and hope to do so based on the Republican push for a reduction on reproductive-health rights, is highly relevant in the current political context. At the same time, our sample is a convenience sample of the population (i.e. young, low-income women[2]) that is more likely to suffer the consequences of abortion bans and who would be less likely to be able to afford to travel to other states for abortion if abortion was banned in their state. In this framework, our sample is especially appropriate to explore the topic under analysis. Finally, to the extent that our experiment took place in a state (New York) where abortion rights are still protected, the results of our experiment might well be a conservative test. To put it differently, if we find such results in New York, we might be even more likely to find results in Republican-led states that have already adopted abortion bans.

Study Overview. We randomly exposed about one fourth of the survey respondents to a short paragraph about the recent reduction in abortion rights across the US, followed by four questions aiming at measuring their perception of fair treatment, rights being respected, and discrimination in the United States. The experimental text stated: "*Abortion rights and access have undergone a seismic shift in the United States in the past couple of years. In 2021, state lawmakers across the country proposed 663 restrictions to rights and access, including enacting 108 antiabortion laws in 19 states. In June of 2022, the Supreme Court, representing a newly 6-3 conservative majority, overturned Roe v. Wade.*"

Another fourth of the respondents were assigned to the control group and did not receive any prompt. To rule out that the findings of this information treatment might have resulted from the prompt itself instead of the information on the restriction of abortion rights, we randomly assigned the remaining half of the survey respondents to one of two placebo groups, with prompts that did not underscore a reduction of civil rights but instead presented either neutral information on the US unaffected by the government or a public

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[2] In the Table 2, we observe that over two thirds of the sample are women. A similar proportion of respondents are low income. This is also discussed in the descriptive statistics sub-section.

policy that would impact both men and women in a similar way. More precisely, the two placebo groups received the two prompts below, with each group comprising one fourth of the total sample:

- *Population of the U.S. grew by 1.4 percent between 2018 and 2020.*
- *The Fed* (Federal Reserve) *is expected to continue its policy of raising interest rates to slow economic growth and bring inflation under control. Even though jobs are plentiful, and wages are rising, the Fed's aggressive policy risks slowing down the labor market. Fanny Mae estimates that the unemployment rate will increase from 3.6% at the end of 2022 to 5.4% by the end of 2023.*

Subsequently, respondents were asked about their perception of fair treatment, rights being respected, and discrimination in the United States by responding with whether they *strongly disagree (0), somewhat disagree (1), somewhat agree (2), or strongly agree (3)* with the following four statements[3]:

1. *The US is a place where people are usually treated fairly no matter what background they come from.*
2. *The US is a free country where everyone's rights are respected, no matter what their background is.*
3. *In the US today, people like me are discriminated against.*
4. *The Government in the US treats people like me fairly.*

Measures of Perceived Discrimination and Fair Treatment. To measure whether respondents perceived that people like them are treated fairly and their rights respected, we first created a variable, Y_k, for each of the k statements that is equal to 1 if the individual responded to the statement with a negative response (that is, strongly or somewhat disagrees for statements 1, 2, and 4 above; but strongly or somewhat agrees for statement 3); and 0 if the individual responded in any other way. Using these four created variables, Y_k, we then constructed a summary index variable, Y^*, measuring perceived discrimination as the unweighted average of all standardized individual's response for each of the four statements. We reversed the polarity of Q3 to be consistent with the other three questions, resulting in an index variable where a *higher* value indicates a *higher* level of perceived discrimination. Standardization of each individual perceived discrimination variable, Y_k, is done by subtracting the mean, μ_k, and dividing by the standard deviation, σ_k, of that variable for individuals in the control group as follows:

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[3] These questions, measuring perceived discrimination/fair treatment/rights protection, were drawn from the Longitudinal Study of Young People in England (LSYPE), a large-scale panel survey, managed by the Department for Education (DfE) of the United Kingdom Government.

$$Y^* = \frac{\sum_k Y_k^*}{k} \qquad \text{where} \qquad Y_k^* = \frac{Y_k - \mu_k}{\sigma_k}$$

where Y_k^* is the standardized version of Y_k. Importantly, since we analyze multiple outcomes (four outcomes for men and women), the use of summary index variables also addresses the concern that an increase in the number of tests increases the likelihood of rejecting the null hypothesis using traditional inferential techniques. Summary indices are a common method to adjust for multiple hypothesis testing,[4] and, in addition, their use offers a broad snapshot of our results' overall patterns.

To test the robustness of our results, we also constructed two additional index variables, Y^*. The first of these indices measures disagreement of each of the four k statements, with a continuous variable, Y_k, ranging from 0 to 3, with higher values representing a higher perception of discrimination and unequal treatment based on background in the U.S. The second summary index, Y^*, is constructed such that, for each of the k statements, Y_k equals to 1 if the individual responded with the most negative response (strongly disagrees for statements 1, 2, and 4; or strongly agrees for statement 3); and 0 if the individual responded in any other way.

Control Group Individual Outcomes & Gender Gap in Perceived Discrimination. Table 1 presents measures of perceived discrimination for the control group. It reveals that between half and two thirds of control group members feel discrimination, with women feeling it more strongly so. Column 1 in Panel A in Table 1 summarizes each of the four statements for individuals in the control group. We observe that between 64 and 67 percent of individuals in the control group perceive that people in the US are usually treated unfairly, their rights are not respected, and they are discriminated against based on their background. In addition, 56.5 percent of individuals in the control group believe the US government does not treat people like them fairly.

Columns 2 to 3 in Panel A show gender averages and differences for each of the four statements. Columns 2 to 3 in Panel B and C present estimates using the three different index variables as explained above. Focusing on Panel A, we observe that while men in the control group are less likely to perceive being discriminated against than women and to say that people are treated unfairly based on their background, these gender differences are not statistically significant. However, there is a 9-percentage point statistically significant gender difference, with women more likely than men to say that rights are not respected in the US; and when the index measures strong disagreement of perceived fair treatment

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[4] See Kling, Liebman, and Katz 2007; Rodríguez-Planas 2012 and 2017, among others.

protection in the US (shown in Panel C), the gender gap is statistically significant at the 5% level. Based on this last measure, women in the control group are 17.4 percent of a standard deviation more likely than men to strongly disagree on the existence of perceived fair treatment in the US. Consistent with this, the index variable, Y^*, in Panel B of Table 1 shows that women in the control group have a larger index than men in the control, yet the difference is not statistically significant.

Baseline Descriptive Statistics. The survey also collected individuals' self-reported information about whether they were the first in their family to go to college and whether she is responsible for a child or younger sibling at home. This information was complemented with the following socio-demographic information from administrative records: sex, race, age, Pell status, low-income status, undocumented-student status, international-student status, transfer students, graduate- versus undergraduate-student status, and whether the student is enrolled in a 2- or 4-year degree if enrolled in an undergraduate degree.

Consistent with other higher-education survey data (Rodríguez-Planas 2022; Aucejo *et al.* 2020), Table 2 shows that women are considerably more likely to respond to the survey than men, with nearly 70 percent of respondents in our sample being female. Our sample is racially diverse with more than a third of respondents being Hispanic, a quarter of them being Black, and about a fifth of them being Asian. Indeed, our sample is more racially diverse than other Hispanic-Serving Institutions in the US. Our sample also has a high share of Pell recipients (around two-thirds) and first-generation students (over 50 percent), which reflects CUNY's affordability, consistently ranked as a top college for social mobility in the US.

Moving to socio-demographic differences across sex, the remaining columns in Table 2 show that men's and women's socio-demographic characteristics are largely similar, with women in our sample being more likely to be Pell grant recipients or the first in their family to go to college and less likely to be in graduate school. Also, a smaller share of women is Asian and a larger share Black as compared to the share of men.

Evaluation Framework. We report treatment effects for men and women using the following regression equation:

$$Y_i = \alpha_0 + \beta_1 Female_i + \beta_2 Treatment_i + \beta_3 (Female_i * Treatment_i) + \beta_4 X_i + \varepsilon_i \qquad (1)$$

where Y_i is a summary index variable measuring individual *i*'s perceived discrimination in the U.S. *Female_i* is a dummy for whether an individual is reported as female. *Treatment_i* is a dummy equal to 1 if the individual is in the treatment group and so was given the prompt about abortion policy changes and equal to 0 if the individual is in the control group. X_i is a vector of individuals' socio-demographic characteristics.

As overturning Roe vs. Wade represents a decrease in women's reproductive rights, our focus is on whether the information treatment generates a gender-differentiated response regarding individuals' perceived discrimination in the US. Hence, our main coefficient of interest is that of the interaction between $Treatment_i$ and the female indicator, that is, β_3. A positive and significant estimate of β_3 would suggest that receiving information on the restriction of abortion rights is associated with greater perception of discrimination among women relative to men, widening the gender gap in perceived discrimination. Note also that the coefficient β_2 captures the effect of receiving information on the restriction of abortion rights on men's perceived discrimination, while $(\beta_2 + \beta_3)$ is the (absolute) effect of receiving information on the restriction of abortion rights on women's perceived discrimination.

Balance Tests between Treatment and Control Groups. Randomization was well done, as shown in the balance tests displayed in columns 3, 8 and 11 of Table 2. Indeed, there are no statistically significant differences between the treatment and control groups. Furthermore, the balance tests by sex also show that there are no significant differences between treated and control group females nor between treated and control group males.

3. Results and Discussion

Main Findings. Panel A of Table 3 presents the results using the main index, Y^*. Focusing on the differential effect of the treatment on women's perceived discrimination, column 1 of panel A reveals that $\widehat{\beta_3}$ is positive and statistically significant at the 5% level, suggesting that receiving information on the recent reduction of abortion rights in the US increases the share of women relative to men who perceive being discriminated against in the US. More specifically, being in the treatment group increases women's perceived discrimination by 21.8 percent of a standard deviation relative to the effect it has on men. Importantly, the absolute effect of receiving information on the restriction of abortion rights on women's perceived discrimination, captured by $\widehat{(\beta_2 + \beta_3)}$, is also positive and statistically significant at the 5% level. It reflects that receiving information on the reduction of abortion rights increases the overall share of women who perceive discrimination by 11.5 percent of a standard deviation.

To explore if these results are driven by any particular racial or ethnic group, columns 2 to 6 re-estimate the results by dropping one racial or ethnic group at a time. If the estimates become smaller in size and lose statistical significance when excluding one racial group, it would imply that this group is driving the results.[5] Columns 3-6 show estimates that are consistent in sign and size with column 1, but lose

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[5] The information treatment was not designed to have sufficient power to conduct racial/ethnic analysis for each of the four racial/ethnic groups. Nonetheless, by dropping one group at a time we can still see which of these groups is driving the results.

significance when we exclude Black, Hispanic, or white respondents from the analysis, underscoring that the results are driven by these three racial or ethnic groups.

Asians and International Students. In contrast, both the gender differential and absolute treatment effects for women are larger in column 2 after excluding Asian students. When Asians are excluded from the analysis, we find that receiving information on the recent reduction of abortion rights in the US increases women's overall perceived discrimination by 16.6 percent of a standard deviation and their perception relative to the men by 34.5 percent of a standard deviation. Both estimates are statistically significant at the 5% level or better. Similar results are obtained if one excludes international students, suggesting that Asian students and international respondents are not driving the results.[6] As international students come from different countries with different rights and views on abortion rights, it is plausible that they may be less affected by the reduction of abortion rights in a country different from the one they were born and have their family living in. As for Asians, there is an extensive literature (Sakamoto, Kim, Takei 2012) that suggests that Asians tend to prioritize community rights versus individual rights. Moreover, Appendix Table A.2 shows that 45 percent of Asians in our sample are international students, relative to only 14 percent of non-Asian students. Interestingly, Asians also have a larger representation of men relative of the rest of the sample (43 percent vs only 28 percent), are more likely to be younger than 23 years old and poorer than non-Asian respondents.

Discrimination vs Fair Treatment vs Right Protection. The subsequent panels of Table 3 present estimates of equation (1) using as the left-hand-side variable each of the four Y_k variables. Focusing on the results where Asians are excluded from the sample reveals significant absolute treatment effects $(\widehat{\beta_2} + \widehat{\beta_3})$ for women for the first three statements, with the largest effect coming from statement 3 regarding discrimination (shown in column 2). Furthermore, the differential treatment effect is significant for both statements dealing with fair treatment by the people and the government. Consistent with earlier findings, individual statements also have significant differential or absolute treatment effects for women in some of the other columns such as columns 4 and 6, which drop international students. Excluding international students also reveals significant relative treatment effects on perceptions of unfair treatment and an absolute treatment effect on discrimination for treated women.

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[6] Appendix Table A.2 shows that the balance tests continue to hold after dropping Asian students or international students.

Placebo Tests. To rule out that these findings result from the prompt itself as opposed to the information on the restriction of abortion rights, panel A of Table 4 presents estimates replacing treated respondents with those who were given the prompt "*Population of the U.S. grew by 1.4 percent between 2018 and 2020*" and panel B showing those who were given a prompt about the Federal Reserve raising interest rates. The analysis is done separately by race or ethnic group as in Table 3. Comparing the estimates to those in Panel A of Table 3, we observe that the placebo estimates are considerably smaller in size and not statistically significant, suggesting that our findings for the overall sample and the non-Asian population are driven by respondents' receipt of information on the recent state and federal restrictions on abortion rights.

Other Index Variables. To see the changes in the intensity of responses, Appendix Table A.4 shows the results for the other two index variables of perceived discrimination. Panel A uses the index constructed using the continuous measure (0-3) of individual responses and Panel B is constructed with the individual's most negative responses. Consistent with our main findings, both the absolute treatment effect for women as well as the gender differential treatment effect continue to be positive and significant with either alternative index variables, reflecting that female overall and relative perceptions of discrimination increase after the treatment. For example, using the whole sample and continuous measure of discrimination (column 1, Panel A), the treatment increases women's overall perception of discrimination by 18.2 percent of a standard deviation and their perception relative to men by 39.7 percent of a standard deviation.

Interestingly, with these alternative indices of discrimination, $\widehat{\beta_2}$ becomes larger in size and statistically significantly different from zero. As $\widehat{\beta_2}$ has a negative sign, it indicates an opposite treatment effect for men than for women. For example, in contrast with the treatment's impact on women's overall perception of discrimination—an 18.2 percent *increase* of a standard deviation—, treated men's overall perception of discrimination *decreases* by 21.5 percent of a standard deviation (column 1, Panel A). Panel B further reveals that men's decrease in overall perception of discrimination is driven by men moving away from strongly disagreeing (or strongly agreeing for statement 3). Since they do not significantly move from disagreeing to agreeing overall (Panel A in Table 3), these results show the treatment moderating their men's disagreement rather than changing it to agreement. Men's self-restraint may result from the treatment making them aware that, compared to women, they are not as likely to be treated as unfairly or discriminated against.

4. Conclusion

Using an online survey of urban college students during spring 2023, we studied how exogenous variation in the receipt of information on the restriction of abortion rights by State lawmakers and the US Supreme Court affected students' perceived sense of discrimination and fair treatment in the US. We used a

randomized information treatment that provided information about the enactment of antiabortion laws and the overturn of Roe v. Wade to analyze changes in perceived discrimination/fair treatment/rights protection of treated students relative to an untreated control group. We find that men and women respond in opposite ways. On the one hand, men moderate their disagreement with the existence of perceived discrimination in the US. Men's self-restraint may result from the treatment making them aware that, compared to women, they are not as likely to be treated as unfairly or discriminated against. On the other hand, the treatment increases women's dissent in absolute terms and relative to that of men. These results are driven by both Blacks, Hispanics, and white. In contrast, Asian respondents are unaffected by the information on the reduction of abortion rights in the US, which is consistent with the literature (Sakamoto, Kim, Takei 2012) suggesting that Asians tend to prioritize community rights more than individual rights. Overall, the results support the notion that the recent state and federal abortion restriction can impact individuals' perception of fairness and discrimination in the US and do so differentially by gender. These results are consistent with Tankard and Paluck (2017) and Clark and Paluck (2022) who find that while personal opinions do not change in the wake of a Supreme Court decision, perceptions of social norms do. Our findings are particularly policy relevant, as they support a change in women's and men's perceptions of political discrimination, especially among young low- to middle-income urban populations. To the extent that the outcome of the 2024 Presidential elections may depend on both the youth and female vote, our findings support the media narrative of how the overturn of Roe vs. Wade may increase young women's electoral participation and provide support to the Democratic ticket in the November 2024 Presidential election.

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Table 1: Societal Cohesion for Control Group by Sex

Panel A:	Percent with Negative View				
Statement	All	Female	Male	Diff.	English Students[a]
People treated fairly in US no matter background	67.6	69.2	64.1	5.1 (5.2)	46
Rights respected in US no matter background	64.1	66.9	58.0	8.9* (5.3)	40
People like me are discriminated against	67.1	66.9	67.5	−0.6 (5.2)	55
US government treats people like me fairly	56.5	58.5	52.1	6.4 (5.5)	21
Panel B:		Mean (Std. Dev.)		Diff.	
Index Variable					
Disagree vs Agree	−0.010 (0.674)	0.025 (0.685)	-0.084 (0.644)	0.109 (0.075)	
Panel C:					
Continuous Cohesion Index	−0.014 (0.993)	0.041 (1.024)	-0.134 (0.912)	0.174 (0.110)	
Strongly Disagree vs Rest	−0.009 (0.789)	0.045 (0.813)	-0.129 (0.722)	0.174** (0.087)	

Note: Significant difference between males and females at 10(*), 5(**), or 1(***)% level. The *Diff.* column reports the coefficient (and standard deviation in parenthesis below) from regressing the dependent variable for each row on a female dummy. Sample sizes for are N=376 for the whole control group, N=258 for females in the control group, and N=118 for males in the control group. The three index variables are averages of variables for each of the four statements which are individually standardized using the means and standard deviations for the control group.
[a] From a survey of 17-18 year-old students in England. Source: Demack, Sean et al., 2010. Young People and Community Cohesion: Analysis from the Longitudinal Study of Young People in England (LSYPE). Project Report. Sheffield Hallam University

Table 2: Socio-demographic Characteristics at Baseline and Balance Test

Variable	Treatment Mean	Control Mean	Diff	QC[a]	Hispanic SIs[b]	Females T Mean	Females C Mean	Females Diff	Males T Mean	Males C Mean	Males Diff
Female	0.691	0.687	0.003 (0.035)	0.541							
Asian	0.218	0.206	0.012 (0.031)	0.308	0.083	0.197	0.157	0.04 (0.035)	0.265	0.316	-0.05 (0.063)
Black	0.272	0.271	0.001 (0.034)	0.088	0.090	0.294	0.306	-0.012 (0.042)	0.224	0.193	0.032 (0.056)
Hispanic	0.358	0.369	−0.011 (0.037)	0.289	0.490	0.344	0.384	-0.04 (0.044)	0.388	0.333	0.054 (0.066)
White	0.133	0.13	0.003 (0.026)	0.233	0.246	0.138	0.125	0.012 (0.031)	0.122	0.14	-0.018 (0.047)
Other Race	0.019	0.024	-0.005 (0.011)	0.082		0.028	0.027	0 (0.015)	0	0.018	-0.018 (0.013)
Younger than 23	0.522	0.492	0.03 (0.038)	0.680		0.516	0.467	0.049 (0.046)	0.535	0.547	-0.012 (0.068)
Poor	0.406	0.417	-0.011 (0.038)			0.394	0.424	-0.03 (0.045)	0.434	0.402	0.033 (0.068)
Pell	0.661	0.683	-0.022 (0.036)	0.481[c]		0.706	0.722	-0.015 (0.042)	0.561	0.596	-0.035 (0.068)
International Student	0.2	0.209	-0.009 (0.031)			0.217	0.195	0.023 (0.037)	0.162	0.239	-0.078 (0.055)
First in College	0.509	0.539	-0.029 (0.038)	0.358[c]		0.541	0.562	-0.022 (0.046)	0.439	0.487	-0.048 (0.069)
Transfer	0.231	0.268	-0.037 (0.033)	0.229		0.229	0.255	-0.026 (0.04)	0.235	0.298	-0.064 (0.061)
Has Child at Home	0.35	0.378	-0.027 (0.038)			0.365	0.385	-0.021 (0.047)	0.319	0.361	-0.042 (0.067)
2-Year School	0.415	0.401	0.013 (0.038)			0.413	0.388	0.025 (0.045)	0.418	0.43	-0.011 (0.068)
4-Year School	0.519	0.531	-0.012 (0.038)			0.528	0.565	-0.037 (0.046)	0.5	0.456	0.044 (0.069)
Grad. School	0.066	0.068	-0.001 (0.019)			0.06	0.047	0.013 (0.021)	0.082	0.114	-0.032 (0.041)

Note: Significant at the 10(*), 5(**), and 1(***)% level. Sample sizes are N=697 for the whole group, N=479 for females, and N=218 for males.

[a] From Fall 2021 Enrolled Student Profile table for undergraduates at QC. Source: https://public.tableau.com/app/profile/qc.oie/viz/1_CollegeProfile-EnrolledStudents/EnrolledStdntProfile

[b] Hispanic Serving Institutions (HSIs) are colleges and universities with Hispanic populations at least 25% of undergraduate students. Enrollment at HSIs by race is from 2019 report from American Council on Education. Source: https://www.equityinhighered.org/wp-content/uploads/2019/02/Race-and-Ethnicity-in-Higher-Education.pdf

[c] From summer 2020 sample (N = 3,163) of Queens College students (Rodríguez-Planas 2022a).

Table 3: Main Results of Treatment Effect on Societal Cohesion

	All	Excluding Asians	Excluding Blacks	Excluding Hispanics	Excluding Whites	w/o International Students
Panel A: Average of 4 Statements						
Female	0.040	0.038	−0.050	0.081	0.050	0.025
	(0.072)	(0.085)	(0.081)	(0.093)	(0.081)	(0.082)
Treatment	−0.103	−0.179	−0.106	0.001	−0.119	−0.147
	(0.094)	(0.110)	(0.108)	(0.117)	(0.103)	(0.104)
Treatment*Female	0.218**	0.345***	0.211	0.117	0.192	0.254**
	(0.110)	(0.128)	(0.130)	(0.137)	(0.122)	(0.123)
Treatment + Treatment*Female	0.115**	0.166**	0.105	0.118*	0.073	0.107*
	(0.058)	(0.064)	(0.071)	(0.070)	(0.064)	(0.065)
Observations	697	541	501	437	597	555
Adjusted R^2	0.088	0.075	0.084	0.116	0.079	0.084
Panel B: The US is a place where people are usually treated fairly no matter what background they come from						
Female	0.033	−0.117	0.0002	0.133	0.042	−0.051
	(0.111)	(0.124)	(0.129)	(0.147)	(0.122)	(0.122)
Treatment	−0.172	−0.347**	−0.117	0.007	−0.148	−0.314**
	(0.139)	(0.161)	(0.161)	(0.176)	(0.152)	(0.151)
Treatment*Female	0.271*	0.525***	0.151	0.136	0.191	0.442**
	(0.164)	(0.186)	(0.194)	(0.205)	(0.179)	(0.179)
Treatment + Treatment*Female	0.099	0.178*	0.034	0.143	0.043	0.128
	(0.086)	(0.093)	(0.107)	(0.106)	(0.095)	(0.095)
Observations	709	550	508	446	605	561
Adjusted R^2	0.050	0.035	0.047	0.081	0.036	0.056
Panel C: The US is a free country where everyone's rights are respected no matter what their background						
Female	0.099	0.131	0.032	0.185	0.095	0.089
	(0.113)	(0.129)	(0.131)	(0.146)	(0.124)	(0.127)
Treatment	−0.025	−0.012	0.063	−0.073	−0.044	−0.037
	(0.137)	(0.158)	(0.158)	(0.178)	(0.150)	(0.151)
Treatment*Female	0.111	0.170	−0.016	0.118	0.093	0.116
	(0.162)	(0.183)	(0.190)	(0.207)	(0.177)	(0.177)
Treatment + Treatment*Female	0.086	0.158*	0.047	0.045	0.049	0.079
	(0.085)	(0.092)	(0.104)	(0.105)	(0.094)	(0.093)
Observations	707	549	506	444	604	561
Adjusted R^2	0.077	0.047	0.088	0.104	0.066	0.069
Panel D: In the US today, people like me are discriminated against (use agree as the negative response)						
Female	−0.012	0.059	−0.166	−0.020	−0.001	−0.009
	(0.114)	(0.137)	(0.129)	(0.146)	(0.122)	(0.129)
Treatment	−0.067	−0.106	−0.133	0.089	−0.128	−0.086
	(0.137)	(0.171)	(0.154)	(0.171)	(0.147)	(0.156)
Treatment*Female	0.203	0.310	0.272	0.120	0.178	0.250
	(0.163)	(0.197)	(0.190)	(0.203)	(0.175)	(0.185)
Treatment + Treatment*Female	0.136	0.204**	0.139	0.209*	0.050	0.164*
	(0.089)	(0.097)	(0.111)	(0.111)	(0.095)	(0.099)
Observations	709	551	506	447	605	562
Adjusted R^2	0.013	0.024	0.006	0.026	−0.006	0.025
Panel E: The Government in the US treats people like me fairly						
Female	0.028	0.046	−0.084	−0.008	0.053	0.076
	(0.111)	(0.131)	(0.127)	(0.143)	(0.121)	(0.127)
Treatment	−0.093	−0.217	−0.188	0.032	−0.077	−0.129
	(0.139)	(0.166)	(0.160)	(0.178)	(0.150)	(0.153)
Treatment*Female	0.224	0.347*	0.374**	0.059	0.230	0.177
	(0.163)	(0.190)	(0.190)	(0.209)	(0.176)	(0.181)
Treatment + Treatment*Female	0.131	0.130	0.186*	0.091	0.153	0.048
	(0.087)	(0.095)	(0.101)	(0.111)	(0.094)	(0.096)
Observations	699	543	502	439	598	556
Adjusted R^2	0.057	0.035	0.086	0.054	0.061	0.056

Note: Significant at the 10(*), 5(**), and 1(***)% level. Panels B-E use as their dependent variables dummies for whether the student disagrees with the statement shown (or agrees for Panel D) that is standardized by the mean and standard deviation for the control group. Panel A uses our main index which is the average of the standardized dummy variables across the four statements. Estimates come from regressions of each of these measures of societal cohesion on a treatment dummy, a dummy for if the student is female, and their interaction as well as dummies for whether the student is Asian, Black, Hispanic, or another race, younger than 23 years old, a freshman or a sophomore, poor, a Pell recipient, a transfer student, an international student, has a child at home, or attends a 2-year, 4-year, or graduate school. Robust standard errors are shown in parentheses. The overall treatment effect for females is shown in the *Treatment+Treatment*Female* rows with estimates from linear hypothesis tests for the coefficients in the two preceding rows.

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Table 4: Placebo Tests

	All	Excluding Asians	Excluding Blacks	Excluding Hispanics	Excluding Whites	w/o International Students
Panel A: Placebo 1						
Female	0.053	0.044	−0.034	0.106	0.066	0.064
	(0.072)	(0.084)	(0.081)	(0.093)	(0.081)	(0.081)
Placebo	−0.006	−0.019	−0.048	0.086	−0.048	−0.060
	(0.094)	(0.109)	(0.103)	(0.121)	(0.105)	(0.108)
Placebo*Female	0.057	0.078	0.099	−0.046	0.089	0.157
	(0.110)	(0.126)	(0.125)	(0.144)	(0.122)	(0.126)
Placebo + Placebo*Female	0.051	0.059	0.051	0.040	0.041	0.097
	(0.058)	(0.063)	(0.069)	(0.077)	(0.062)	(0.063)
Observations	720	578	529	425	622	549
Adjusted R^2	0.080	0.062	0.084	0.067	0.092	0.066
Panel B: Placebo 2						
Female	0.069	0.039	−0.024	0.139	0.090	0.062
	(0.073)	(0.087)	(0.082)	(0.094)	(0.082)	(0.082)
Placebo	0.029	−0.041	−0.049	0.115	0.072	0.103
	(0.090)	(0.112)	(0.103)	(0.112)	(0.100)	(0.106)
Placebo*Female	−0.008	0.084	0.048	−0.048	−0.083	−0.081
	(0.109)	(0.133)	(0.127)	(0.133)	(0.120)	(0.125)
Placebo + Placebo*Female	0.021	0.035	−0.001	0.067	−0.011	0.022
	(0.060)	(0.068)	(0.074)	(0.072)	(0.065)	(0.066)
Observations	697	536	492	450	594	538
Adjusted R^2	0.086	0.044	0.065	0.137	0.093	0.038

Note: Significant at the 10(*), 5(**), and 1(***)% level. Estimates come from regressions analogous to those in Table 3 but with a placebo dummy rather than a treatment dummy.

Appendix: Additional Tables and Figures

Table A.1: Societal Cohesion Statements

Respond to each statement with *strongly disagree, somewhat disagree, somewhat agree,* or *strongly agree*

(1) The US is a place where people are usually treated fairly no matter what background they come from.

(2) The US is a free country where everyone's rights are respected no matter what their background.

(3) In the US today, people like me are discriminated against.

(4) The Government in the US treats people like me fairly.

Table A.2: Balance Test (Excluding Asians)

Variable	Females			Males		
	T Mean	C Mean	Diff	T Mean	C Mean	Diff
Black	0.366	0.363	0.003	0.306	0.282	0.024
			(0.049)			(0.075)
Hispanic	0.429	0.456	-0.027	0.528	0.487	0.041
			(0.051)			(0.082)
White	0.171	0.149	0.023	0.167	0.205	-0.038
			(0.037)			(0.064)
Other Race	0.034	0.033	0.002	0	0.026	-0.026
			(0.018)			(0.019)
Younger than 23	0.491	0.451	0.04	0.5	0.5	0
			(0.051)			(0.082)
Poor	0.349	0.409	-0.061	0.431	0.359	0.072
			(0.05)			(0.08)
Pell	0.703	0.721	-0.018	0.556	0.59	-0.034
			(0.046)			(0.081)
International Student	0.154	0.14	0.015	0.083	0.154	-0.071
			(0.036)			(0.053)
First in College	0.526	0.553	-0.028	0.479	0.423	0.056
			(0.051)			(0.082)
Transfer	0.234	0.247	-0.012	0.264	0.308	-0.044
			(0.044)			(0.074)
Has Child at Home	0.372	0.38	-0.008	0.309	0.38	-0.071
			(0.052)			(0.081)
2-Year School	0.429	0.405	0.024	0.431	0.423	0.007
			(0.05)			(0.081)
4-Year School	0.52	0.54	-0.02	0.5	0.436	0.064
			(0.051)			(0.082)
Grad. School	0.051	0.056	-0.004	0.069	0.141	-0.072
			(0.023)			(0.05)

Note: Significant at 10(*), 5(**), or 1(***)% level. Sample sizes are N=396 females and N=155 males.

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Table A.3: Socio-demographic Characteristics at Baseline

Variable	Asian Mean	Non-Asian Mean	Diff.
Female	0.572	0.719	-0.147***
			0.043
Younger than 23	0.579	0.486	0.093**
			0.047
Poor	0.497	0.39	0.107**
			0.046
Pell	0.669	0.674	-0.005
			0.044
International Student	0.455	0.138	0.317***
			0.036
First in College	0.58	0.511	0.069
			0.047
Transfer	0.241	0.254	-0.012
			0.041
Has Child at Home	0.341	0.371	-0.03
			0.047
2-Year School	0.366	0.419	-0.053
			0.046
4-Year School	0.572	0.513	0.059
			0.047
Grad. School	0.062	0.069	-0.006
			0.023

Note: Significant at 10(*), 5(**), or 1(***)% level. Sample sizes are N=551 non-Asians and N=146 Asians.

Table A.4: Treatment Effect on other Societal Cohesion Indices

	All	Excluding Asians	Excluding Blacks	Excluding Hispanics	Excluding Whites	w/o International Students
Panel A: Continuous Cohesion Index						
Female	0.067	0.040	−0.013	0.071	0.084	0.070
	(0.104)	(0.123)	(0.117)	(0.130)	(0.117)	(0.121)
Treatment	−0.215*	−0.330**	−0.159	−0.152	−0.239*	−0.259*
	(0.127)	(0.153)	(0.144)	(0.162)	(0.140)	(0.144)
Treatment*Female	0.397**	0.592***	0.340*	0.365*	0.354**	0.417**
	(0.154)	(0.182)	(0.176)	(0.195)	(0.170)	(0.176)
Treatment + Treatment*Female	0.182**	0.272***	0.181*	0.213**	0.115	0.158
	(0.086)	(0.098)	(0.099)	(0.107)	(0.094)	(0.099)
Observations	697	541	501	437	597	555
Adjusted R^2	0.096	0.071	0.090	0.130	0.091	0.086
Panel B: Strongly Disagree vs Rest						
Female	0.082	0.100	0.070	0.048	0.079	0.103
	(0.084)	(0.104)	(0.094)	(0.103)	(0.096)	(0.100)
Treatment	−0.213**	−0.241**	−0.158	−0.202*	−0.224**	−0.243**
	(0.094)	(0.120)	(0.104)	(0.116)	(0.106)	(0.109)
Treatment*Female	0.317***	0.413***	0.254*	0.321**	0.301**	0.321**
	(0.119)	(0.147)	(0.132)	(0.147)	(0.133)	(0.138)
Treatment + Treatment*Female	0.104	0.172**	0.096	0.119	0.077	0.078
	(0.072)	(0.083)	(0.080)	(0.090)	(0.078)	(0.083)
Observations	697	541	501	437	597	555
Adjusted R^2	0.085	0.054	0.073	0.120	0.081	0.081

Note: Significant at the 10(*), 5(**), and 1(***)% level. Estimates come from regressions analogous to those in panel A of Table 3 but with the other societal cohesion indices. Like the main index, both of these indices are averages across standardized variables for the four statements. The continuous cohesion index in panel A uses a continuous measure of a student's response to each statement with 0 being the most positive response (typically strongly agrees) and 3 being the most negative (typically strongly disagree) whereas panel B uses a dummy for whether the student gave the most negative response (strongly disagree for all of the statements besides the one on discrimination).